Advanced System Command Reference for Cisco CRS Router

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CONTENTS

Preface

This Preface contains these sections:

Changes to This Document

This table lists the changes made to this document since it was first printed.

Table 1: Changes to This Document

Date	Change Summary
March 2017	Initial release of this document.
July 2017	Republished for Release 6.2.2.
March 2018	Republished for Release 6.3.2.
March 2018	Republished for Release 6.4.1.
July 2018	Republished for Release 6.5.1.
January 2019	Republished for Release 6.5.2.
March 2019	Republished for Release 6.5.3.
April 2019	Republished for Release 6.6.2
December 2019	Republished for Release 6.6.3

Communications, Services, and Additional Information

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Cisco Bug Search Tool

Cisco Bug Search Tool (BST) is a web-based tool that acts as a gateway to the Cisco bug tracking system that maintains a comprehensive list of defects and vulnerabilities in Cisco products and software. BST provides you with detailed defect information about your products and software.

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.

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

asic-scan egressq (block number)

To run, enable, or disable a generic ASIC scan on a specific egress queue ASIC block ID or error cause, use the **asic-scan egressq** command in EXEC mode.

asic-scan egressq *block_number* [{[*error_cause*] [{**disable** | **enable**}] | **help-cause**}] **location** *node-id*

Syntax Description

block_number	Identifies the block on which to enable or disable the ASIC scan.
error_cause	(Optional) Identifies an error cause in the specified block. When you include the *error_cause* argument in the **asic-scan egressq** command syntax, the command takes place on the specified error cause.
disable	(Optional) Disables the ASIC scan on the specified block or error cause.
enable	(Optional) Enables the ASIC scan on the specified block or error cause.
help_cause	(Optional) Displays a list of all error causes in the specified block.
location *node-id*	Identifies the location of the node hosting the egress queue on which to run, enable, or disable an ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to display a list of all error causes in the specified block:

```
RP/0/RP0/CPU0:router# asic-scan egressq 10 help-cause location 0/6/CPU0

Total 6 cause(s)

Cause Number          Cause Name
0                     lbm_owl_ovl
1                     scr_m4_ovl
2                     scr_m3_ovl
3                     scr_m2_ovl
4                     scr_m1_ovl
5                     scr_m0_ovl
```

The following example shows how to run a scan on the egress queue ASIC block ID 30 located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan egressq 30 location 0/6/CPU0
```

asic-scan egressq disable

To disable an ASIC scan on all causes in all blocks on the specified node, use the **asic-scan egressq disable** command in EXEC mode.

asic-scan egressq disable location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node on which to disable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.5.0	This command was introduced.
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Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to disable an ASIC scan on all causes in all blocks on the egress queue that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan egressq disable location 0/6/CPU0
```

asic-scan egressq enable

To enable an ASIC scan on all causes in all blocks on the specified node, use the **asic-scan egressq enable** command in EXEC mode.

asic-scan egressq enable location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node on which to enable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
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Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to enable an ASIC scan on all causes in all blocks on the egress queue that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan egressq enable location 0/6/CPU0
```

asic-scan egressq help-block

To enable an ASIC scan that lists all the blocks on the specified node, use the **asic-scan egressq help-block** command in EXEC mode.

asic-scan egressq help-block location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node on which to enable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to enable an ASIC scan that lists all block numbers on the egress queue that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan egressq help-block location 0/6/CPU0
```

asic-scan egressq location

To run an ASIC scan on all the egress queues on a specific node, use the **asic-scan egressq location** command in EXEC mode.

asic-scan egressq location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node hosting the egress queues on which to run the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.5.0	This command was introduced.
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Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to run an ASIC scan on all egress queues located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan egressq location 0/1/CPU0
```

asic-scan egressq quick-scan

To run a quick ASIC scan on a specific file or on all bits of the chip, use the **asic-scan egressq quick-scan** command in EXEC mode.

asic-scan egressq quick-scan {*filename* | **allscan**} **location** *node-id*

Syntax Description

filename	Name of the .xsvf file on which to run the quick ASIC scan
allscan	Performs a quick ASIC scan on all bits of the chip, including the preread for Metro.
location *node-id*	Identifies the location of the node hosting the egress queue on which to run the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to run a quick ASIC scan on all bits of the chip on the egress queue that is located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan egressq quick-scan allscan location 0/1/CPU0
```

asic-scan pse egress (block number)

To run, enable, or disable a generic ASIC scan on a specific egress packet switching engine (PSE) device block or error cause, use the **asic-scan pse egress** command in EXEC mode.

asic-scan pse egress *block_number* [{[*error_cause*] [{**disable**|**enable**}]|**help-cause**}] **location** *node-id*

Syntax Description

block_number	Identifies the block on which to enable or disable the ASIC scan.
error_cause	(Optional) Identifies an error cause in the specified block. When you include the *error_cause* argument in the **asic-scan pse egress** command syntax, the command takes place on the specified error cause.
disable	(Optional) Disables the ASIC scan on the specified block or error cause.
enable	(Optional) Enables the ASIC scan on the specified block or error cause.
help_cause	(Optional) Displays a list of all error causes in the specified block.
location *node-id*	Identifies the location of the node hosting the egress PSE device on which to run, enable, or disable an ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to display a list of all error causes in the specified block of a PSE device:

```
RP/0/RP0/CPU0:router# asic-scan pse egress 10 help-cause location 0/6/CPU0

Total 6 cause(s)

Cause Number          Cause Name
0                     lbm_owl_ovl
1                     scr_m4_ovl
2                     scr_m3_ovl
3                     scr_m2_ovl
4                     scr_m1_ovl
5                     scr_m0_ovl
```

The following example shows how to run a scan on the PSE ASIC block ID 30 located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan pse egress 30 location 0/6/CPU0
```

asic-scan pse egress disable

To disable an ASIC scan on all causes in all blocks of a specific packet switching engine (PSE) device, use the **asic-scan pse egress disable** command in EXEC mode.

asic-scan pse egress disable location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node on which to disable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to disable an ASIC scan on all causes in all blocks of the egress PSE device that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan pse egress disable location 0/6/CPU0
```

asic-scan pse egress enable

To enable an ASIC scan on all causes in all blocks of a specific egress packet switching engine (PSE) device, use the **asic-scan pse egress enable** command in EXEC mode.

asic-scan pse egress enable location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node that hosts the egress PSE on which to enable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
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Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to enable an ASIC scan on all causes in all blocks on the egress PSE that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan pse egress enable location 0/6/CPU0
```

asic-scan pse egress help-block

To enable an ASIC scan that lists all block numbers of a specific egress packet switching engine (PSE) device, use the **asic-scan pse egress help-block** command in EXEC mode.

asic-scan pse egress help-block location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node that hosts the egress PSE on which to enable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to enable an ASIC scan that lists all block numbers on the egress PSE that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan pse egress help-block location 0/6/CPU0
```

asic-scan pse egress location

To run an ASIC scan on a specific packet switching engine (PSE) device, use the **asic-scan pse egress location** command in EXEC mode.

asic-scan pse egress location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node hosting the PSE on which to run the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to run an ASIC scan on all egress PSE located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan pse egress location 0/1/CPU0
```

asic-scan pse egress quick-scan

To run a quick ASIC scan on a specific file or on all bits of the chip located on a specific packet switching engine (PSE) device, use the **asic-scan pse egress quick-scan** command in EXEC mode.

asic-scan pse egress quick-scan {*filename* | **allscan**} **location** *node-id*

Syntax Description

filename	Name of the .xsvf file on which to run the quick ASIC scan
allscan	Performs a quick ASIC scan on all bits of the chip, including the preread for Metro.
location *node-id*	Identifies the location of the node hosting the egress PSE on which to run the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to run a quick ASIC scan on all bits of the chip on the egress PSE device that is located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan pse egress quick-scan allscan location 0/1/CPU0
```

asic-scan pse ingress (block number)

To run, enable, or disable a generic ASIC scan on a specific ingress packet switching engine (PSE) device block or error cause, use the **asic-scan pse ingress** command in EXEC mode.

asic-scan pse ingress *block_number* [{[*error_cause*] [{**disable** | **enable**}] | **help-cause**}] **location** *node-id*

Syntax Description

block_number	Identifies the block on which to enable or disable the ASIC scan.
error_cause	(Optional) Identifies an error cause in the specified block. When you include the *error_cause* argument in the **asic-scan pse ingress** command syntax, the command takes place on the specified error cause.
disable	(Optional) Disables the ASIC scan on the specified block or error cause.
enable	(Optional) Enables the ASIC scan on the specified block or error cause.
help-cause	(Optional) Displays a list of all error causes in the specified block.
location *node-id*	Identifies the location of the node hosting the ingress PSE device on which to run, enable, or disable an ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to display a list of all error causes in the specified block of a PSE device:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress 10 help-cause location 0/6/CPU0

 Total 6 cause(s)

 Cause Number          Cause Name
 0                     lbm_owl_ovl
 1                     scr_m4_ovl
 2                     scr_m3_ovl
 3                     scr_m2_ovl
 4                     scr_m1_ovl
 5                     scr_m0_ovl
```

The following example shows how to run a scan on the PSE ASIC block ID 30 located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress 30 location 0/6/CPU0
```

asic-scan pse ingress disable

To disable an ASIC scan on all causes in all blocks of a specific packet switching engine (PSE) device, use the **asic-scan pse ingress disable** command in EXEC mode.

asic-scan pse ingress disable location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node on which to disable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to disable an ASIC scan on all causes in all blocks of the ingress PSE device that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress disable location 0/6/CPU0
```

asic-scan pse ingress enable

To enable an ASIC scan on all causes in all blocks of a specific ingress packet switching engine (PSE) device, use the **asic-scan pse ingress enable** command in EXEC mode.

asic-scan pse ingress enable location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node that hosts the ingress PSE on which to enable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	Note was added in the Usage Guidelines section that this command can adversely affect the router operation.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to enable an ASIC scan on all causes in all blocks on the ingress PSE that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress enable location 0/6/CPU0
```

asic-scan pse ingress help-block

To enable an ASIC scan that lists all block numbers of a specific ingress packet switching engine (PSE) device, use the **asic-scan pse ingress help-block** command in EXEC mode.

asic-scan pse ingress help-block location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node that hosts the ingress PSE on which to enable the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to enable an ASIC scan that lists all block numbers on the ingress PSE that is located on the CPU node in slot 6:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress help-block location 0/6/CPU0
```

asic-scan pse ingress location

To run an ASIC scan on a specific packet switching engine (PSE) device, use the **asic-scan pse ingress location** command in EXEC mode.

asic-scan pse ingress location *node-id*

Syntax Description

location *node-id*	Identifies the location of the node hosting the PSE on which to run the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
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Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to run an ASIC scan on all ingress PSE located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress location 0/1/CPU0
```

asic-scan pse ingress quick-scan

To run a quick ASIC scan on a specific file or on all bits of the chip located on a specific packet switching engine (PSE) device, use the **asic-scan pse ingress quick-scan** command in EXEC mode.

asic-scan pse ingress quick-scan {*filename* | **allscan**} **location** *node-id*

Syntax Description

filename	Name of the .xsvf file on which to run the quick ASIC scan
allscan	Performs a quick ASIC scan on all bits of the chip, including the preread for Metro.
location *node-id*	Identifies the location of the node hosting the ingress PSE on which to run the ASIC scan. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
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Usage Guidelines

This command should be used only with Cisco support supervision. Incorrect usage of this command can accidentally remove the relevant card from service.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to run a quick ASIC scan on all bits of the chip on the ingress PSE device that is located on the CPU node in slot 1:

```
RP/0/RP0/CPU0:router# asic-scan pse ingress quick-scan allscan location 0/1/CPU0
```

clear controller egressq queue

To clear a specific controller egress queue, use the **clear controller egressq queue** command in EXEC mode.

clear controller egressq queue *queue-id1* [*queue-id2*] **location** *node-id*

Syntax Description

queue-id1	Queue you want to clear. Replace *the queue-id1* argument with a queue number. Range is from 1 through 8191.
queue-id2	(Optional) Last queue in a range of queues to clear. Replace the *queue-id2* argument with a queue number. Range is from 1 through 8191.
location *node-id*	Identifies the location of the node whose egress queue you want to clear. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

If you enter the optional *queue-id2* argument after you enter the *queue-id1* argument, then the *queue-id1* argument specifies the first queue in a range of queues to be cleared. If you enter the *queue-id1* argument without specifying the *queue-id2* argument, then only the queue specified for *queue-id1* is cleared.

Task ID

Task ID	Operations
root-system	read
basic-services	read, write
drivers	read, write

Examples

The following example shows how to clear a specific controller egress queue:

```
RP/0/RP0/CPU0:router# clear controller egress queue 1 location 0/1/CPU0
```

clear controller egressq queue all

To clear all controller egress queues on a specific node, use the **clear controller egressq queue all** command in EXEC mode.

clear controller egressq queue all location *node-id*

Syntax Description

all	Clears all egress queues in the specified location.
location *node-id*	Identifies the location of the egressq queue you want to clear. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The basic-services and root-systems were removed from this command.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to clear all controller egress queues on a specific node:

```
RP/0/RP0/CPU0:router# clear controller egress queue all location 0/1/CPU0
```

clear controller egressq statistics

To clear the egress queue statistics in a specific location, use the **clear controller egressq statistics** command in EXEC mode.

clear controller egressq statistics location *node-id*

Syntax Description

location *node-id*	Identifies the location of the egressq queue whose statistics you want to clear. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to clear all controller egress queue statistics on a specific node:

```
RP/0/RP0/CPU0:router# clear controller egressq statistics location 0/1/CPU0
```

clear controller pse statistics

To clear statistics maintained by the packet switching engine (PSE) on a specific node, use the **clear controller pse statistics** command in EXEC mode.

clear controller pse statistics [{**egress** | **ingress**}]**location** *node-id*

Syntax Description

egress	(Optional) Clears statistics on the egress PSE device only.
ingress	(Optional) Clears statistics on the ingress PSE device only.
location *node-id*	Identifies the location of the node whose PSE device statistics you want to clear. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router.

Command Default

If the **egress** or **ingress** keywords are not specified, the **clear controller pse statistics** command takes effect on both device instances.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	• The **instance 0** and **instance 1** keywords were replaced by the **ingress** and **egress** keywords. • The **clear controller pse statistics** command was removed from the root-system task-ID. • The **clear controller pse statistics** command was first supported under the interface task-ID.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read, write
drivers	read, write

Examples

The following example shows how to clear all PSE statistics on a specific node (0/1/CPU0):

```
RP/0/RP0/CPU0:router# clear controller pse statistics location 0/1/CPU0
```

The following example shows how to clear all egress PSE statistics on a specific node (0/6/CPU0):

```
RP/0/RP0/CPU0:router# clear controller pse statistics egress location 0/6/CPU0
```

Related Commands

Command	Description
show controllers pse summary, on page 124	Displays a summary of packet switching engine information for a specific controller or node.

show controllers cpuctrl cdma channel

To display information about the CPU controller Control Direct-Memory-Access (CDMA) engine, use the **show controllers cpuctrl cdma channel** command in EXEC mode.

show controllers cpuctrl cdma channel {**0** | **1**} **queue** {*queue-id* | **all**} {**active** | **detail**} [**location** *node-id*]

Syntax Description

{**0** | **1**}	Displays CPU controller CDMA engine information for the specified channel. Enter **0** to display CDMA engine information for channel 0, or enter **1** to display CDMA engine information for channel 1.
queue {*queue-id* | **all**}	Displays CDMA information for a specific Direct-Memory-Access (DMA) queue, or for all DMA queues on the specified channel. • Enter the **queue all keywords** to display CDMA information for all DMA queues on the specified channel. • Enter the **queue**keyword and *queue-id argument* to display CDMA information for a specific queue. Replace the *queue-id* argument with a queue number. Range is from 1 through 7.
active	Displays descriptions for active DMA queues only.
detail	Displays descriptions for any DMA queues, regardless of whether they are active.
location *node-id*	(Optional) Identifies the location of the node whose CPU controller CDMA information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	• The **show controllers cpuctrl cdma** command was replaced by the **show controllers cpuctrl cdma channel** command. • The **show controllers cpuctrl cdma channel** command was first supported under the interface task-ID.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows partial output from the **show controllers cpuctrl cdma channel** command with the **active** keyword.

```
RP/0/RP0/CPU0:router# show controllers cpuctrl cdma channel all active

Mon Nov  9 23:13:08.235 PST
-------------------------------------------------------
DMA queue:
Channel: 0     queue: 0        state: Inactive

-------------------------------------------------------
DMA queue:
Channel: 0     queue: 1        state: Active

       OS Interrupt Level =        108   Cpuctrl Int Level =         12
          OS Run Priority =         45       client handle =          1
              ISR context = 0x9c35c49c  Pakman/Bufman Inst = bufman/misc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                  Pakmode = 0x00000002           Pollflags = 0x00000000
   Total DMA transactions =          3  Queue create count =          1
         DMA transactions =          3   Bytes transferred =      67584

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe4037300    Physical address = 0x76037300
               list_size =         32  Active descriptors =          0
           current_index =          3    tx_enqueue_index =          3

-------------------------------------------------------
DMA queue:
Channel: 0     queue: 2        state: Inactive

-------------------------------------------------------
DMA queue:
Channel: 0     queue: 3        state: Active

       OS Interrupt Level =        107   Cpuctrl Int Level =         11
          OS Run Priority =         30       client handle =          0
              ISR context = 0x9c35cd84  Pakman/Bufman Inst = bufman/mipc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                  Pakmode = 0x00000005           Pollflags = 0x00000000
   Total DMA transactions =     115622  Queue create count =          1
         DMA transactions =     115622   Bytes transferred =   10213420

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe4051100    Physical address = 0x76051100
               list_size =        256  Active descriptors =          0
           current_index =        166    tx_enqueue_index =        166

-------------------------------------------------------
DMA queue:
Channel: 0     queue: 4        state: Active

       OS Interrupt Level =        113   Cpuctrl Int Level =         17
          OS Run Priority =         45       client handle =          5
              ISR context = 0x9c35c748  Pakman/Bufman Inst = bufman/misc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                  Pakmode = 0x00000002           Pollflags = 0x00000000
   Total DMA transactions =        321  Queue create count =          1
```

```
         DMA transactions =        321   Bytes transferred =      42594

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe40d2068    Physical address = 0x760d2068
                list_size =       1023  Active descriptors =          0
            current_index =        321    tx_enqueue_index =        321

------------------------------------------------------
DMA queue:
Channel: 0     queue: 5        state: Active

       OS Interrupt Level =        111   Cpuctrl Int Level =         15
          OS Run Priority =         45       client handle =          3
              ISR context = 0x9c35cad8  Pakman/Bufman Inst = bufman/misc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                  Pakmode = 0x00000002           Pollflags = 0x00000000
   Total DMA transactions =        376  Queue create count =          1
         DMA transactions =        376   Bytes transferred =       7674

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe4047110    Physical address = 0x76047110
                list_size =        128  Active descriptors =          0
            current_index =        120    tx_enqueue_index =        120

------------------------------------------------------
DMA queue:
Channel: 0     queue: 6        state: Active

       OS Interrupt Level =        112   Cpuctrl Int Level =         16
          OS Run Priority =         45       client handle =          6
              ISR context = 0x9c35c9f4  Pakman/Bufman Inst = bufman/misc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                  Pakmode = 0x00000002           Pollflags = 0x00000000
   Total DMA transactions =        306  Queue create count =          1
         DMA transactions =        306   Bytes transferred =     394340

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe40d7068    Physical address = 0x760d7068
                list_size =       1023  Active descriptors =          0
            current_index =        306    tx_enqueue_index =        306

------------------------------------------------------
DMA queue:
Channel: 0     queue: 7        state: Active

       OS Interrupt Level =        110   Cpuctrl Int Level =         14
          OS Run Priority =         45       client handle =          4
              ISR context = 0x9c35c580  Pakman/Bufman Inst = bufman/misc
 client callback function = 0x4cad1130    cleanup function = 0x4cad058c
                  Pakmode = 0x00000002           Pollflags = 0x00000000
   Total DMA transactions =     140344  Queue create count =          1
         DMA transactions =     140344   Bytes transferred = 2344779856

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe40cd068    Physical address = 0x760cd068
                list_size =       1023  Active descriptors =          0
```

```
            current_index =        193    tx_enqueue_index =        193

------------------------------------------------------
DMA queue:
Channel: 1     queue: 0        state: Inactive

------------------------------------------------------
DMA queue:
Channel: 1     queue: 1        state: Active

       OS Interrupt Level =        108   Cpuctrl Int Level =         12
          OS Run Priority =         45       client handle =          1
              ISR context = 0x9c35c49c  Pakman/Bufman Inst = bufman/misc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                 Pakmode = 0x00000002           Pollflags = 0x00000000
   Total DMA transactions =          3  Queue create count =          1
         DMA transactions =          3   Bytes transferred =      67584

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe40370f0    Physical address = 0x760370f0
                list_size =         32  Active descriptors =          0
            current_index =          3    tx_enqueue_index =          3

------------------------------------------------------
DMA queue:
Channel: 1     queue: 2        state: Inactive

------------------------------------------------------
DMA queue:
Channel: 1     queue: 3        state: Active

       OS Interrupt Level =        106   Cpuctrl Int Level =         10
          OS Run Priority =         30       client handle =          0
              ISR context = 0x9c35ce68  Pakman/Bufman Inst = bufman/mipc
 client callback function = 0x4c60df28    cleanup function = 0x4c60ded8
                 Pakmode = 0x00000005           Pollflags = 0x00000000
   Total DMA transactions =     114238  Queue create count =          1
         DMA transactions =     114238   Bytes transferred =    8686924

     DMA Out of Desc errs =          0             DMA IWA =          0
     DMA transaction errs =          0

Descriptor list base addr = 0xe4052110    Physical address = 0x76052110
                list_size =        256  Active descriptors =          0
            current_index =         62    tx_enqueue_index =         62
--More--
```

This table describes the significant fields shown in the display.

Table 2: show controllers cpuctrl cdma channel Field Descriptions

Field	Description
DMA queue	Identifies the DMA[1] queue.
Channel	Identifies the channel whose DMA queue is displayed. 0 is the ingress channel, and 1 is the egress channel
queue	Identifies the queue.

Field	Description
state	Current state of the queue.
OS Interrupt Level	Current interrupt level for the queue.
Cpuctrl Interrupt Level	Current interrupt level for the CPU controller.
OS Run Priority	Run priority level for this queue.
client handle	Internal identifier for the Cisco client.
ISR context	Internal information about the location of the ISR2 pointer.
Pakman/Bufman Instance	Internal information about the location of the Pakman and Bufman Instance.
client callback function pointer	Internal information about the client callback function pointer.
cleanup function	Internal information about the client cleanup function pointer.
Queue Created 1 times	Number of times this queue was regenerated.
Pakmode	Information about internal data structures and parameters.
Pollflags	Specifies whether the CDMA queue uses a polling or interrupt-driven approach for detecting CDMA operation completion notification. **Note** Currently, CDMA queues use interrupt driven completion only. PDMA queues use interrupt-driven and polling completion.
Total DMA transactions	Number of DMA transactions in the queue.
Queue create count	Number of times this queue was regenerated.
DMA transactions	Number of DMA transactions in the queue.
Bytes transferred	Number of bytes that have been transferred by the Control Direct-Memory-Access engine.
DMA Out of Desc errs	Number of DMA errors in the queue.
CDMA transactions	Number of CDMA transactions in the queue.
DMA IWA	Number of IWA bytes that have been processed by the Direct-Memory-Access engine.
DMA transaction errs	Number of DMA transactions that had errors.
Descriptor list base addr	Internal information about the location of the descriptor list.
Physical address	Physical address of the CPU memory that holds the descriptors in the ring used by the CDMA queue hardware.
list_size	Total number of descriptors in the ring used by the CDMA queue hardware.

Field	Description
Active descriptors	Number of descriptors that have transactions that are not cleaned after being notified of their completion. Note that the hardware may not yet have completed these transactions.
current_index	Points to the next descriptor that the hardware is expected to complete.
tx_enqueue_index	Points to the descriptor that will be added to the next operation request.
Index	Location of the descriptor in the ring.
Shadow	Internal field that manages requests that have been split into multiple descriptors.
Hdr	Internal field that manages requests that have been split into multiple descriptors.
Flags	Internal field that manages requests that have been split into multiple descriptors.
Descriptor	Descriptor heading.
Width	Width of the data on the ASIC side in bits. The DMA stride is rounded up to the next power of two bytes that contains this number of bits.
Bufsize	Size of the buffer used for the transfer.
Xfersize	Number of bytes on the CPU memory that are occupied by the transfer.
Memaddr	36 bit physical address of the CPU memory in the transfer.
Squidaddr	40 bit address of the ASIC register or memory in the transfer.

[1] Direct Memory Access

Related Commands

Command	Description
show controllers cpuctrl clients, on page 35	Displays information about all CPU controller clients on the router, or for specific CPU controller clients.

show controllers cpuctrl clients

To display information about all CPU controller clients on the router, or for specific CPU controller clients, use the **show controllers cpuctrl clients** command in EXEC mode.

show controllers cpuctrl clients {**all** | **cdma** *clients* | **pdma** *clients*} {**active** | **detail**} [**location** *node-id*]

Syntax Description

all	Displays a summary information for all clients on the router.
cdma *clients*	Displays information about Control Direct-Memory-Access (CDMA) clients only. Replace the *clients* argument with one of the following keywords: • **dcc**—Displays information for the DCC client. • **egressq**—Displays information for the egressq client. • **fabricq**—Displays information for the Fabricq ASIC client. • **fia**—Displays information for the Fabric Interface ASIC (FIA) client. • **ingressq**—Displays information for the ingressq ASIC client. • **jacketcard**—Displays information for the jacketcard client. • **mipc**—Displays information for the Metro Inter-Process-Communication (MIPC) client. • **pla768**—Displays information for the ASIC client for OC-768. • **plaspa**—Displays information for the ASIC client for the SPA. • **plim**—Displays information for the PLIM client. • **plimasic**—Displays information for the PLIM ASIC client. • **pse**—Displays information for the PSE client.
pdma *clients*	Displays information for Packet Direct-Memory-Access (PDMA) clients only. Replace *clients* with one of the following keywords: • **bfd**—Displays information for the client bidirectional forwarding detection (BFD) PDMA packet. • **diag**—Displays information for the PDMA client called DIAG packet. • **fabio**—Displays information for the FABIO PDMA packet client. • **fia**—Displays information for the fabric interface ASIC packet PDMA client. • **frr**—Displays information for the fast reroute (FRR) packet PDMA client. • **gsp**—Displays information for the Group Services Packet (GSP) PDMA client. • **mipc**—Displays information for the MIPC packet PDMA client. • **mstats**—Displays information for the MSTATS packet PDMA client. • **netflow**—Displays information for the NetFlow packet PDMA client.
active	Displays descriptions for active queues only.
detail	Displays descriptions for any queues, regardless of whether or not they are active.
location *node-id*	(Optional) Identifies the location of the node whose CPU controller information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default No default behavior or values

Command Modes EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The **show controllers cpuctrl clients** command was first supported under the interface task-ID.
Release 3.6.0	The following keywords were added: • **bfd** • **fabio** • **pla768** • **plaspa** The **netio** keyword was removed.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples The following example shows how to display information about all the CPU controller clients:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl clients all

Mon Nov  2 15:27:45.524 UTC
-------------------------------------------------------------
DMA client:     client_name: MIPC       client_handle:0
isr_count: 2    queue_count:   2        client_pid:    90186

-------------------------------------------------------------
DMA client:     client_name: Pse        client_handle:1
isr_count: 1    queue_count:   2        client_pid:    90186

-------------------------------------------------------------
DMA client:     client_name: DCC        client_handle:2
isr_count: 0    queue_count:   0        client_pid:    0

-------------------------------------------------------------
DMA client:     client_name: PlimAsic   client_handle:3
isr_count: 1    queue_count:   1        client_pid:    86063

-------------------------------------------------------------
DMA client:     client_name: Egressq    client_handle:4
isr_count: 1    queue_count:   1        client_pid:    94283

-------------------------------------------------------------
DMA client:     client_name: Ingressq   client_handle:5
isr_count: 1    queue_count:   1        client_pid:    65592
```

```
------------------------------------------------------------
DMA client:     client_name: Fabricq    client_handle:6
isr_count: 1    queue_count:   1        client_pid:    65591

------------------------------------------------------------
DMA client:     client_name: PLIM       client_handle:7
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: FIA        client_handle:8
isr_count: 0    queue_count:   0        client_pid:    65595

------------------------------------------------------------
DMA client:     client_name: JacketCard client_handle:9
isr_count: 0    queue_count:   0        client_pid:    81991

------------------------------------------------------------
PKT client:     client_name: FRR        client_handle:0
isr_count: 1    queue_count:   2        client_pid:    73794

------------------------------------------------------------
PKT client:     client_name: GSP        client_handle:1
isr_count: 2    queue_count:   4        client_pid:    73794

------------------------------------------------------------
PKT client:     client_name: IPC        client_handle:2
isr_count: 1    queue_count:   1        client_pid:    24602

------------------------------------------------------------
PKT client:     client_name: MIPC       client_handle:3
isr_count: 1    queue_count:   2        client_pid:    90186

------------------------------------------------------------
PKT client:     client_name: MSTATS     client_handle:4
isr_count: 2    queue_count:   2        client_pid:    94284

------------------------------------------------------------
PKT client:     client_name: NETFLOW    client_handle:5
isr_count: 2    queue_count:   2        client_pid:    147612

------------------------------------------------------------
PKT client:     client_name: FABIO      client_handle:6
isr_count: 1    queue_count:   13       client_pid:    65589

------------------------------------------------------------
PKT client:     client_name: FIA        client_handle:7
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: DIAG       client_handle:8
isr_count: 1    queue_count:   3        client_pid:    118896

------------------------------------------------------------
PKT client:     client_name: BFD        client_handle:9
isr_count: 1    queue_count:   2        client_pid:    118883

------------------------------------------------------------
DMA client:     client_name: MIPC       client_handle:0
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Pse        client_handle:1
isr_count: 0    queue_count:   0        client_pid:    0
```

```
------------------------------------------------------------
DMA client:     client_name: DCC        client_handle:2
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: PlimAsic   client_handle:3
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Egressq    client_handle:4
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Ingressq   client_handle:5
isr_count: 1    queue_count:   1        client_pid:    122941

------------------------------------------------------------
DMA client:     client_name: Fabricq    client_handle:6
isr_count: 1    queue_count:   1        client_pid:    122939

------------------------------------------------------------
DMA client:     client_name: PLIM       client_handle:7
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: FIA        client_handle:8
isr_count: 0    queue_count:   0        client_pid:    122943

------------------------------------------------------------
DMA client:     client_name: JacketCard client_handle:9
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: FRR        client_handle:0
isr_count: 1    queue_count:   2        client_pid:    122952

------------------------------------------------------------
PKT client:     client_name: GSP        client_handle:1
isr_count: 2    queue_count:   4        client_pid:    122952

------------------------------------------------------------
PKT client:     client_name: IPC        client_handle:2
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: MIPC       client_handle:3
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: MSTATS     client_handle:4
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: NETFLOW    client_handle:5
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: FABIO      client_handle:6
isr_count: 1    queue_count:   4        client_pid:    122935

------------------------------------------------------------
PKT client:     client_name: FIA        client_handle:7
isr_count: 0    queue_count:   0        client_pid:    0
```

```
------------------------------------------------------------
PKT client:     client_name: DIAG       client_handle:8
isr_count: 1    queue_count:   2        client_pid:    147600

------------------------------------------------------------
PKT client:     client_name: BFD        client_handle:9
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: MIPC       client_handle:0
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Pse        client_handle:1
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: DCC        client_handle:2
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: PlimAsic   client_handle:3
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Egressq    client_handle:4
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Ingressq   client_handle:5
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: Fabricq    client_handle:6
isr_count: 1    queue_count:   1        client_pid:    147511

------------------------------------------------------------
DMA client:     client_name: PLIM       client_handle:7
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: FIA        client_handle:8
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
DMA client:     client_name: JacketCard client_handle:9
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: FRR        client_handle:0
isr_count: 1    queue_count:   2        client_pid:    155718

------------------------------------------------------------
PKT client:     client_name: GSP        client_handle:1
isr_count: 2    queue_count:   4        client_pid:    155718

------------------------------------------------------------
PKT client:     client_name: IPC        client_handle:2
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: MIPC       client_handle:3
isr_count: 0    queue_count:   0        client_pid:    0
```

```
------------------------------------------------------------
PKT client:     client_name: MSTATS     client_handle:4
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: NETFLOW    client_handle:5
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: FABIO      client_handle:6
isr_count: 1    queue_count:   4        client_pid:    147508

------------------------------------------------------------
PKT client:     client_name: FIA        client_handle:7
isr_count: 0    queue_count:   0        client_pid:    0

------------------------------------------------------------
PKT client:     client_name: DIAG       client_handle:8
isr_count: 1    queue_count:   2        client_pid:    180341

------------------------------------------------------------
PKT client:     client_name: BFD        client_handle:9
isr_count: 0    queue_count:   0        client_pid:    0
```

This table describes the significant fields shown in the display.

Table 3: show controllers cpuctrl clients Field Descriptions

Field	Description
client	Client type. Value is DMA[2] or PKT.
client_name	Name of the client.
client_handle	Internal client identifier.
isr_count	ISR[3] counters.
queue_count	Queue counters.
client_pid	Client PID[4].

[2] Direct Memory Access
[3] Interrupt Service Routine
[4] Process Identifier

Related Commands

Command	Description
show controllers cpuctrl summary, on page 57	Displays summarized information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node.

show controllers cpuctrl devices

To display information about the CPU controller devices on the router, use the **show controllers cpuctrl devices** command in EXEC mode.

show controllers cpuctrl devices *device-name* {**pdma** *queue* {**all** | **tx** | **rx**} {**active** | **detail**} | **pio**} [**location** *node-id*]

Syntax Description

device-name	Displays information about a specific CPU controller device. Replace the *device-name argument* with one of the following device names: • **egressq**—Displays information about the egressq ASIC instance 0. • **epse**—Displays information about the egress packet switching engine (PSE) ASIC. • **fabricq instance 0**—Displays information about the fabricq ASIC instance 0. • **fabricq instance 1**—Displays information about the fabricq ASIC instance 1. • **fabricq instance 2**—Displays information about the fabricq ASIC instance 2. • **fabricq instance 3**—Displays information about the fabricq ASIC instance 3. • **fia instance 0**—Displays information about the Fabric Interface ASIC (FIA) instance 0. • **fia instance 1**—Displays information about the FIA instance 1. • **ingressq**—Displays information about the ingressq ASIC. • **ipse**—Displays information about the ingress packet switching engine (PSE) ASIC. • **jacketcard instance 0**—Displays information about the jacketcard instance 0 ASIC. • **jacketcard instance 1**—Displays information about the jacketcard instance 1 ASIC. • **jacketcard instance 2**—Displays information about the jacketcard instance 2 ASIC. • **plim asic instance 0**—Displays information about the PLIM ASIC instance 0. • **plim asic instance 1**—Displays information about the PLIM ASIC instance 1. • **plim asic instance 2** —Displays information about the PLIM ASIC instance 2. • **plim asic instance 3**—Displays information about the PLIM ASIC instance 3. • **plim fpga**—Displays information about the field-programmable gate array (FPGA) PLIM.
pdma *queue* **all**	Displays transmit and receive Packet Direct-Memory-Access (PDMA) information for the specified queue. Replace the *queue* argument with a queue number. The range is from 0 to 7.
pdma *queue* **tx**	Displays transmit PDMA information only for the specified queue. Replace the *queue* argument with a queue number. The range is from 0 to7.
pdma *queue* **rx**	Displays receive PDMA information only for the specified queue. Replace the *queue* argument with a queue number. The range is from 0 to 7.
pdma all	Displays transmit and receive PDMA information for all queues.
active	Displays descriptions for active queues only.
detail	Displays detailed descriptions for any queues, regardless of whether they are active.
pio	Displays transmit and receive Polled I/O (PIO) information for the specified queue.

location *node-id*	(Optional) Identifies the location of the node whose CPU controller information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The **show controllers cpuctrl devices** command was first supported under the interface task-ID.
Release 3.6.0	The following keywords were changed: • **fabricq0** changed to **fabric instance 0** • **fabricq1** changed to **fabric instance 1** • **fabricq2** changed to **fabric instance 2** • **fabricq3** changed to **fabric instance 3** • **fia0** changed to **fia instance 0** • **fia1** changed to **fia instance 1** • **jacketcard0** changed to **jacketcard instance 0** • **jacketcard1** changed to **jacketcard instance 1** • **jacketcard2** changed to **jacketcard instance 2** • **plimasic0** changed to **plim asic instance 0** • **plimasic1** changed to **plim asic instance 1** • **plimasic2** changed to **plim asic instance 2** • **plimasic3** changed to **plim asic instance 3** • **plimfpga** changed to **plim fpga**

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display transmit and receive PDMA information for all active queues on the egressq ASIC instance 0:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl devices egressq pdma queue all active location
 0/6/CPU0

------------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 7 (Egressq   )     queue: 0        state: Active
```

```
       OS Interrupt Level =        127   Cpuctrl Int Level =         31
          OS Run Priority =         10       client handle =          6
              ISR context = 0x7810c1c8  Pakman/Bufman Inst = pakman/server
 client callback function = 0x48200298    cleanup function = 0x482002bc
                 Pakmode = 0x00000001          Pollflags = 0x00000000
Total Packets transmitted =     660089  Queue create count =          1
      Packets transmitted =     660089   Bytes transmitted =   17166002

Tx Out of Descriptor errs =          0             Tx IWA =          0
         Tx oversize errs =          0  Tx EgressQ q0 errs =          0

Descriptor list base addr = 0xec348068    Physical address = 0x30348068
               list_size =       1024  Active descriptors =          0
           current_index =        633    tx_enqueue_index =        633

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 0 (Egressq   )     queue: 1        state: Inactive

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 0 (Egressq   )     queue: 2        state: Inactive

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 0 (Egressq   )     queue: 3        state: Inactive

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 0 (Egressq   )     queue: 4        state: Inactive

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 0 (Egressq   )     queue: 5        state: Inactive

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 7 (Egressq   )     queue: 6        state: Active

       OS Interrupt Level =        118   Cpuctrl Int Level =         22
          OS Run Priority =         10       client handle =          2
              ISR context = 0x7810cf24  Pakman/Bufman Inst = bufman/ipc
 client callback function = 0xfc71d604    cleanup function = 0xfc71d6b8
                 Pakmode = 0x00000005          Pollflags = 0x00000000
Total Packets transmitted =          0  Queue create count =          1
      Packets transmitted =          0   Bytes transmitted =          0

Tx Out of Descriptor errs =          0             Tx IWA =          0
         Tx oversize errs =          0  Tx EgressQ q0 errs =          0

Descriptor list base addr = 0xec07a110    Physical address = 0x3007a110
               list_size =        256  Active descriptors =          0
           current_index =          0    tx_enqueue_index =          0

------------------------------------------------------
TX PKT queue:
cpuctrl net Port: 7 (Egressq   )     queue: 7        state: Active

       OS Interrupt Level =        119   Cpuctrl Int Level =         23
          OS Run Priority =         40       client handle =          9
              ISR context = 0x7810d008  Pakman/Bufman Inst = pakman/sever
 client callback function = 0xfc71d604    cleanup function = 0xfc71d6b8
                 Pakmode = 0x00000001          Pollflags = 0x00000000
Total Packets transmitted =          0  Queue create count =          1
```

```
      Packets transmitted =          0   Bytes transmitted =          0

Tx Out of Descriptor errs =          0              Tx IWA =          0
         Tx oversize errs =          0  Tx EgressQ q0 errs =          0

Descriptor list base addr = 0xed63a068    Physical address = 0x3163a068
                list_size =       1024  Active descriptors =          0
            current_index =          0    tx_enqueue_index =          0

-------------------------------------------------------
RX PKT queue:
cpuctrl net Port: 7 (Egressq   )     queue: 0        state: Active

       OS Interrupt Level =        121   Cpuctrl Int Level =         25
          OS Run Priority =         10       client handle =          8
              ISR context = 0x7810d0ec  Pakman/Bufman Inst = bufman/misc
 client callback function = 0xfc71d550    cleanup function = 0xfc71d6b8
                  Pakmode = 0x00000001           Pollflags = 0x00000000
 Requested Rx Buffer Size =       1024  Packet switchcount =         20
    Actual Rx Buffer Size =       1648                Pool =          4
                      MTU =      12188     MTU Descriptors =          8
   Total Packets received =      71080  Queue create count =          1
         Packets received =      71080      Bytes received =  858219920

        Rx No Buffer errs =          0  NoBufferLimit errs =          0
 Rx No Packet Header errs =          0    Packet Form errs =          0
           Rx Packet errs =          0
       Rx Intr Stall errs =          0   Rx Intr Drop errs =          0

Descriptor list base addr = 0xec05c940    Physical address = 0x3005c940
                list_size =        128  Active descriptors =          0
            current_index =         64    tx_enqueue_index =         64

--More--
```

This table describes the significant fields shown in the display.

Table 4: show controllers cpuctrl devices Field Descriptions

Field	Description
PKT queue	Displays whether the packet queue is TX[5] or RX[6].
cpuctrl net Port	Identifies the CPU controller port.
queue	Identifies the queue whose CPU controller device information is displayed.
client handle	Internal Cisco client identifier.
queue state	Current state of the queue. The queue can be *Active* or *Inactive*.

[5] transmit

6 receive

Related Commands

Command	Description
show controllers cpuctrl summary, on page 57	Displays summarized information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node.

show controllers cpuctrl error

To display the squid error information about the CPU controller, use the **show controllers cpuctrl error** command in EXEC mode.

show controllers cpuctrl error [**location** *node-id*] [**detail**]

Syntax Description

location *node-id*	(Optional) Identifies the location of the node whose internal CPU controller information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.
detail	(Optional) Displays detailed squid error information about the CPU controller.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display squid error information about the CPU controller:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl error detail

Errors for node : 0/4/CPU1

    INTERNAL ERRORS:
    ===============
                 Error Interrupts =       2000

================================================================================
RP/0/RP0/CPU0:router#show controllers cpuctrl error detail
Tue Jul 21 04:15:02.632 DST

Errors for node : 0/4/CPU1

    INTERNAL ERRORS:
    ===============
                 Error Interrupts =       2000
        Spurious Error Interrupts =          0
                SN overflow count =          0
                PM overflow count =          0
               PCIX overflow count =          0
                ISN overflow count =          0
```

```
                Port overflow count =          0
                 Log overflow count =          0

==============================================================================
```

show controllers cpuctrl internal

To display internal information about the CPU controller, use the **show controllers cpuctrl internal** command in EXEC mode.

show controllers cpuctrl internal [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Identifies the location of the node whose internal CPU controller information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The **show controllers cpuctrl internal** command was first supported under the interface task-ID.
Release 3.6.0	The location *node-id* keyword and argument were changed from required to optional.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display internal information about the CPU controller:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl internal

Cpuctrl Internal Info for node 0/0/CPU0:
        Error Interrupts = 0    Spurious Error Interrupts = 0
        PCI Error Overflows = 0         PCI PM Error Overflows = 0
        PCIX Error Overflows = 0        Internal Access PCI Overflows = 0
        Port Error Overflows = 0        Error Log Overflows = 0
        cpuctrl Config Reg = 0x8357ffff  cpuctrl Physical Offset = 0x80000000
        cpuctrl Window Size = 0x40000000 cpuctrl Port Window Size = 0x04000000
        cpuctrl SHMem Size = 0x00800000  cpuctrl SHMem Used = 0x00223ee8
        cpuctrl version info: Squid FPGA v2.07 Fri Jan 23 16:21:01 2004 ykoren


Cpuctrl Internal Info for node 0/3/CPU0:
        Error Interrupts = 0    Spurious Error Interrupts = 0
        PCI Error Overflows = 0         PCI PM Error Overflows = 0
        PCIX Error Overflows = 0        Internal Access PCI Overflows = 0
        Port Error Overflows = 0        Error Log Overflows = 0
```

```
        cpuctrl Config Reg = 0x8357ffff  cpuctrl Physical Offset = 0x80000000
        cpuctrl Window Size = 0x40000000 cpuctrl Port Window Size = 0x04000000
        cpuctrl SHMem Size = 0x00800000  cpuctrl SHMem Used = 0x00223ee8
        cpuctrl version info: Squid FPGA v2.07 Fri Jan 23 16:21:01 2004 ykoren


Cpuctrl Internal Info for node 0/RP0/CPU0:
        Error Interrupts = 0    Spurious Error Interrupts = 0
        PCI Error Overflows = 0         PCI PM Error Overflows = 0
        PCIX Error Overflows = 0        Internal Access PCI Overflows = 0
        Port Error Overflows = 0        Error Log Overflows = 0
        cpuctrl Config Reg = 0x803f007f  cpuctrl Physical Offset = 0x80000000
        cpuctrl Window Size = 0x40000000 cpuctrl Port Window Size = 0x04000000
        cpuctrl SHMem Size = 0x00800000  cpuctrl SHMem Used = 0x00223ee8
        cpuctrl version info: Squid FPGA v2.07 Fri Feb 6 17:49:22 2004 ykoren

Cpuctrl Internal Info for node 0/RP1/CPU0:
        Error Interrupts = 0    Spurious Error Interrupts = 0
        PCI Error Overflows = 0         PCI PM Error Overflows = 0
        PCIX Error Overflows = 0        Internal Access PCI Overflows = 0
        Port Error Overflows = 0        Error Log Overflows = 0
        cpuctrl Config Reg = 0x003f007f  cpuctrl Physical Offset = 0x80000000
        cpuctrl Window Size = 0x40000000 cpuctrl Port Window Size = 0x04000000
        cpuctrl SHMem Size = 0x00800000  cpuctrl SHMem Used = 0x00223ee8
        cpuctrl version info: Squid FPGA v2.05 Wed Sep 3 17:37:47 2003 ykoren
```

This table describes the significant fields shown in the display.

Table 5: show controllers cpuctrl internal Field Descriptions

Field	Description
Error Interrupts	Total of error interrupts that have occurred on this node.
Spurious Error Interrupts	Current number interrupts that have occurred on this node due to spurious errors.
PCI Error Overflows	Number of times the PCI1 error buffer overflowed on the node.
PCI PM Error Overflows	Number of times PCI PM2 error buffer overflowed on this node.
PCIX Error Overflows	Number of times the PCI-X error buffer overflowed on this node.
Internal Access PCI Overflows	Number of times the Internal Access PCI buffer overflowed on this node.
Port Error Overflows	Number of times the port error buffer overflowed on this node.
Error Log Overflows	Number of times the error log buffer overflowed on this node.
cpuctrl Config Reg	CPU controller configuration register, expressed in hexadecimal format.
cpuctrl Physical Offset	CPU controller physical offset, expressed in hexadecimal format.
cpuctrl Window Size	CPU controller window size, expressed in hexadecimal format.
cpuctrl Port Window Size	CPU controller port window size, expressed in hexadecimal format.
cpuctrl SHMem Size	CPU controller shared memory size, expressed in hexadecimal format.

Field	Description
cpuctrl SHMem Used	CPU controller shared memory that has been used already, expressed in hexadecimal format.
cpuctrl version info	Provides version information for the CPU controller. The information displayed is: • Squid version • Date of the last version installation or upgrade

[7] [8]

Related Commands

Command	Description
show controllers cpuctrl summary, on page 57	Displays summarized information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node.

[7] 1. Peripheral Component Interconnect
[8] 2. port manager

show controllers cpuctrl ports

To display port information for the specified CPU controller ASIC, use the **show controllers cpuctrl ports** command in EXEC mode.

show controllers cpuctrl ports *asic_id* {**pdma queue** {*queue-id* | **all**} **direction** {**all** | **rx** | **tx**} {**active** | **detail**} | **pio**} [**location** *node-id*]

Syntax Description

asic_id	Identifies the CPU controller ASIC whose port information you want to display. Replace the *asic_id* argument with one of the following keywords: • **cpuctrl**—Displays port information for the CPU controller ASIC instance 0. • **egressq**—Displays port information for instance 0 of the egressq ASIC. • **epse**—Displays port information for the egress packet switching engine (EPSE) ASIC. • **fabricq instance 0**—Displays port information for instance 0 of the fabricq ASIC. • **fabricq instance 1**—Displays port information for instance 1 of the fabricq ASIC. • **fabricq instance 2**—Displays port information for instance 2 of the fabricq ASIC. • **fabricq instance 3**—Displays port information for instance 3 of the fabricq ASIC. • **fia instance 0**—Displays port information for instance 0 of the fabric Interface ASIC (FIA). • **fia instance 1**—Displays port information for instance 1 of the FIA. • **ingressq**—Displays port information for the ingressq ASIC. • **ipse**—Displays port information for the ingress packet switching engine (PSE) ASIC. • **jacketcard instance 0**—Displays port information for instance 0 of the jacketcard ASIC. • **jacketcard instance 1**—Displays port information for instance 1 of the jacketcard ASIC. • **jacketcard instance 2**—Displays port information for instance 2 of the jacketcard ASIC. • **pla768**—Displays port information for the OC768 plim ASIC. • **plaspa instance 0**—Displays port information for instance 0 of the SPA plim ASIC. • **plaspa instance 1**—Displays port information for instance 1 of the SPA plim ASIC. • **plim asic instance 0**—Displays port information for instance 0 of the plim ASIC. • **plim asic instance 1**—Displays port information for instance 1 of the plim ASIC. • **plim asic instance 2**—Displays port information for instance 2 of the plim ASIC. • **plim asic instance 3**—Displays port information for instance 3 of the plim ASIC.
pdma queue *queue-id*	Displays transmit and receive Packet Direct-Memory-Access (PDMA) information for the specified queue.
pdma queue all	Displays transmit and receive PDMA information for all queues. The information displayed pertains to the ASIC indicated in the **show controllers cpuctrl ports** command.
direction all	Displays transmit and receive Packet Direct-Memory-Access (PDMA) information for the specified queue. The information displayed pertains to the ASIC you specified for the *asic_id* argument.

direction rx	Displays receive PDMA information only for the specified queue. The information displayed pertains to the ASIC you specified for the *asic_id* argument.
direction tx	Displays transmit PDMA information only for the specified queue. The information displayed pertains to the ASIC you specified for the *asic_id* argument.
active	Displays descriptions for active queues only.
detail	Displays descriptions for any queues, regardless of whether they are active.
pio	Displays transmit and receive Polled I/O (PIO) information for the specified queue.
location *node-id*	(Optional) Identifies the location of the node whose CPU controller port information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The **show controllers cpuctrl ports** command was first supported under the interface task-ID. The **queue** and **direction** keywords were added to the **show controllers cpuctrl ports** command.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

This example shows how to display port information for the transmit and receive PIO queues on the EPSE ASIC:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl ports epse pio

client name: PSE                device instance: 1
cpuctrl net port: 6             pci base: 0x98000000
map reg: 0x6076a12c             OS interrupt level: 102
Cpuctrl interrupt level: 6      OS Run priority: 6
config reg: 0x00000000          channels reg: 0x00000000
int_cause_asic_mask: 0x00000010 int_cause_error_mask: 0x00000020
int_cause_link_error_mask: 0x00000040
crc_errors: 0   sync_errors: 0  reframe_events: 0


client name: PSE                device instance: 1
cpuctrl net port: 6             pci base: 0x98000000
```

```
map reg: 0x6076a12c             OS interrupt level: 102
Cpuctrl interrupt level: 6      OS Run prority: 6
config reg: 0x00000000          channels reg: 0x00000000
int_cause_asic_mask: 0x00000010 int_cause_error_mask: 0x00000020
int_cause_link_error_mask: 0x00000040
crc_errors: 0   sync_errors: 0  reframe_events: 0


device PSE instance 1 is not detected on node 201/
```

This table describes the significant fields shown in the display.

Table 6: show controllers cpuctrl ports Field Descriptions

Field	Description
client name	Identifies the client whose port CPU controller information is displayed.
device instance	The client device instance for which the port CPU controller information is displayed.
cpuctrl net port	Identifies the CPU controller net port.
pci base	PCI[9] base.
map reg	Client map register.
OS interrupt level	Level of interrupt configured for the port. Interrupts are triggered by arrival of a packet that causes the CPU to postpone other tasks and handle the packet.
Cpuctrl interrupt level	Level of CPU controller interrupt configured for the port.
OS Run priority	Software priority.
config reg	Configuration register, expressed in hexadecimal format.
channels reg	Channel register, expressed in hexadecimal format.
int_cause_asic_mask	Internal ASIC masking information.
int_cause_error_mask	Internal error masking information.
int_cause_link_error_mask	Internal link error masking information.
crc_errors	Number of CRC[10] errors that have occurred on this port.
sync_errors	Number of synchronization errors that have occurred on this port.
reframe_events	Number of reframe events that have occurred on this port.

[9] Peripheral Component Interconnect

[10] cyclic redundancy check

Related Commands

Command	Description
show controllers cpuctrl summary, on page 57	Displays summarized information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node.

show controllers cpuctrl ports cpuctrl pio

To display polled I/O (PIO) information for the specified CPU controller ASIC, use the **show controllers cpuctrl ports cpuctrl pio** command in EXEC mode.

show controllers cpuctrl ports *asic_id* **cpuctrl pio** [**location** *node-id*]

Syntax Description

asic_id	Identifies the CPU controller ASIC whose port information you want to display. Replace the *asic_id* argument with one of the following keywords: • **cpuctrl** —Displays port information for the CPU controller ASIC instance 0. • **egressq** —Displays port information for instance 0 of the egressq ASIC. • **epse** —Displays port information for the egress packet switching engine (EPSE) ASIC. • **fabricq instance 0** —Displays port information for instance 0 of the fabricq ASIC. • **fabricq instance 1** —Displays port information for instance 1 of the fabricq ASIC. • **fabricq instance 2** —Displays port information for instance 2 of the fabricq ASIC. • **fabricq instance 3** —Displays port information for instance 3 of the fabricq ASIC. • **fia instance 0** —Displays port information for instance 0 of the fabric Interface ASIC (FIA). • **fia instance 1** —Displays port information for instance 1 of the FIA. • **ingressq** —Displays port information for the ingressq ASIC. • **ipse** —Displays port information for the ingress packet switching engine (PSE) ASIC. • **jacketcard instance 0** —Displays port information for instance 0 of the jacketcard ASIC. • **jacketcard instance 1** —Displays port information for instance 1 of the jacketcard ASIC. • **jacketcard instance 2** —Displays port information for instance 2 of the jacketcard ASIC. • **pla768** —Displays port information for the OC768 plim ASIC. • **dma**—Displays port PDMA information. • **io**—Displays port Polled I/O (PIO) information. • **plaspa instance 0** —Displays port information for instance 0 of the SPA plim ASIC. • **plaspa instance 1** —Displays port information for instance 1 of the SPA plim ASIC. • **plim asic instance 0** —Displays port information for instance 0 of the plim ASIC. • **plim asic instance 1** —Displays port information for instance 1 of the plim ASIC. • **plim asic instance 2** —Displays port information for instance 2 of the plim ASIC. • **plim asic instance 3** —Displays port information for instance 3 of the plim ASIC.
location *node-id*	(Optional) Identifies the location of the node whose CPU controller port information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Release	Modification
Release 3.5.0	The **show controllers cpuctrl ports** command was first supported under the interface task-ID. The **queue** and **direction** keywords were added to the **show controllers cpuctrl ports** command.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display port information for the transmit and receive PIO queues on the EPSE ASIC:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl ports cpuctrl pio location 0/1/CPU0

client name: Cpuctrl            device instance: 0
cpuctrl net port: 0             pci base: 0x80000000
map reg: 0x00000000             OS interrupt level: 96
Cpuctrl interrupt level: 0      OS Run prority: 0
config reg: 0x00000000          channels reg: 0x00000000
int_cause_asic_mask: 0x00000000 int_cause_error_mask: 0x00000000

int_cause_link_error_mask: 0x00000000
crc_errors: 0   sync_errors: 0  reframe_events: 0
```

Related Commands

Command	Description
show controllers cpuctrl ports, on page 51	Displays port information for the specified CPU controller ASIC.
show controllers cpuctrl summary, on page 57	Displays summarized information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node.

show controllers cpuctrl summary

To display summarized information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node, use the **show controllers cpuctrl summary** command in EXEC mode.

show controllers cpuctrl summary [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Identifies the location of the node whose CPU controller ASIC information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	The **show controllers cpuctrl summary** command was first supported under the interface task-ID.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display summarized information about all the ASICs accessed through the CPU controller ASICs on a specific node:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl summary location 0/0/CPU0

Cpuctrl discovered 11 device on node 0/0/CPU0:
Cpuctrl HW version string for this node is:
Squid FPGA v2.07 Fri Jan 23 16:21:01 2004 ykoren

------------------------------------------------------------
device_name:         Fabricq    device instance:    0
Cpuctrl net port:    3          pci_base:            0x8c000000

------------------------------------------------------------
device_name:         Fabricq    device instance:    1
Cpuctrl net port:    4          pci_base:            0x90000000

------------------------------------------------------------
device_name:         Ingressq   device instance:    0
Cpuctrl net port:    8          pci_base:            0xa0000000

------------------------------------------------------------
```

```
device_name:         Egressq    device instance:    0
Cpuctrl net port:    7          pci_base:            0x9c000000

-------------------------------------------------------------
device_name:         FIA        device instance:    0
Cpuctrl net port:    1          pci_base:            0x84000000

-------------------------------------------------------------
device_name:         FIA        device instance:    1
Cpuctrl net port:    2          pci_base:            0x88000000

-------------------------------------------------------------
device_name:         Cpuctrl    device instance:    0
Cpuctrl net port:    0          pci_base:            0x80000000

-------------------------------------------------------------
device_name:         PSE        device instance:    1
Cpuctrl net port:    6          pci_base:            0x98000000

 --More--
```

```
RP/0/RP0/CPU0:router# show controllers cpuctrl summary location 0/5/CPU0

Cpuctrl discovered 2 device on node 0/5/CPU0

-------------------------------------------------
 Device Name: NPU     Device Instance: 16
Cpuctrl Port: 16     PCI Base Address: 0x1000000000
            :         PCI Window Size: 0x00000000

-------------------------------------------------
 Device Name: NPU     Device Instance: 0
Cpuctrl Port: 216    PCI Base Address: 0xd800000000
            :         PCI Window Size: 0x00000000
```

This table describes the significant fields shown in the display.

Table 7: show controllers cpuctrl summary Field Descriptions

Field	Description
device_name	Identifies the device whose CPU controller information is displayed.
device instance	Identifies the CPU device whose information is displayed.
Cpuctrl net port	Identifies the CPU controller network port.
pci_base	PCI[11] base, in hexadecimal format.

[11] Peripheral Component Interconnect

Related Commands

Command	Description
show controllers cpuctrl clients, on page 35	Displays information about all CPU controller clients on the router, or for specific CPU controller clients.
show controllers cpuctrl devices, on page 41	Displays information about the CPU controller devices on the router.

Command	Description
show controllers cpuctrl ports, on page 51	Displays port information for the specified CPU controller ASIC.

show controllers cpuctrl trace

To display the trace information about all the ASICs accessed through the CPU controller ASICs on the router or on a specific node, use the **show controllers cpuctrl trace** command in EXEC mode.

show controllers cpuctrl trace [{**all** | **client** | **queue** | **server**}]

Syntax Description

all	Displays the trace information of all the devices.
client	Displays all the trace information of all the cdma or pdma clients.
queue	Displays all the trace information of all the ASIC queues.
server	Displays all the server trace information.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display statistics information of all the CDMA CPU controller ASIC queues:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl trace queue all cdma stats

/dev/shmem/ltrace/squid/queue/dma/chan0/queue4: 278 searches, 462 elements, 1.7h
/dev/shmem/ltrace/squid/queue/dma/chan0/queue6: 51 searches, 85 elements, 1.7 eh
/dev/shmem/ltrace/squid/queue/dma/chan0/queue4 unique: 3.584 Mbytes/sec for 64 s
/dev/shmem/ltrace/squid/queue/dma/chan0/queue6 unique: inf Mbytes/sec for 64 ens
10 unique entries (128 possible, 0 filtered)
Jul 14 19:29:06.548 squid/queue/dma/chan0/queue6 0/RP0/CPU0 1# t1  INI:DMA:000:0
Jul 14 19:29:06.936 squid/queue/dma/chan0/queue4 0/RP0/CPU0 1# t1  INI:DMA:000:0
Jul 14 19:29:11.192 squid/queue/dma/chan0/queue4 0/RP0/CPU0 1# t5  BOT:HWC:011:0
Jul 14 20:50:56.795 squid/queue/dma/chan0/queue6 0/RP0/CPU0 17# t12 TOP:DMA:0101
Jul 14 20:50:56.803 squid/queue/dma/chan0/queue6 0/RP0/CPU0 17# t5  BOT:HWC:0120
```

```
Jul 14 20:50:56.803 squid/queue/dma/chan0/queue6 0/RP0/CPU0 14# t5  BOT:HWC:0101
Jul 14 20:50:56.803 squid/queue/dma/chan0/queue6 0/RP0/CPU0 2# t5  BOT:HWC:011:1
Jul 14 20:54:34.970 squid/queue/dma/chan0/queue4 0/RP0/CPU0 92# t12 TOP:DMA:0101
Jul 14 20:54:34.970 squid/queue/dma/chan0/queue4 0/RP0/CPU0 92# t5  BOT:HWC:010b
Jul 14 20:54:34.970 squid/queue/dma/chan0/queue4 0/RP0/CPU0 92# t5  BOT:HWC:0120
/dev/shmem/ltrace/squid/queue/dma/chan0/queue4 wrapping: inf Mbytes/sec for 128s
/dev/shmem/ltrace/squid/queue/dma/chan0/queue6 wrapping: inf Mbytes/sec for 128s
176 wrapping entries (256 possible, 0 filtered, 329 total)
Jul 14 19:29:06.548 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  INI:DMA:000: Cr0
Jul 14 19:29:08.586 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM0
Jul 14 19:29:08.586 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:011: DM0
Jul 14 19:29:13.214 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:13.217 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM0
Jul 14 19:29:13.217 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:13.219 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:13.224 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM1
Jul 14 19:29:13.224 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:13.233 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:13.237 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM2
Jul 14 19:29:13.237 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:13.241 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:13.243 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM3
Jul 14 19:29:13.243 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:13.249 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:13.253 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM4
Jul 14 19:29:13.253 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:13.265 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:13.269 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM5
Jul 14 19:29:13.269 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.212 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM1
Jul 14 19:29:19.212 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM1
Jul 14 19:29:19.212 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM1
Jul 14 19:29:19.218 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM6
Jul 14 19:29:19.218 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.218 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.218 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.218 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:19.226 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM9
Jul 14 19:29:19.226 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.235 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:19.241 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DMa
Jul 14 19:29:19.241 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.249 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:19.256 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DMb
Jul 14 19:29:19.256 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:29:19.262 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:29:19.269 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DMc
Jul 14 19:29:19.269 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:04.148 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM2
Jul 14 19:30:04.148 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:04.149 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:04.151 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM3
Jul 14 19:30:04.151 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:05.160 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:05.161 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM4
Jul 14 19:30:05.161 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:05.163 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:05.168 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM5
Jul 14 19:30:05.168 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:06.172 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:06.175 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM6
Jul 14 19:30:06.175 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:06.175 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:06.182 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM7
```

```
Jul 14 19:30:06.182 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:07.189 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:07.189 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM8
Jul 14 19:30:07.189 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:07.189 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:07.190 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM9
Jul 14 19:30:07.190 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:08.192 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:08.193 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMa
Jul 14 19:30:08.193 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:08.194 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:08.194 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMb
Jul 14 19:30:08.194 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:09.198 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:09.199 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMc
Jul 14 19:30:09.199 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:09.199 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:09.200 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMd
Jul 14 19:30:09.200 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:10.207 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:10.211 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMe
Jul 14 19:30:10.211 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:10.215 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:10.221 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMf
Jul 14 19:30:10.221 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:11.231 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:11.234 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM0
Jul 14 19:30:11.234 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:11.240 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:11.247 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM1
Jul 14 19:30:11.247 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:12.253 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:12.254 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM2
Jul 14 19:30:12.254 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:12.254 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:12.254 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM3
Jul 14 19:30:12.254 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:13.259 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:13.261 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM4
Jul 14 19:30:13.261 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:13.263 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:13.264 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM5
Jul 14 19:30:13.264 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:14.268 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:14.272 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM6
Jul 14 19:30:14.272 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:14.272 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:14.273 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM7
Jul 14 19:30:14.273 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:15.275 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:15.276 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM8
Jul 14 19:30:15.276 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:15.277 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:15.278 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM9
Jul 14 19:30:15.278 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:16.285 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:16.293 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMa
Jul 14 19:30:16.293 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:16.301 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:16.308 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMb
Jul 14 19:30:16.308 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:17.320 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:17.324 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMc
Jul 14 19:30:17.324 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
```

```
Jul 14 19:30:17.328 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:17.332 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMd
Jul 14 19:30:17.332 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:18.338 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:18.339 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMe
Jul 14 19:30:18.339 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:18.340 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:18.340 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMf
Jul 14 19:30:18.340 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:19.342 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:19.346 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM0
Jul 14 19:30:19.346 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:19.350 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:19.354 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM1
Jul 14 19:30:19.354 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:30:20.360 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t1  TOP:DMA:010: DM0
Jul 14 19:30:20.364 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM2
Jul 14 19:30:20.364 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:32:06.165 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 19:32:06.166 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM3
Jul 14 19:32:06.166 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:32:06.614 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 19:32:06.622 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM4
Jul 14 19:32:06.622 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:32:26.670 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 19:32:26.675 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM5
Jul 14 19:32:26.675 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:32:26.878 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 19:32:26.887 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM6
Jul 14 19:32:26.887 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:32:26.927 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 19:32:26.935 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM7
Jul 14 19:32:26.935 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 19:32:27.144 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 19:32:27.150 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM8
Jul 14 19:32:27.150 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:50:56.806 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:50:56.806 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:50:56.816 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DMd
Jul 14 20:50:56.816 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:50:56.816 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:50:56.817 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:50:56.825 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:50:56.825 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:50:56.825 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:50:56.825 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:010: DM1
Jul 14 20:50:56.825 squid/queue/dma/chan0/queue6 0/RP0/CPU0 t5  BOT:HWC:011: DM1
Jul 14 20:51:30.093 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:51:30.117 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DM9
Jul 14 20:51:30.117 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:54:00.889 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:54:00.890 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMa
Jul 14 20:54:00.890 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
Jul 14 20:54:34.993 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t12 TOP:DMA:010: DM1
Jul 14 20:54:34.993 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:010: DMb
Jul 14 20:54:34.993 squid/queue/dma/chan0/queue4 0/RP0/CPU0 t5  BOT:HWC:012: Us0
```

The following example shows how to display trace information for internal unique entries of the CPU controller:

show controllers cpuctrl vcdma

To display the information about all the show commands in the VCDMA library, use the **show controllers cpuctrl vcdma** command in EXEC mode.

show controllers cpuctrl vcdma [{**cdma** | **trace**}]

Syntax Description

cdma	Displays the information related to a specific or all cdma channels.
trace	Displays the trace information of a specified controller ASIC.
all	Displays the trace information of all the controller ASICs.
client	Displays the trace information of the cdma clients.
queue	Displays the trace information of all the ASIC queues.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display the cdma channel information of the active queue descriptors accessed by the CPU controller ASICs:

```
RP/0/RP0/CPU0:router# show controllers cpuctrl vcdma cdma channel all active

No queue present for channel 0, queue 0 on 0/1/CPU0
No queue present for channel 0, queue 1 on 0/1/CPU0
No queue present for channel 0, queue 2 on 0/1/CPU0
No queue present for channel 0, queue 3 on 0/1/CPU0
No queue present for channel 0, queue 4 on 0/1/CPU0
No queue present for channel 0, queue 5 on 0/1/CPU0
No queue present for channel 0, queue 6 on 0/1/CPU0

------------------------------------------------------
VCDMA queue:
```

```
Channel: 0     queue: 7       vqueue state: 0x1

            client handle =          4          client pid =      81997
      client event handle = 0x5001a998     client callback = 0x4c9d13e8
     descriptor ring size =       1024
       Queue create count =          1  Queue delete count =          0
      Total VCDMA Batches =     200227       VCDMA Batches =     200227
   Total DMA transactions =     211808    DMA transactions =     211808
    Total bytes =           3645826297     bytes =           3645826297
   Total Out of desc errs =          0    Out of desc errs =          0
VCDMA Batches active on this queue: 0

No queue present for channel 1, queue 0 on 0/1/CPU0
No queue present for channel 1, queue 1 on 0/1/CPU0
No queue present for channel 1, queue 2 on 0/1/CPU0
No queue present for channel 1, queue 3 on 0/1/CPU0
No queue present for channel 1, queue 4 on 0/1/CPU0
No queue present for channel 1, queue 5 on 0/1/CPU0
No queue present for channel 1, queue 6 on 0/1/CPU0
No queue present for channel 1, queue 7 on 0/1/CPU0
No queue present for channel 0, queue 0 on 0/6/CPU0
No queue present for channel 0, queue 1 on 0/6/CPU0
No queue present for channel 0, queue 2 on 0/6/CPU0
No queue present for channel 0, queue 3 on 0/6/CPU0
No queue present for channel 0, queue 4 on 0/6/CPU0
No queue present for channel 0, queue 5 on 0/6/CPU0
No queue present for channel 0, queue 6 on 0/6/CPU0

-------------------------------------------------------
VCDMA queue:
Channel: 0     queue: 7       vqueue state: 0x1

            client handle =          4          client pid =      81980
      client event handle = 0x5001a998     client callback = 0x4c9ba3e8
     descriptor ring size =       1024
       Queue create count =          1  Queue delete count =          0
      Total VCDMA Batches =     200238       VCDMA Batches =     200238
   Total DMA transactions =     211819    DMA transactions =     211819
    Total bytes =           3646313721     bytes =           3646313721
   Total Out of desc errs =          0    Out of desc errs =          0
VCDMA Batches active on this queue: 0

No queue present for channel 1, queue 0 on 0/6/CPU0
No queue present for channel 1, queue 1 on 0/6/CPU0
No queue present for channel 1, queue 2 on 0/6/CPU0
No queue present for channel 1, queue 3 on 0/6/CPU0
No queue present for channel 1, queue 4 on 0/6/CPU0
No queue present for channel 1, queue 5 on 0/6/CPU0
No queue present for channel 1, queue 6 on 0/6/CPU0
No queue present for channel 1, queue 7 on 0/6/CPU0
```

show controllers egressq eio links

To display Elastic I/O (EIO) information for the egress queueing ASIC, use the **show controllers egressq eio links** command in EXEC mode.

show controllers egressq eio links {*link-id* | **all**} **location** *node-id*

Syntax Description

link-id	Identifies the EIO link whose egress queueing ASIC information you want to display. Replace the *link-id* argument with a link identifier. Range is from 0 to 4294967295.
all	Displays egress queueing ASIC information for all links on the specified node.
location *node-id*	Identifies the location of the egress queue manager whose EIO link information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display information for all EIO links on a node's egress queueing ASIC:

```
RP/0/RP0/CPU0:router# show controllers egressq eio links all location 0/2/CPU0

             Node: 0/2/CPU0:
----------------------------------------

EIO links:
------------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
------------------------------------------------------------------------
EGRESSQ_0   PSE_1       RX   11      1        1      0      EIO_LINK_TRAINED
EGRESSQ_0   PSE_1       TX   64      0        0      0      EIO_LINK_TRAINED
EGRESSQ_0   PLIM-ASIC_0 TX   60      0        0      0      EIO_LINK_TRAINED
EGRESSQ_0   PLIM-ASIC_1 TX   61      0        0      0      EIO_ADD_LINK
EGRESSQ_0   PLIM-ASIC_2 TX   62      0        0      0      EIO_ADD_LINK
```

```
EGRESSQ_0    PLIM-ASIC_3 TX    63       0         0       0       EIO_ADD_LINK
```

This table describes the significant fields shown in the display.

Table 8: show controllers egressq eio links Field Descriptions

Field	Description
ASIC Id	Identifies the ASIC that is associated with the link whose information is displayed.
Peer Id	Identifies the ASIC peer.
Type	Indicates whether the AISC is receiving (RX) or transmitting (TX).
Link-Id	Link identifier.
Attempts	Number of attempts made to send or receive information on the specified link.
Accept	Number of consecutive EIO requests for the link made by the PSE driver to the peer that were accepted.
Failed	Number of consecutive EIO requests for the link that failed.
State	Current link state.

Related Commands

Command	Description
show controllers egressq group, on page 68	Displays information about egress queue groups.
show controllers egressq port, on page 74	Displays egress queue information for a port, or for several ports.

show controllers egressq group

To display information about egress queue groups, use the **show controllers egressq group** command in EXEC mode.

show controllers egressq group {*group1* [*group2*] | **all** | **limits** {**max** | **min**}} **location** *node-id*

Syntax Description

group1	First group whose information you want to display. Range is from 1 to 2047.
group2	(Optional) Last group whose information you want to display. Range is from 1 to 2047.
all	Indicates that you want to display information about all egress queue groups on a specific node.
limits	Indicates that you want to display the limits table. Follow the keyword with **max** to display the maximum limits table, or **min** to display the minimum limits table.
max	Display the maximum limits table.
min	Display the minimum limits table.
location *node-id*	Identifies the location of the egress queue whose group information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

If you do not specify a group number for the *group2* argument, information is displayed only for the egress queue you specified for the *group1* argument. If you specify *group1* and *group2* , information is displayed for all groups within the range from *group1* through *group2* .

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display information for a specific range of egress queue groups on the CPU node in slot 2:

```
RP/0/RP0/CPU0:router# show controllers egressq group 1 3 location 0/2/CPU0
```

```
---------------------------------
          Group 1
---------------------------------
 Port                : 0
 Priority            : Low
 Max LB Tokens       : 7812
 Max LB Limit Index  : 38
 Min LB Tokens       : 0
 Min LB Limit Index  : 0
 Quantum             : 27
 Default Queue       : 1
 High Priority Queue : N/A
 Low Priority Queue  : 1
---------------------------------
---------------------------------
          Group 2
---------------------------------
 Port                : 1
 Priority            : Low
 Max LB Tokens       : 7812
 Max LB Limit Index  : 38
 Min LB Tokens       : 0
 Min LB Limit Index  : 0
 Quantum             : 27
 Default Queue       : 2
 High Priority Queue : N/A
 Low Priority Queue  : 2
---------------------------------
---------------------------------
          Group 3
---------------------------------
 Port                : 256
 Priority            : Low
 Max LB Tokens       : 7812
 Max LB Limit Index  : 38
 Min LB Tokens       : 0
 Min LB Limit Index  : 0
 Quantum             : 27
 Default Queue       : 3
 High Priority Queue : N/A
 Low Priority Queue  : 3
---------------------------------
```

This table describes the significant fields shown in the display.

Table 9: show controllers egressq group Field Descriptions

Field	Description
Port	Port identifier.
Priority	Group priority.
Max LB Tokens	Maximum number of port LB tokens.
Max LB Limit Index	Maximum LB limit.
Min LB Tokens	Minimum number of port LB tokens.
Min LB Limit Index	Minimum LB limit.

Field	Description
Quantum	Quantum value for this group.
Default Queue	Default queue for this group.
High Priority Queue	High priority queue identifier.
Low Priority Queue	Low priority queue identifier.

Related Commands

Command	Description
show controllers egressq eio links, on page 66	Displays Elastic I/O (EIO) information for the egress queueing ASIC.
show controllers egressq port, on page 74	Displays egress queue information for a port, or for several ports.

show controllers egressq interface

To display information about interfaces associated with an egress queue, use the **show controllers egressq interface** command in EXEC mode.

show controllers egressq interface [{*type interface-path-id* | **all**}] **location** *node-id*

Syntax Description

type interface-path-id	Identifies a physical interface or a virtual interface. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
all	Indicates that you want to display egress queue information for all interfaces in the specified **location**.
location *node-id*	Identifies the location of the interface whose egress queue information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display egress queue information for all configured interfaces on the router:

```
RP/0/RP0/CPU0:router# show controllers egressq interface all

---------------------------------
          Interface POS0/0/0/15
---------------------------------
          Port 776
---------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 24
 High Priority Group : N/A
 Low Priority Group  : 24
---------------------------------
```

```
---------------------------------
          Interface POS0/0/0/14
---------------------------------
          Port 780
---------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 23
 High Priority Group : N/A
 Low Priority Group  : 23
---------------------------------
---------------------------------
          Interface POS0/0/0/13
---------------------------------
          Port 778
---------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 22
 High Priority Group : N/A
 Low Priority Group  : 22
---------------------------------
---------------------------------
          Interface POS0/0/0/12
---------------------------------
          Port 782
---------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 21
 High Priority Group : N/A
 Low Priority Group  : 21
---------------------------------
---------------------------------
          Interface POS0/0/0/11
---------------------------------
          Port 520
---------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 20
 High Priority Group : N/A
 Low Priority Group  : 20
---------------------------------
---------------------------------
          Interface POS0/0/0/10
---------------------------------
          Port 524
---------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 19
 High Priority Group : N/A
 Low Priority Group  : 19
---------------------------------
---------------------------------
          Interface POS0/0/0/9
---------------------------------
          Port 522
```

```
----------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 18
 High Priority Group : N/A
 Low Priority Group  : 18
----------------------------------
----------------------------------
          Interface POS0/0/0/8
----------------------------------
          Port 526
----------------------------------
 Max LB Tokens       : 18720
 Max LB Limit Index  : 41
 Quantum             : 27
 Default Group       : 17
 High Priority Group : N/A
 Low Priority Group  : 17
----------------------------------
----------------------------------
```

This table describes the significant fields shown in the display.

Table 10: show controllers egressq interface Field Descriptions

Field	Description
Interface	Interface identifier, in the *<type>rack/slot/module/port* format.
Port	Port to which the specified interface belongs.
Max LB Tokens	Maximum number of port LB tokens.
Max LB Limit Index	Maximum LB limit.
Quantum	Average number of bytes in the interface egress queue.
Default Group	Default group for this interface.
High Priority Group	High priority group identifier.
Low Priority Group	Low priority group identifier.

Related Commands

Command	Description
show controllers egressq eio links, on page 66	Displays Elastic I/O (EIO) information for the egress queueing ASIC.
show controllers egressq group, on page 68	Displays information about egress queue groups.
show controllers egressq port, on page 74	Displays egress queue information for a port, or for several ports.

show controllers egressq port

To display egress queue information for a port, or for several ports, use the **show controllers egressq port** command in EXEC mode.

show controllers egressq port {*port1* [*port2*] | **all** | **limits max**} **location** *node-id*

Syntax Description

port1	Identifies the port whose egress queue information you want to display. Replace the *port1* argument with a port identifier. Range is from 0 to 1023.
port2	Identifies the last port whose egress queue information you want to display. Replace the *port2* argument with a port identifier. Range is from 0 to 1023.
all	Indicates that you want to display egress queue information for all ports on the node in the specified location.
limits max	Indicates that you want to display the maximum limits table.
location *node-id*	Identifies the location of the egress queue whose group information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display egress queue information for ports 1, 2, and 3 on the CPU node in slot 2:

```
RP/0/RP0/CPU0:router# show controllers egressq port 1 3 location 0/2/CPU0

---------------------------------
          Port 1
---------------------------------
 Max LB Tokens       : 7812
 Max LB Limit Index  : 38
```

```
 Quantum             : 27
 Default Group       : 2
 High Priority Group : N/A
 Low Priority Group  : 2
---------------------------------


---------------------------------
          Port 2
---------------------------------
Port is not allocated
---------------------------------
          Port 3
---------------------------------
Port is not allocated
```

This table describes the significant fields shown in the display.

Table 11: show controllers egressq port Field Descriptions

Field	Description
Port	Port identifier.
Max LB Tokens	Maximum number of port LB tokens.
Max LB Limit Index	Maximum LB limit.
Quantum	Quantum value for this interface.
Default Group	Default group.
High Priority Group	High priority group identifier.
Low Priority Group	Low priority group identifier.

Related Commands

Command	Description
show controllers egressq eio links, on page 66	Displays Elastic I/O (EIO) information for the egress queueing ASIC.
show controllers egressq group, on page 68	Displays information about egress queue groups.

show controllers egressq queue

To display information about a specific egress queue, or a range of egress queues, use the **show controllers egressq queue** command in EXEC mode.

show controllers egressq queue {**queue1** [**queue2**] | **from-group** {**group-id** | **all**} | **from-interface** {**type instance** | **all**} | **from-port** {**port-id** | **all**} | **limits** {**max** | **min**} | **all**} **location node-id**

Syntax Description

queue1	Identifies the first port whose egress queue information you want to display. Replace the *queue1* argument with a queue identifier. Range is from 1 through 8191.
queue2	(Optional) Identifies the last port whose egress queue information you want to display. Replace the *queue2* argument with a queue identifier. Range is from 1 through 8191.
from-group *group-id*	Displays egress queue information for a specific port group. Replace the *group-id* argument with the number that identifies the port group whose information is to be displayed. Range is from 1 through 2047.
from-group all	Displays egress queue information for all port groups on the specified location.
from-interface *type instance*	Displays egress queue information for a specific interface. Replace the *type instance* argument with a physical interface ID or a virtual interface ID. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
from-interface all	Displays egress queue information for all interfaces on the specified location.
from-port *port-id*	Displays egress queue information for a specific port. Replace the *port-id* argument with a port ID. Range is from 0 to 1023.
from-port all	Displays egress queue information for all ports on the specified location.
limits max	Displays the maximum limits table.
l**imits min**	Displays the minimum limits table.
all	Displays detailed information about all egress queues on the specified location.
location *node-id*	Identifies the location of the node whose egress queue information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Release	Modification
Release 3.5.0	The **context** keyword and *max_elements* argument were removed from the **show controllers egressq queue** command. The following keywords and arguments were added to the **show controllers egressq queue** command: • **from-group** { *group-id* | **all** } • **from-interface** { *type instance* | **all** } • **from-port** { *port-id* | **all**}

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display information about egress queues 1 and 2 on the CPU node in slot 2:

```
RP/0/RP0/CPU0:router# show controllers egressq queue 1 2 location 0/2/CPU0
----------------------------------
          Queue 1
----------------------------------
 Group                 : 1
 Priority              : Low
 Max LB Tokens         : 7812
 Max LB Limit Index    : 38
 Min LB Tokens         : 0
 Min LB Limit Index    : 0
 Quantum               : 27
 Instantaneous length  : 0
 Length high watermark : 0
----------------------------------
----------------------------------
          Queue 2
----------------------------------
 Group                 : 2
 Priority              : Low
 Max LB Tokens         : 7812
 Max LB Limit Index    : 38
 Min LB Tokens         : 0
 Min LB Limit Index    : 0
 Quantum               : 27
 Instantaneous length  : 0
 Length high watermark : 0
```

This table describes the significant fields shown in the display.

Table 12: show controllers egressq queue Field Descriptions

Field	Description
Group	Group identifier.
Priority	Group priority.
Max LB Tokens	Maximum number of port LB tokens.
Max LB Limit Index	Maximum LB limit.
Min LB Tokens	Minimum number of port LB tokens.
Min LB Limit Index	Minimum LB limit.
Quantum	Quantum value for this queue.
Instantaneous length	Egress queue instantaneous length.
Length high watermark	Length high watermark register.

Related Commands

Command	Description
show controllers egressq eio links, on page 66	Displays Elastic I/O (EIO) information for the egress queueing ASIC.
show controllers egressq group, on page 68	Displays information about egress queue groups.
show controllers egressq port, on page 74	Displays egress queue information for a port, or for several ports.

show controllers egressq statistics

To display egress queue manager statistics, use the **show controllers egressq statistics** command in EXEC mode.

show controllers egressq statistics location *node-id*

Syntax Description

location *node-id*	Identifies the location of the egress queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following example shows how to display egress queue manager statistics:

```
RP/0/RP0/CPU0:router# show controllers egressq statistics location 0/2/CPU0

-------------------------------------------------
              Egressq Statistics
-------------------------------------------------
egressq ASIC version: 1
egressq ASIC state: Normal
plimasic link0 output packets: 0
plimasic link0 output bytes: 0
plimasic link1 output packets: 0
plimasic link1 output bytes: 0
plimasic link2 output packets: 0
plimasic link2 output bytes: 0
plimasic link3 output packets: 0
plimasic link3 output bytes: 0
cpuctrl input packets: 0
cpuctrl output bytes: 1433250
pse input packets: 29250
pse dropped packets: 0
cpuctrl dropped packets: 0
```

This table describes the significant fields shown in the display.

Table 13: show controllers egressq statistics Field Descriptions

Field	Description
egressq ASIC version	Version identifier for the egress queue ASIC.
egressq ASIC state	Current state of the egress queue ASIC.
plimasic link0 output packets	Number of output packets on link 0 of the ASIC.
plimasic link0 output bytes	Output bytes on link 0 of the ASIC.
plimasic link1 output packets	Number of output packets on link 1 of the ASIC.
plimasic link1 output bytes	Number of output packets on link 1 of the ASIC.
plimasic link2 output packets	Number of output packets on link 2 of the ASIC
plimasic link2 output bytes	Number of output packets on link 2 of the ASIC.
plimasic link3 output packets	Number of output packets on link 3 of the ASIC.
plimasic link3 output bytes	Number of output packets on link 3 of the ASIC.
cpuctrl input packets	Number of CPU controller input packets received on this ASIC.
cpuctrl output bytes	CPU controller output bytes transmitted on this ASIC.
pse input packets	Number of PSE input packets received on this ASIC.
pse dropped packets	Number of PSE packets that were dropped by this ASIC due to errors.
cpuctrl dropped packets	Number of CPU controller packets that were dropped by this ASIC due to errors.

Related Commands

Command	Description
show controllers egressq eio links, on page 66	Displays Elastic I/O (EIO) information for the egress queueing ASIC.
show controllers egressq group, on page 68	Displays information about egress queue groups.
show controllers egressq port, on page 74	Displays egress queue information for a port, or for several ports.

show controllers egressq trace

To display the internal trace buffer information for Egressq on a specific controller or node, use the **show controllers egressq trace** command in EXEC mode.

show controllers egressq trace [{**all** | **c2c** | **cdma** | **detail** | **errors** | **func** | **info** | **interrupt** | **periodic**}] **location** *node-id*

Syntax Description

all	(Optional) Displays the internal trace (Itrace) information for all of the egressq errors and events.
c2c	(Optional) Displays the internal trace for C2C or EIO link processing information.
cdma	(Optional) Displays the internal trace information for egressq cdma/vcdma processing events.
detail	(Optional) Displays the detailed processing internal trace data for egressq events.
errors	(Optional) Displays the internal trace information for all kinds of egressq processing errors.
func	(Optional) Displays the internal trace data for egressq function entry/exit events.
info	(Optional) Displays the internal trace data for general information with processing events.
interrupt	(Optional) Displays the internal trace data for general information with interrupt events.
periodic	(Optional) Displays the internal trace data for general information with periodic events.
location *node-id*	Identifies the location of the egress queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read
interface	read

Examples

The following example shows how to display the internal trace information of Egressq for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers egressq trace info reverse location 0/2/CPU0

516 wrapping entries (16384 possible, 0 filtered, 516 total)
Oct 16 14:26:47.165 egressq/info 0/2/CPU0 t1  SHARQ-INFO: sharq_rsm_send_dma - Complete
VCDMA requests (succeed)
Oct 16 14:26:47.151 egressq/info 0/2/CPU0 t1  SHARQ-INFO: sharq_rsm_send_dma - Start sending
 VCDMA requests (elems 15)
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Sharq remapping
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: port 526 default group is set to
 16
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: group 16 default queues are set
to LPQ 23 HPQ 24
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue1: 23 (priority 2) & queue2:
 24 (priority2 1) are created under group1 16 and group2 16 respectively
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Sharq ID is:  3
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Set queue params: queue 24,
max_lb_token 0, max_lb_index 33, min_lb_token 39063, min_lb_index: 57, weight 10, quantum
27
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 24 weight is set to 10
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 24 burst size is set to max
 312504, min 312504
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 24 BW is set to max
10000128Kbps, min 10000128Kbps
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 24 is allocated for group
16 / port 526
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue1 23 (priority 2) is created
 for group1 16
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Sharq ID is:  3
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Set queue params: queue 23,
max_lb_token 39063, max_lb_index 43, min_lb_token 0, min_lb_index: 0, weight 10, quantum
27
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 23 weight is set to 10
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 23 burst size is set to max
 312504, min 0
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 23 BW is set to max
10000128Kbps, min 0Kbps
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: queue 23 is allocated for group
16 / port 526
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Set group params: group 16,
max_lb_token 39023, max_lb_index 43, min_lb_token 40, min_lb_index: 34, quantum 27, priority
 2
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: group 16 weight is set to 10
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: group 16 burst size is set to max
 312504, min 320
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: group 16 BW is set to max
10000128Kbps, min 10240Kbps
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: group 16 is allocated for port
526
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Set port params: port 526,
max_lb_token 39063, max_lb_index 43, quantum 27, default_group: 4294967295, first_group
4294967295, hp-group 4294967295
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: port 526 weight is set to 10
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: Port 526 Max burst is set to
312504
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SHARQ-INFO: port 526 MaxBW is set to
10000128Kbps
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SERVER-INFO: Create interfaces - intf type
1, port 526, default_priority 2
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SERVER-INFO: added interface: ifh 0x01280120,
```

```
 if TenGigE0/2/0/7, port 526, type 1, local_if 7, spa 0
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SERVER-INFO: Dispatch create interfaces -
handle 0x1904a, numOfParamEntries 1, tuningBestEffort 1, bulk_req 0x9bffda58, req_params
0x9bffda74
Oct 16 14:26:47.150 egressq/info 0/2/CPU0 t1  SERVER-INFO: egressq_read_msg_buffer -Received
 message length is 80
```

show controllers egressq resources

To display the Egressq resource usage on a specific controller or node, use the **show controllers egressq resources** command inEXEC mode.

show controllers egressq resources location *node-id*

Syntax Description

location *node-id*	Identifies the location of the egress queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display the internal trace information of Egressq for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers egressq resources location 0/1/CPU0

Resource          Total     Used     Free
-----------------------------------------
Ports              1024       29      995
Groups             2048       30     2018
Queues             8192       50     8142
```

show controllers ingressq backpressure

To display the ingressq backpressure details, on a specific controller or node, use the **show controllers ingressq backpressure** command in EXEC mode.

show controllers ingressq backpressure {**all** | **bpmem** | **hiccup** | **maptab**}

Syntax Description

all	Displays backpressure details for all controllers.
bpmem	Displays backpresssure bitmap memory content.
hiccup	Displays hiccup details.
maptab	Displays FGID mapping tables.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display the internal trace information of Egressq for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers ingressq backpressure all
```

show controllers ingressq block

To display the ingressq asic block details, on a specific controller or node, use the **show controllers ingressq block** command in EXEC mode.

show controllers ingressq block {**brm** | **cri** | **dcm** | **dqp** | **dqs** | **eproc** | **fbm** | **fqm** | **help** | **internal** | **isq** | **lns** | **mti** | **pfi** | **pgi** | **pii** | **pmi** | **qdm** | **seg** | **spi** | **sqe** | **ssm** | **tfi**}

Syntax Description

brm	Displays Barrier Manager (BRM) details.
cri	Displays Crab Interface (CRI) statistics.
dcm	Displays Discard Manager (DCM) details.
dqp	Displays Destination Queue (DQP) details.
dqs	Displays Destination Queue Scheduler (DQS) details.
eproc	Displays EPROC block data.
fbm	Displays Free Block Manager (FBM) details.
fqm	Displays Free Queue Manager (FQM) deyails.
help	Displays supported block names.
internal	Displays ingressq internal datastructure.
isq	Displays Input Shape Queue (ISQ) details.
lns	Displays Link Scheduler (LNS) details.
mti	Displays pse interface control data.
pfi	Displays Plane Fabric Interface (PFI) details.
pgi	Displays Pogo Interface (PGI) details.
pii	Displays Packet Ingress Interface (PII) control data.
pmi	Displays Packet Memory Interface (PMI) control data.
qdm	Displays QDM details.
seg	Displays segmentation unit details.
spi	Displays ingressq interface control data.
sqe	Displays Shape Queue Engine (SQE) details.
ssm	Displays Show Start Manager (SSM) details.
tfi	Displays To Fabric Interface (TFI) CLI.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display the internal trace information of Egressq for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers ingressq block isq
```

show controllers plim asic ether queues

To display the ethernet PLIM asic information, use the **show controllers plim asic ether queues** command in EXEC mode.

show controllers plim asic ether queues location [{*node-idname*}]

Syntax Description

location [*node-id* | *name*]	Identifies the location of the ethernet. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display the internal trace information of Egressq for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers plim asic ether queues location 0/1/CPU0
```

show controllers plim asic pla

To display physical layer interface module (PLIM) ASIC line-card information for the plane card, use the **show controllers plim asic pla** command in EXEC mode.

show controllers plim asic pla {**clients** | **eio** {**link_id** | **all**} **error** | **packet mbp instance number** | **pointers** | **sbp**} [**location** *node-id*]

Syntax Description

clients	Displays information for PLA clients.
eio	Displays information about EIO commands for PLA.
link_id	Displays PLA information for a specific link ID. Range is from 0 to 4294967295.
all	Displays PLA information for all links.
error	Displays PLA error information.
packet	Displays information for the dump packet.
mbp	Displays MBP buffer information.
instance number	Displays the PLA instance number for a specific instance. Range is from 0 to 3.
pointers	Displays information for PLA pointers.
sbp	Displays sharp back-pressure (SBP) table.
location *node-id*	Identifies the location of the node whose PLIM ASIC information you want to display. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Task ID	Operations
cisco-support	read

Examples

The following example shows how to display PLIM ASIC PLA information for an interface on a router:

```
RP/0/RP0/CPU0:router# show controllers plim asic pla eio links?

<0-4294967295>  link id
all             show all links
```

show controllers plim asic pla768

To display physical layer interface module (PLIM) ASIC line-card information for the OC-768 card, use the **show controllers plim asic pla768** command in EXEC mode.

show controllers plim asic pla768 {**ports** | **eio** {**link_id** | **all**}} [**location** *node-id*]

Syntax Description

ports	Displays port mapping information.
eio	Displays information about Elastic I/O (EIO) commands for the Reindeer ASIC.
link_id	Displays OC-768 information for a specific link ID. Range is from 0 to 4294967295.
all	Displays PLA information for all links.
location *node-id*	Identifies the location of the node whose PLIM ASIC information you want to display. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read
cisco-support	read

Examples

The following example shows how to display PLIM ASIC PLA768 information for an interface:

```
RP/0/RP0/CPU0:router# show controllers plim asic pla768 ?

eio    Show eio commands for the Reindeer ASIC
ports  Port mapping information
```

show controllers plim asic plaspa

To display physical layer interface module (PLIM) ASIC line-card information for the shared port adapters (SPA), use the **show controllers plim asic plaspa** command in EXEC mode.

show controllers plim asic plaspa {**eio** {**link_id** | **all**} | **error** | **ifhandle** | **instance** | **num-list** | **queues** | **sbp** | **txport** | **uidb** {**entry instance** | **map instance** | **table instance**}} [**location** *node-id*]

Syntax Description

eio *link_id*	Displays EIO commands for PLASPA information for a specific link ID. Range is from 0 to 4294967295.
all	Displays PLA information for all links.
error	Displays PLASPA error information.
ifhandle	Displays the name associated with the interface.
instance	Displays instance information of the PLASPA ASIC. Range is from 0 to1.
num-inst	Displays number of instances of the PLASPA ASIC.
queues	Displays PLASPA queue information.
sbp	Displays egress queue back-pressure table information.
txport	Displays egressq port information. Range of shared port adapters (SPA) instance is from 0 to 5.
uidb	Displays PLASPA uidb hash table information.
location *node-id*	Identifies the location of the node whose PLIM ASIC information you want to display. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.8.0	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
drivers	read
cisco-support	read

Examples

The following example shows how to display PLIM ASIC PLASPA information for an interface on the router:

```
RP/0/RP0/CPU0:router# show controllers plim asic plaspa eio links all location 0/3/CPU0


Wed Sep 10 04:52:27.452 UTC

             Node: 0/3/CPU0:
----------------------------------------

EIO links:
--------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
--------------------------------------------------------------------
PLASPA_1    PSE_0       TX   2       0        0      0      EIO_LINK_TRAINED
PLASPA_1    EGRESSQ_0   RX   61      1        1      0      EIO_LINK_TRAINED
```

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

type	Interface type. For more information, use the question mark (**?**) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
summary	Displays a summarized information for PLIM ASICs on a specified node, or for all interfaces on the router.
location *node-id*	Identifies the location of the node whose PLIM ASIC information you want to display. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

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/RP0/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
TotalPkts         : 1815571             UnicastPkts       : 1815571
MulticastPkts     : 0                   BroadcastPkts     : 0
64Octets          : 63846               65to127Octets     : 11844
128to255Octets    : 7                   256to511Octets    : 0
512to1023Octets   : 0                   1024to1518Octets  : 0
1519to1548Octets  : 0                   1549to9216Octets  : 0
>9216Octets       : 0                   BadCRCPkts        : 0
BadCodedPkts      : 0                   Runt              : 0
ShortPkts         : 1739874             802.1QPkts        : 0
Drop              : 0                   PausePkts         : 0
ControlPkts       : 0                   Jabbers           : 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 14: 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.
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).

Field	Description
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).
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.

Field	Description
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 terminations that occurred on this segment.
LateCollision	Number of late collisions on this segment
CollisionAbort	Number of collisions that were terminated.
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 terminations that occurred on this segment.
LengthAbort	Number of length terminations 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 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 *node-id*	Identifies the location of the node whose PLIM ASIC information you want to display. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

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/RP0/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 15: 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)	Displays the following info for all SPAs installed in the router: • 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.
Summary info (for interfaces)	Displays the following info for all interfaces associated with the specified SPA: • 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—UIDB[12] assigned by the software, in hexadecimal format. • Key—AISC key, in hexadecimal format. • Hkey—ASIC registry key. • Hkey idx—ASIC registry key index.

[12] Universal interface descriptor block

show controllers pse eio links

To display packet switching engine (PSE) information for Elastic I/O (EIO) links, use the **show controllers pse eio links** command in EXEC mode.

show controllers pse eio links {*link-number* | **all**} [**location** *node-id*]

Syntax Description

links *link-number*	Displays PSE information for the specified link. Replace the *link_number* argument with a link number in the range from 0 to 4294967295. **Note** Use the **show controllers pse eio links all location** *node-id* command to display all available EIO link IDs on a node.
links all	Displays PSE information for all links on the specified node.
location *node-id*	(Optional) Displays all EIO links on a specific node only. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	The *link-number* argument range of 1 through 4294967295 has changed to 0 to 4294967295.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read
interface	read

Examples

The following is sample output from the **show controllers pse eio links** command for a specific EIO link:

```
RP/0/RP0/CPU0:router# show controllers pse eio links 1

             Node: 0/0/CPU0:
----------------------------------------

EIO link: 1
```

```
-------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
-------------------------------------------------------------------
PSE_0       PLASPA_0    RX   1       1         1        0      EIO_LINK_TRAINED
-------------------------------------------------------------------
Macro-id Windage Diag status
-------------------------------------------------------------------
0        4       0x0000
1        4       0x0000
2        4       0x0000
3        4       0x0000
-------------------------------------------------------------------
```

The following is sample output from the show controllers pse eio links command for all EIO links:

```
RP/0/RP0/CPU0:router#show controllers pse eio links all

             Node: 0/0/CPU0:
----------------------------------------

EIO links:
-------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
-------------------------------------------------------------------
PSE_1       FABRICQ_0   RX   50      1        1      0      EIO_LINK_TRAINED
PSE_1       FABRICQ_1   RX   51      1        1      0      EIO_LINK_TRAINED
PSE_1       EGRESSQ_0   RX   64      1        1      0      EIO_LINK_TRAINED
PSE_1       EGRESSQ_0   TX   11      0        0      0      EIO_LINK_TRAINED
PSE_0       PLASPA_0    RX   1       1        1      0      EIO_LINK_TRAINED
PSE_0       PLASPA_1    RX   2       1        1      0      EIO_LINK_TRAINED
PSE_0       INGRESSQ_0  RX   24      1        1      0      EIO_LINK_TRAINED
PSE_0       INGRESSQ_0  TX   10      0        0      0      EIO_LINK_TRAINED
```

This table describes the significant fields shown in the display.

Table 16: show controllers pse eio links Field Descriptions

Field	Description
Node	Node whose PSE information is displayed.
EIO link	EIO link whose information is displayed.
ASIC Id	ASIC associated with this EIO link.
Peer Id	ASIC of the remote peer of this EIO link.
Type	Indicates whether this link is receiving or transmitting (re)training requests.
Link-Id	Unique ID assigned by the system to the EIO link.
Attempts	Number of consecutive EIO training requests for the link made by the PSE driver to the peer. **Note** Typically, the PSE driver at the receive end of a link initiates the training of that EIO link. Therefore, the EIO links whose PSE driver is at the transmit end show a value of *0* for the *Attempts* field, even though those links are in the EIO_LINK_TRAINED state.

Field	Description
Accept	Number of PSE driver requests for training that were accepted by the peer. When a PSE driver request is accepted, training is started. **Note** Typically, the PSE driver at the receive end of a link initiates the training of that EIO link. Therefore, the EIO links whose PSE driver is at the transmit end show a value of *0* for the *Accept* field, even though those links are in the EIO_LINK_TRAINED state.
Failed	Number of times the training for this link failed for any reason.
State	Current state of the EIO link.
Macro-id Windage Diag status	Windage value used for the training, and the final status of the training for that windage. **Note** The Macro-id Windage Diag status field is displayed only when you ask EIO info for specific link.

Related Commands

Command	Description
show controllers pse mp, on page 111	displays packet switching engine information for the maintenance processor on a specific controller or node.
show controllers pse summary, on page 124	Displays a summary of packet switching engine information for a specific controller or node.

show controllers pse ipc

To display packet switching engine (PSE) device information for interprocess communication (IPC) connections, or for a specific IPC controller, use the **show controllers pse ipc** command in EXEC mode.

show controllers pse ipc {**client-connection** {*connID* | **all**} | **cpuctrlif**} [{**egress** | **ingress**}] [**location** *node-id*]

Syntax Description

client-connection *connID*	Displays IPC information about the specified client connection. Replace the *connID* argument with the client connection ID. Range is from 0 to 255.
client-connection all	Displays IPC information about the all client connection.
cpuctrlif	Displays IPC information about the specified PSE IPC CPU controller instance.
egress	(Optional) Displays IPC information for the egress PSE device. **Note** Follow the **egress**argument with the location *node-id* keyword and argument to restrict the command to a specific node containing the specified device instance.
ingress	(Optional) Displays IPC information for the ingress PSE device. **Note** Follow the **ingress** argument with the location *node-id* keyword and argument to restrict the command to a specific node containing the specified device instance.
location *node-id*	(Optional) Identifies the location of the node whose PSE device information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router. **Note** Include the **egress** or **ingress**argument before thelocation *node-id* keyword and argument to restrict the command to a specific device instance on the specified node.

Command Default

No default behavior or values

Command Modes

EXEC mode

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 *connID* argument range of 1 to 255 has changed to 0 to 255.

Usage Guidelines

To display client connection IPC information for a specific device instance, include the **egress** or **ingress** argument with the command, as shown in the following examples:

```
show controllers pse ipc client-connection connId egress

show controllers pse ipc client-connection connId ingress
```

To display client connection IPC information for a specific node location, include the **location** *node-id* keyword and argument with the command, as shown in the following example:

```
show controllers pse ipc client-connection connId location node-id
```

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to display PSE information for all IPC client-connections:

```
RP/0/RP0/CPU0:router# show controllers pse ipc client-connection all

Mon Nov  2 15:20:06.228 UTC

             Node: 0/0/CPU0:
----------------------------------------

PSE IPC Conn Info:
-------------------------------------------------
ConnId:         0 (Backdoor)
ConnOptions:    0x1
Clinfos:        0 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0
SendReqs:       0 (iHP) 5976 (iNP) 0 (eHP) 11404 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   2
RecvQState:     0/16


PSE IPC Conn Info:
-------------------------------------------------
ConnId:         1 (uidb-mipc)
ConnOptions:    0
Clinfos:        0x50074180 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0xc0c2
SendReqs:       0 (iHP) 189 (iNP) 0 (eHP) 190 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16
```

```
PSE IPC Conn Info:
-------------------------------------------------
ConnId:         2 (stats_svr)
ConnOptions:    0
Clinfos:        0x50074f94 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0x1003002
SendReqs:       0 (iHP) 72 (iNP) 0 (eHP) 327 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16


PSE IPC Conn Info:
-------------------------------------------------
ConnId:         3 (TCAM Mgr)
ConnOptions:    0
Clinfos:        0x50073d9c (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0x30e06
SendReqs:       0 (iHP) 291 (iNP) 0 (eHP) 163 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       21
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16


PSE IPC Conn Info:
-------------------------------------------------
ConnId:         4 (hfr_pm)
ConnOptions:    0
Clinfos:        0x500778e0 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0xc0006
SendReqs:       0 (iHP) 21 (iNP) 0 (eHP) 5 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16


PSE IPC Conn Info:
-------------------------------------------------
ConnId:         5 (PLU-TLU-Mgr-118869)
ConnOptions:    0
Clinfos:        0x500785b0 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0x1fe
SendReqs:       0 (iHP) 59 (iNP) 0 (eHP) 779 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       126
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16
```

```
PSE IPC Conn Info:
-------------------------------------------------
ConnId:         6 (PLU-TLU-Mgr-118878)
ConnOptions:    0
Clinfos:        0x50079218 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0x1fe
SendReqs:       0 (iHP) 72038 (iNP) 0 (eHP) 65852 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16


PSE IPC Conn Info:
-------------------------------------------------
ConnId:         7 (PLU-TLU-Mgr-118875)
ConnOptions:    0
Clinfos:        0x50079ea4 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0x1fe
SendReqs:       0 (iHP) 3 (iNP) 0 (eHP) 0 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16


PSE IPC Conn Info:
-------------------------------------------------
ConnId:         8 (PLU-TLU-Mgr-118876)
ConnOptions:    0
Clinfos:        0x5007ab30 (Notif) 0 (Reply)
ConnStateFlags: 0
ConnNotifFlags: 0x1fe
SendReqs:       0 (iHP) 21 (iNP) 0 (eHP) 18 (eNP)
SendFiltered:   0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
SendFailed:     0 (iHP) 0 (iNP) 0 (eHP) 0 (eNP)
RecvReqs:       0
RecvReqTouts:   0
RecvDatTouts:   0
RecvQState:     0/16
```

This table describes the significant fields shown in the display.

Table 17: show controllers pse ipc client-connection Field Descriptions

Field	Description
ConnId	Connection identifier.
ConnOptions	Connection bind time options requested by the client creating this connection.
Clinfos	Client information (clinfo) index number. The memory database is organized as a table of clinfos, which are indexed by the region id and maintained in shared memory.
ConnStateFlags	Bitmask containing the current state of the connection.

Field	Description
ConnNotifFlags	Bitmask of the types of notifications that the client creating this connection has registered for.
SendReqs	Number of PSE IPC send requests that client has made on this connection.
SendFiltered	Number of send requests that were filtered out (dropped) from the PSE driver due to any internal filter policy.
SendFailed	Number of send requests that could not be handled by the PSE driver due to error conditions such as hardware I/O failures, lack of buffering space, and so forth.
RecvReqs	Number of data receive requests that the client has made on this connection.
RecvReqTouts	Number of data receive requests from the client that timed out because no data was received from PSE device.
RecvDatTouts	Number of times data was received from PSE device, but timed out because there was no receive request from client to pick up that data from the connection.
RecvQState	Current state of the internal data receive FIFO queue. The internal data receive FIFO queue buffers data arriving from the PSE device for the connection, until the client sends a receive request for that data. The RecvQState is expressed in the *X/Y* notation, where *X* is current depth of the queue, and *Y* is the maximum depth allowed for the queue.

The following command shows how to display PSE information for a specific IPC controller connection:

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

             Node: 0/0/CPU0:
----------------------------------------

Pse IPC cpuctrl if Information
-------------------------------------------------
Cpuctrl interface is up
Normal Priority Tx I/F:
        BufBase 0x112190  BufSize 32768 PadBufp 0xec0af118 Seqnum 854
        RORegNum 10 RORegVal 0x49f0 WORegNum 2 WORegVal 0x49f0
        CDMACh 0 CDMAQ 3
        HoldQ 0/512 CDMAPendQ 0/128 UnackQ 0/256
        NumEnqs 854 NumRejs 0 NumDmaReqFails 0
        NumDmaPendFails 0 NumMbxSpcFails 0 NumHldqOvflows 0
Normal Priority Rx I/F:
        NumPDMAEntries 64 NumEnqs 15 NumRejs 0

Pse IPC cpuctrl if Information
-------------------------------------------------
Cpuctrl interface is up
Normal Priority Tx I/F:
        BufBase 0x112190  BufSize 32768 PadBufp 0xec0af14c Seqnum 424
        RORegNum 10 RORegVal 0x1c60 WORegNum 2 WORegVal 0x1c60
        CDMACh 1 CDMAQ 3
        HoldQ 0/512 CDMAPendQ 0/128 UnackQ 0/256
        NumEnqs 424 NumRejs 0 NumDmaReqFails 0
        NumDmaPendFails 0 NumMbxSpcFails 0 NumHldqOvflows 0
Normal Priority Rx I/F:
```

```
        NumPDMAEntries 64 NumEnqs 2 NumRejs 0

             Node: 0/3/CPU0:
----------------------------------------

Pse IPC cpuctrl if Information
------------------------------------------------
Cpuctrl interface is up
Normal Priority Tx I/F:
        BufBase 0x112190  BufSize 32768 PadBufp 0xec0af118 Seqnum 833
        RORegNum 10 RORegVal 0xdb8 WORegNum 2 WORegVal 0xdb8
        CDMACh 0 CDMAQ 3
        HoldQ 0/512 CDMAPendQ 0/128 UnackQ 0/256
        NumEnqs 833 NumRejs 0 NumDmaReqFails 0
        NumDmaPendFails 0 NumMbxSpcFails 0 NumHldqOvflows 0
Normal Priority Rx I/F:
        NumPDMAEntries 64 NumEnqs 9 NumRejs 0

Pse IPC cpuctrl if Information
------------------------------------------------
Cpuctrl interface is up
Normal Priority Tx I/F:
        BufBase 0x112190  BufSize 32768 PadBufp 0xec0af14c Seqnum 409
        RORegNum 10 RORegVal 0x5f70 WORegNum 2 WORegVal 0x5f70
        CDMACh 1 CDMAQ 3
        HoldQ 0/512 CDMAPendQ 0/128 UnackQ 0/256
        NumEnqs 409 NumRejs 0 NumDmaReqFails 0
        NumDmaPendFails 0 NumMbxSpcFails 0 NumHldqOvflows 0
Normal Priority Rx I/F:
        NumPDMAEntries 64 NumEnqs 2 NumRejs 0
```

This table describes the significant fields shown in the display.

Table 18: show controllers pse ipc cpuctrlif Field Descriptions

Field	Description
Cpuctrl interface is up Cpuctrl interface is down	Whether the connection is currently up or down.

Field	Description
Normal Priority Tx I/F	Displays the following transmit buffer information for the connection: • BufBase • BufSize • PadBufp • Seqnum • RORegNum • RORegVal • WORegNum • WORegVal • CDMACh • CDMAQ • HoldQ • CDMAPendQ • UnackQ • NumEnqs • NumRejs • NumDmaReqFails • NumDmaPendFails • NumMbxSpcFails • NumHldqOvflows
Normal Priority Rx I/F:	Displays the following receive buffer information for the connection: • NumPDMAEntries • NumEnqs • NumRejs

Related Commands

Command	Description
show controllers pse eio links, on page 101	Displays packet switching engine information for Elastic I/O links.
show controllers pse mp, on page 111	displays packet switching engine information for the maintenance processor on a specific controller or node.
show controllers pse summary, on page 124	Displays a summary of packet switching engine information for a specific controller or node.

show controllers pse mp

To display packet switching engine (PSE) information for the maintenance processor on a specific controller or node, use the **show controllers pse mp** command in EXEC mode.

show controllers pse mp [{**egress** | **ingress**}] [**location** *node-id*]

Syntax Description

egress	(Optional) Displays information 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 information 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 *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router. **Note** Include the **instance** {**0** | **1**} argument before the**location** *node-id* keyword and argument to restrict the command to a specific device instance on the specified node.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

The **instance** and **location** optional keywords are not mutually exclusive. The **instance** keyword directs the command to a 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 **instance** and **location** options together in the same command. If you do not specify the **instance** {**0** | **1**} and **location** *node-id* keywords and argument, the **show controllers pse mp** command takes effect on 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 maintenance processor information for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers pse mp instance 1

             Node: 0/0/CPU0:
----------------------------------------

PSE 1, MP Info:
-----------------------------------------------
MIPC Subtask Context Information
        High Priority MIPC Mbox Info
                NumProc 0 NumUnsupp 0
                NxtSeqNum 0 NumOOSeq 0
        Norm Priority MIPC Mbox Info
                NumProc 429 NumUnsupp 0
                NxtSeqNum 425 NumOOSeq 0
        NumMsgsGtred 93 NumDMAErrDrops 5 NumGtrDisDrops 2
MSTAT Subtask Context Information
        NumSegs 9 CntrsPerBrst 93 MinCycleMsecs 4000
        ---------  Seg[0] config -----------------
        SegId 0 SegBeg 0 SegEnd 3071
        ExpBeg 0 ExpEnd 0 ExpRate 0 CycBefExp 0
        ---------  Seg[1] config -----------------
        SegId 1 SegBeg 3072 SegEnd 74239
        ExpBeg 3072 ExpEnd 3072 ExpRate 0 CycBefExp 0
        ---------  Seg[2] config -----------------
        SegId 2 SegBeg 74240 SegEnd 107007
        ExpBeg 74240 ExpEnd 74240 ExpRate 0 CycBefExp 0
        ---------  Seg[3] config -----------------
        SegId 3 SegBeg 107008 SegEnd 262143
        ExpBeg 107008 ExpEnd 107008 ExpRate 0 CycBefExp 0
        ---------  Seg[4] config -----------------
        SegId 4 SegBeg 262144 SegEnd 265215
        ExpBeg 262144 ExpEnd 262144 ExpRate 0 CycBefExp 0
        ---------  Seg[5] config -----------------
        SegId 5 SegBeg 265216 SegEnd 336383
        ExpBeg 265216 ExpEnd 265216 ExpRate 0 CycBefExp 0
        ---------  Seg[6] config -----------------
        SegId 6 SegBeg 336384 SegEnd 442367
        ExpBeg 336384 ExpEnd 336385 ExpRate 1 CycBefExp 1
        ---------  Seg[7] config -----------------
        SegId 7 SegBeg 442368 SegEnd 458751
        ExpBeg 442368 ExpEnd 442368 ExpRate 0 CycBefExp 0
        ---------  Seg[8] config -----------------
        SegId 8 SegBeg 458752 SegEnd 491519
        ExpBeg 458752 ExpEnd 458752 ExpRate 0 CycBefExp 0
        CurrTokens 9 MaxTokens 44 MinTokens 11
        CurrSeg 5 CurrCntr 289954 CntrsExp 66532
        PktsExp 33266 DMAErrDrops 0 REDDrops 0
        REDDelays 0 GtrDisDelays 0
        CfgUpdsApp 1 SegUpdsApp 10 UpdsRej 0

             Node: 0/3/CPU0:
----------------------------------------

PSE 1, MP Info:
-----------------------------------------------
MIPC Subtask Context Information
        High Priority MIPC Mbox Info
                NumProc 0 NumUnsupp 0
                NxtSeqNum 0 NumOOSeq 0
```

```
        Norm Priority MIPC Mbox Info
                NumProc 416 NumUnsupp 0
                NxtSeqNum 412 NumOOSeq 0
        NumMsgsGtred 71 NumDMAErrDrops 4 NumGtrDisDrops 3
MSTAT Subtask Context Information
        NumSegs 9 CntrsPerBrst 93 MinCycleMsecs 4000
        ---------  Seg[0] config -----------------
        SegId 0 SegBeg 0 SegEnd 3071
        ExpBeg 0 ExpEnd 0 ExpRate 0 CycBefExp 0
        ---------  Seg[1] config -----------------
        SegId 1 SegBeg 3072 SegEnd 74239
        ExpBeg 3072 ExpEnd 3072 ExpRate 0 CycBefExp 0
        ---------  Seg[2] config -----------------
        SegId 2 SegBeg 74240 SegEnd 107007
        ExpBeg 74240 ExpEnd 74240 ExpRate 0 CycBefExp 0
        ---------  Seg[3] config -----------------
        SegId 3 SegBeg 107008 SegEnd 262143
        ExpBeg 107008 ExpEnd 107008 ExpRate 0 CycBefExp 0
        ---------  Seg[4] config -----------------
        SegId 4 SegBeg 262144 SegEnd 265215
        ExpBeg 262144 ExpEnd 262144 ExpRate 0 CycBefExp 0
        ---------  Seg[5] config -----------------
        SegId 5 SegBeg 265216 SegEnd 336383
        ExpBeg 265216 ExpEnd 265216 ExpRate 0 CycBefExp 0
        ---------  Seg[6] config -----------------
        SegId 6 SegBeg 336384 SegEnd 442367
        ExpBeg 336384 ExpEnd 336415 ExpRate 1 CycBefExp 0
        ---------  Seg[7] config -----------------
        SegId 7 SegBeg 442368 SegEnd 458751
        ExpBeg 442368 ExpEnd 442368 ExpRate 0 CycBefExp 0
        ---------  Seg[8] config -----------------
        SegId 8 SegBeg 458752 SegEnd 491519
        ExpBeg 458752 ExpEnd 458752 ExpRate 0 CycBefExp 0
        CurrTokens 5 MaxTokens 44 MinTokens 11
        CurrSeg 6 CurrCntr 398633 CntrsExp 1064256
        PktsExp 33258 DMAErrDrops 0 REDDrops 0
        REDDelays 0 GtrDisDelays 0
        CfgUpdsApp 1 SegUpdsApp 10 UpdsRej 0
```

This table describes the significant fields shown in the display.

Table 19: show controllers pse mp Field Descriptions

Field	Description
MIPC Subtask Context Information	MIPC subtask information from the following mailboxes (queues): • High Priority MIPC Mbox • Norm Priority MIPC Mbox **Note** The MIPC MBox is a chunk of the MP DMEM that receives MIPC messages. The Norm Priority mailbox has buffer of 32 KB, while the High Priority Mbox has an 8 KB buffer.

Field	Description
High Priority MIPC Mbox Info	Mailbox (or queue) that receives high-priority MIPC messages. The following information is displayed for the High Priority MIPC Mbox: • NumProc—Number of MIPC messages that have been processed. • NumUnsupp—Number of unsupported MIPC messages. • NxtSeqNum—Sequence number of the message with respect to other messages sent on the same MIPC channel. • NumOOSeq—Number of MIPC messages that were received out of sequence.
Norm Priority MIPC Mbox info	Mailbox (or queue) that receives normal-priority MIPC messages. The following information is displayed for the High Priority MIPC Mbox: • NumProc—Number of MIPC messages that have been processed. • NumUnsupp—Number of unsupported MIPC messages. • NxtSeqNum—Identifies the sequence number of the message with respect to other messages sent on the same MIPC channel. • NumOOSeq—Number of MIPC messages that were received out of sequence.
NumMsgsGtred	Number of MIPC gather messages that have been processed.
NumDMAErrDrops	Number of MIPC gather messages that were dropped due to DMA errors.
NumGtrDisDrops	Number of MIPC gather messages that were dropped due to distribution errors.
MSTAT Subtask Context Information	MSTAT subtask information from the following queues: • High Priority MIPC Mbox • Norm Priority MIPC Mbox The MIPC MBox is a chunk of the MP DMEM that receives MIPC messages. The Norm Priority mailbox has buffer of 32 KB, while the High Priority Mbox has an 8 KB buffer.

Related Commands

Command	Description
show controllers pse eio links, on page 101	Displays packet switching engine information for Elastic I/O links.
show controllers pse summary, on page 124	Displays a summary of packet switching engine information for a specific controller or node.

show controllers pse qfp classification

To display ACL class group ID, which is used to view Ternary Content Addressable Memory(TCAM) entry, use the **show controllers pse qfp classification** command in EXEC mode.

show controllers pse qfp classification class-group-manager class-group all location *node-ID*

Syntax Description

class-group-manager	Displays the class group manager.
class-group	Displays the class group.
all	Displays the ACL class group ID for all class groups.
location *node-ID*	Displays the ACL class group ID for a specific location. The node-ID argument is entered in the rack/slot/module notation.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.3.1	This command was introduced

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
sonet sdh or dwdm	read
interface	read
root-system	read

Example

This command shows how to display ACL class group ID, which is used to view TCAM entry:

```
RP/0/RP0/CPU0:router# show controllers pse qfp classification class-group-manager class-group
 all location 0/2/cpu0

QFP classification class client all group
  class-group [acl:1]
  class-group [acl:2]
  class-group [acl:3]
  class-group [acl:4]
  class-group [lpts:2]
  class-group [lpts:3]
```

```
class-group [lpts:4]
class-group [li:1]
class-group [li:2]
```

Related Commands

Command	Description
show controllers pse qfp classification feature-manager, on page 117	Displays TCAM entries.

show controllers pse qfp classification feature-manager

To display Ternary Content Addressable Memory(TCAM) entries, use the **show controllers pse qfp classification feature-manager** command in EXEC mode.

show controllers pse qfp classification feature-manager class-group ce-data client *class-group-ID interface-path-id* **location** *node-ID*

Syntax Description

class-group	Displays the class group.
ce-data	Displays the ce-data.
client	Specifies type of client. The available options are: • acl - ACL client • cce - CCE client, includes QoS, Firewall, and FPM • dbg - Conditional debug client • ess - ESS client • fw-pam - Firewall PAM(Port-Application-Mapping) client • ipsec - IPSec client • lpts - LPTS client • nat - NAT client • pbr - PBR client • tc - ESS TC client • v6comp - V6 Compression client • wccp - WCCP client
class-group-ID	Displays the class group ID for all class groups.

interface-path-id	Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port*; a slash between values is required as part of the notation. • *rack*: Chassis number of the rack. • *slot*: Physical slot number of the modular services card or line card. • *module*: Module number. A physical layer interface module (PLIM) is always 0. • *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
location *node-id*	Displays the ACL class group ID for a specific location. The node-id argument is entered in the rack/slot/module notation.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.3.1	This command was introduced

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
sonet sdh or dwdm	read
interface	read
root-system	read

Example

This command shows how to display TCAM entries:

```
RP/0/RP0/CPU0:router# show controllers pse qfp classification feature-manager class-group
ce-data acl 2 interface pos0/2/1/2.1 detail location 0/2/cPU0
```

```
QFP TCAM information for qfp_num 0

CPP classification class group TCAM
class-group [acl-cg:2] (classes: 2, total number of vmrs: 2)
key name: 160_01  value size: 160 result size: 4
  region id: 1  vmr id: 2 number of vmrs: 2
  Value : : 33000001 06000000 00500050 29000001 00020001
   Mask : : ffffffff ff000000 ffffffff ffffffff ffff0009
Result : : 01000002 89c54800 00000000 00000000

  Value : : 00000000 00000000 00000000 00000000 00020001
   Mask : : 00000000 00000000 00000000 00000000 ffff0009
Result : : 02000002 89c54810 00000000 00000000


QFP TCAM information for qfp_num 1

CPP classification class group TCAM
class-group [acl-cg:2] (classes: 2, total number of vmrs: 2)
key name: 160_01  value size: 160 result size: 4
  region id: 1  vmr id: 1 number of vmrs: 2
  Value : : 33000001 06000000 00500050 29000001 00010001
   Mask : : ffffffff ff000000 ffffffff ffffffff ffff0009
Result : : 01000002 8986d800 00000000 00000000

  Value : : 00000000 00000000 00000000 00000000 00010001
   Mask : : 00000000 00000000 00000000 00000000 ffff0009
Result : : 02000002 8986d810 00000000 00000000
```

Related Commands

Command	Description
show controllers pse qfp classification, on page 115	Display ACL class group ID which is used to dump TCAM entries.

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 *node-id* argument is expressed in the *rack/slot/module* 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 mode

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.

GigabitEthernet shared port adapters(SPA) support all types of ethernet packets. A line card drops a packet only if the packet is of an invalid ethernet type. This eventually increases the L2 protocol unknown count in the output of the **show controller pse statistics ingress location node-ID** command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to display PSE statistics:

```
RP/0/RP0/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/RP0/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 20: show controllers pse statistics Field Descriptions

Field	Description
Node	Identifies the node whose PSE statistics are displayed. The node ID is expressed in the *rack/slot/module* notation.

Field	Description
PSE 0, Statistics Info	Displays all statistics maintained by the PSE.

Related Commands

Command	Description
show controllers pse eio links, on page 101	Displays packet switching engine information for Elastic I/O links.
show controllers pse ipc, on page 104	Displays packet switching engine device information for interprocess communication connections, or for a specific IPC controller.
show controllers pse mp, on page 111	displays packet switching engine information for the maintenance processor on a specific controller or node.
show controllers pse summary, on page 124	Displays a summary of packet switching engine information for a specific controller or node.

show controllers pse summary

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

show controllers pse summary [{**egress** | **ingress**}] [**location** *node-id*]

Syntax Description

egress	(Optional) Displays information 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 information for the ingress PSE device only. **Note** Follow the **ingress** keyword 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 *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router. **Note** Include the **instance** {**0**	**1** } argument before the **location** *node-id* keyword and argument to restrict the command to a specific device instance on the specified node.

Command Default

No default behavior or values

Command Modes

EXEC mode

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.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to display a summary of PSE information for a specific controller instance:

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

Node: 0/1/CPU0:
----------------------------------------

Ingress PSE, Summary Info:
-------------------------------------------------
IBM P/N     :   LotNum      :
SerialNum   : 0xffffff  BadPPECls   : 0000
Version     : 3         CpuctrlPort : 5
DeviceState : 0 (UP)
StartupOpts : 00000000  MmappedBase : 0x61111000
ClsDisMask  : 0000      NFusedPPEs  : 4   (0 hwf, 4 swf)
MPUcodeName : /pkg/ucode/crs/pse/ingress_mp_v3.mucode
PPEUcodeName: /pkg/ucode/crs/pse/metro_ingress_turbo_plim2_v3.mucode
INTR-Status : 00000000  INTR-Enable : 0x7ffffe
NColdResets : 1         NWarmResets : 0
NPPEUcDlds  : 1         NResetRetry : 0
NIntrtps    : 1         NIntrptThrot: 0

             Node: 0/6/CPU0:
----------------------------------------

Ingress PSE, Summary Info:
-------------------------------------------------
IBM P/N     :   LotNum      :
SerialNum   : 0xffffff  BadPPECls   : 0000
Version     : 3         CpuctrlPort : 5
DeviceState : 0 (UP)
StartupOpts : 00000000  MmappedBase : 0x61111000
ClsDisMask  : 0000      NFusedPPEs  : 4   (0 hwf, 4 swf)
MPUcodeName : /pkg/ucode/crs/pse/ingress_mp_v3.mucode
PPEUcodeName: /pkg/ucode/crs/pse/metro_ingress_turbo_plim2_v3.mucode
INTR-Status : 00000000  INTR-Enable : 0x7ffffe
NColdResets : 1         NWarmResets : 0
NPPEUcDlds  : 1         NResetRetry : 0
NIntrtps    : 1         NIntrptThrot: 0
```

This table describes the significant fields shown in the display.

Table 21: show controllers pse summary Field Descriptions

Field	Description
Node	Node whose PSE information is displayed.
IBM P/N	IBM part number.
SerialNum	Serial number of the node.
BadPPECls	Number of bad PPECIs on the PSE.
Version	PSE version.
CpuctrlPort	Cpuctrl port associated with the PSE instance.
DeviceState	Whether the node is up (active) or down (inactive).
StartupOpts	Internal information about the PSE startup options.

Field	Description
MmappedBase	Internal mapping information.
ClsDisMask	Internal masking information.
NFusedPPEs	Internal PPE information.
MPUcodeName	Information about the MPU code.
PPEUcodeName	Information about the PPEU code.
INTR-Status	Internal status information.
INTR-Enable	Internal enable information.
NColdResets	Number of cold resets experienced by the router.
NWarmResets	Number of warm resets experienced by the router.
NPPEUcDlds	Internal information about the PSE.
NResetRetry	Number of times the router attempted to reset itself.
NIntrtps	Internal information about interrupts on the PSE.
NIntrptThrot	Internal throttling information for the PSE.

Related Commands

Command	Description
show controllers pse eio links, on page 101	Displays packet switching engine information for Elastic I/O links.
show controllers pse ipc, on page 104	Displays packet switching engine device information for interprocess communication connections, or for a specific IPC controller.
show controllers pse mp, on page 111	displays packet switching engine information for the maintenance processor on a specific controller or node.
show controllers pse summary, on page 124	Displays a summary of packet switching engine information for a specific controller or node.

show controllers pse tcam

To display the ternary content addressable memory (TCAM) manager module information for a packet switching engine (PSE) on a specific controller or node, use the **show controllers pse tcam** command in EXEC mode.

show controllers pse tcam [{**connections** | **contents** | **lookup** | **prefix-compression** | **region-addrs** | **region-list** | **rlb-range-map** | **rsm** | **summary** | **trace**}] [{**egress** | **ingress**}] [**location** *node-id*]

Syntax Description

connections	(Optional) Displays the summary information for the client and server connections.
contents	(Optional)Displays the contents of TCAM entries/registers and range logic block (RLB) entries.
lookup	(Optional) Displays the results of a lookup operation in a specific bank.
prefix-compression	(Optional) Displays the failed prefixes in the IPv6 prefix compression.
region-addrs	(Optional) Displays the CAM addresses used by a specific region.
region-list	(Optional) Displays region handles for a feature in a specific bank.
rlb-range-map	(Optional) Displays the mapping of specified port range to fields in TCAM entries.
rsm	(Optional) Display resource shadow memory (RSM) data.
summary	(Optional) Displays the summary of CAM free space or entries for a region.
trace	(Optional) Displays the TCAM manager trace data.
egress	(Optional) Displays information 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 information for the ingress PSE device only. **Note** Follow the **ingress** keyword 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 *node-id* argument is expressed in the *rack/slot/module* notation. **Note** Use the **show platform** command to see the location of all nodes installed in the router. **Note** Include the **instance** {**0** | **1** } argument before the **location** *node-id* keyword and argument to restrict the command to a specific device instance on the specified node.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 5.1.3	The **lpts-ipv6-compression** keyword was added under **region-list** and **prefix-compression** . The show command output was updated to display local packet transport services (LPTS) IPv6 compression information.

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.

Task ID

Task ID	Operations
acl	read
interface	read
drivers	read

Examples

The following command shows how to display a summary of PSE TCAM information for a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers pse tcam summary ingress location 0/1/cpu0

TCAM Device Information for Ingress Metro, CAM channel 0:
Device size: 18M (256K array entries of 72-bits), 260014 available
Current mode of operation: Turbo
Software Initialization:
        Memory management state: complete
        Range block state: complete
        IPv6 prefix compression state: complete
Hardware Initialization:
        Device registers: complete
        CAM/SRAM Memory: complete
        Default entries for applications: complete
        Range Logic Block registers: complete
        IPv6 prefix compression region: complete
Feature specific information:
        packet filtering (id 0):
                Owner client id: 3.   Limit 260096 cells
                Total 1 regions using 76 CAM cells
        QoS (id 1):
                Owner client id: 1.   Limit 260096 cells
                Duplication enabled in Turbo mode into CAM channel 1
        Fab QoS (id 2):
                Owner client id: 1.   Limit 260096 cells
                Duplication enabled in Turbo mode into CAM channel 1
        ipv6 prefix compress (id 10):
                Owner client id: 13.   Limit 260096 cells
                Total 1 regions using 2 CAM cells
```

```
                Entry duplication enabled in Turbo and Feature modes into CAM c1
        tcam_mgr (id 11):
                Owner client id: 13.   Limit 260096 cells
                Total 1 regions using 4 CAM cells
        L2FIB (id 12):
                Owner client id: 14.   Limit 260096 cells
                Total 1 regions using 2048 CAM cells
        LI (id 13):
                Owner client id: 3.   Limit 262144 cells
                Total 1 regions using 0 CAM cells
                Duplication enabled in Turbo mode into CAM channel 1
TCAM Device Information for Ingress Metro, CAM channel 1:
Device size: 18M (256K array entries of 72-bits), 261760 available
Current mode of operation: Turbo
Software Initialization:
        Memory management state: complete
        Range block state: complete
        IPv6 prefix compression state: complete
Hardware Initialization:
        Device registers: complete
        CAM/SRAM Memory: complete
        Default entries for applications: complete
        Range Logic Block registers: complete
        IPv6 prefix compression region: complete
Feature specific information:
        Pre-IFIB (id 4):
                Owner client id: 10.   Limit 260096 cells
                Total 3 regions using 302 CAM cells
        ipv6 prefix compress (id 10):
                Owner client id: 13.   Limit 260096 cells
                Total 1 regions using 2 CAM cells
        tcam_mgr (id 11):
                Owner client id: 13.   Limit 260096 cells
                Total 2 regions using 80 CAM cells
        L2FIB (id 12):
                Owner client id: 14.   Limit 260096 cells
                Total 1 regions using 0 CAM cells
        LI (id 13):
                Owner client id: 3.   Limit 262144 cells
                Total 1 regions using 0 CAM cells
```

The following command shows how to display LPTS IPv6 compression information of PSE TCAM at a specific controller instance:

```
RP/0/RP0/CPU0:router# show controllers pse tcam region-list ingress lpts-ipv6-compression
location 0/1/cpu0
Number of regions for feature 36 in Ingress PSE, bank 0 is: 1
Region:            LPTS IPv6 pref compr ACL ID 0x000f id_len 4 region ID 7 region duplicate
 ID 7 entries 7

TCAM logical region information:
Ingress PSE, CAM bank 0, region name LPTS IPv6 pref compr
region ID 7 region duplicate ID 7
for feature lpts ipv6 prefix compress owner-id 15
Region size 7 entries (Max allowed 16000) of 144 bits (Result entry size 16 bytes)
ACL ID 0x   f of width 4 bits allocated from bucket (calculated) 0x6f msb 0x60
CAM cells in Ingress PSE, bank 0 used by region 7:
entry 0x01d02-0x01d0f, offset 0 - 13, result 0x01d02-0x01d0f, map 1 result allocated
Total cells: 14
Frame index: 7
Frame index bitmap: 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x80
Total Frame used: 1

Number of regions for feature 36 in Ingress PSE, bank 1 is: 1
```

```
Region:            LPTS IPv6 pref compr ACL ID 0x000f id_len 4 region ID 7 region duplicate
 ID 0 entries 7

TCAM logical region information:
Ingress PSE, CAM bank 1, region name LPTS IPv6 pref compr
region ID 7 region duplicate ID 0
for feature lpts ipv6 prefix compress owner-id 15
Region size 7 entries (Max allowed 16000) of 144 bits (Result entry size 16 bytes)
ACL ID 0x   f of width 4 bits allocated from bucket (calculated) 0x6f msb 0x60
CAM cells in Ingress PSE, bank 1 used by region 7:
entry 0x01802-0x01803, offset 0 - 1, result 0x01802-0x01803, map 1 result allocated
entry 0x0180e-0x01819, offset 2 - 13, result 0x0180e-0x01819, map 1 result allocated
Total cells: 14
Frame index: 6
Frame index bitmap: 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x0 0x40
Total Frame used: 1
```

show controllers pse utilization

To display the packet processing engine (PPE) utilization information in the packet switching engine (PSE) on a specific controller or node, use the **show controllers pse utilization** command in EXEC mode. The PPE processes each packet individually within the PSE ASIC and there are multiple PPEs present in the PSE.

show controllers pse utilization [{**egress** | **ingress**}]

Syntax Description

egress	(Optional) Displays the PPE utilization information 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 PPE utilization information for the ingress PSE device only. **Note** Follow the **ingress** keyword 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 PPE utilization information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

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.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following command shows how to display the PPE utilization information of all the ingress locations:

```
RP/0/RP0/CPU0:router# show controllers pse utilization ingress location all

PPE Utilization
```

```
        Node            Ingress   Egress
=======================================
        0/1/CPU0:          0.0
        0/6/CPU0:          0.1
```

The following command shows how to display the PPE utilization information of all the nodes having access to a PSE:

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

PPE Utilization
        Node            Ingress   Egress
=======================================
        0/1/CPU0:          0.0       0.0
        0/6/CPU0:          0.0       1.0
```

show packet-memory

To display information for packet memory, use the **show packet-memory** command inEXEC 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 *node-id*	(Optional) Displays detailed packet memory information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Displays information about all packet memory.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced .

Release	Modification
Release 3.9.0	Included the following keywords: • 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/RP0/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 22: 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.

Troubleshooting Commands

This module describes commands used for troubleshooting routers running Cisco IOS XR software.

The commands in this chapter with the cisco-support task ID are used in the *Cisco IOS XR Troubleshooting Guide for Cisco CRS-1 Router* as part of the troubleshooting process. For information about commands with the cisco-support task ID that are not documented in this chapter, please contact Cisco Technical Support.

Caution These Cisco support commands are normally reserved for use by Cisco Technical Support personnel only. There is some risk that they may cause performance or other issues that impact products without proper usage, and we highly recommend that you contact Cisco Technical Support prior to using any of these commands.

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

show arp trace

To display Address Resolution Protocol (ARP) entries in the buffer, use the **show arp trace** command in EXEC mode.

show arp trace

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show arp trace** command to display ARP entries in the buffer.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show arp trace** command:

```
RP/0/RP0/CPU0:router# show arp trace events

Tue Nov 10 04:13:22.766 PST

22 unique entries (4096 possible, 54 filtered)
Nov  5 19:48:27.624 ipv4_arp/slow 0/RP0/CPU0 1# t1  ARP-EVENT: Repopulating AIB
Nov  5 19:48:49.768 ipv4_arp/slow 0/RP0/CPU0 1# t1  ARP-DEV-EVENT: Unbinding frs
Nov  5 19:49:01.590 ipv4_arp/slow 0/RP0/CPU0 1# t1  ARP-EVENT: IM ORE received
Nov  5 19:54:12.448 ipv4_arp/slow 0/RP0/CPU0 5# t1  ARP-EVENT: Processing MAC c3
Nov  5 19:54:12.467 ipv4_arp/slow 0/RP0/CPU0 5# t1  ARP-EVENT: Interface attrib2
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 10# t1  ARP-EVENT: received interf3
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 5# t1  ARP-EVENT: Copying MAC addr3
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 6# t1  ARP-EVENT: Received VLAN ID)
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 3# t1  ARP-EVENT: Processing VLAN )
Nov  5 19:54:15.434 ipv4_arp/slow 0/RP0/CPU0 5# t1  ARP-EVENT: Interface not up0
Nov  5 19:54:15.437 ipv4_arp/slow 0/RP0/CPU0 1# t3  ARP-EVENT: IMP caps add suc0
Nov  5 19:54:15.581 ipv4_arp/fast 0/RP0/CPU0 5# t1  ARP-EVENT: Completing IDB i0
Nov  5 19:54:15.673 ipv4_arp/slow 0/RP0/CPU0 1# t1  ARP-EVENT: interface_entry 0
Nov  5 19:54:15.793 ipv4_arp/pkt 0/RP0/CPU0 1# t1  ARP-EVENT: Discarding arp pa2
Nov  5 19:57:22.531 ipv4_arp/fast 0/RP0/CPU0 4# t1  ARP-EVENT: received DPC for1
Nov  5 21:30:08.234 ipv4_arp/slow 0/RP0/CPU0 9# t1  ARP-EVENT: clearing ARP AIB1
Nov  5 21:46:04.169 ipv4_arp/slow 0/RP0/CPU0 18# t1  ARP-EVENT: updating arp-id)
Nov  5 21:46:04.169 ipv4_arp/slow 0/RP0/CPU0 9# t1  ARP-EVENT: adding ARP AIB e1
Nov  5 21:46:04.316 ipv4_arp/fast 0/RP0/CPU0 18# t1  ARP-EVENT: Interface Bundlp
Nov  6 17:03:53.443 ipv4_arp/pkt 0/RP0/CPU0 3# t1  PROBE: Timer expired on Mgmt1
Nov  6 17:04:23.052 ipv4_arp/pkt 0/RP0/CPU0 3# t1  PROBE: MgmtEth0/RP0/CPU0/0 eE
Nov  6 17:23:16.156 ipv4_arp/slow 0/RP0/CPU0 46# t1  ARP-EVENT: updated aib ent0
160 wrapping entries (4096 possible, 805 filtered, 965 total)
```

```
Nov  5 19:48:27.771 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Repopulating AIB
Nov  5 19:48:49.915 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-DEV-EVENT: Unbinding from s
Nov  5 19:49:01.737 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: IM ORE received
Nov  5 19:49:01.761 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Copying MAC address0
Nov  5 19:49:01.761 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface attribute2
Nov  5 19:49:01.761 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Processing MAC chan6
Nov  5 19:49:01.769 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 0
Nov  5 19:49:01.769 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 0
Nov  5 19:54:12.258 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 8
Nov  5 19:54:12.258 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 8
Nov  5 19:54:12.294 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Copying MAC address8
Nov  5 19:54:12.294 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface attribute2
Nov  5 19:54:12.294 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Processing MAC chan3
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 1
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 2
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 3
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 1
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 2
Nov  5 19:54:12.555 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received interface 3
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Copying MAC address1
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Copying MAC address2
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Copying MAC address3
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Received VLAN ID no)
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Received VLAN ID no)
Nov  5 19:54:12.595 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Received VLAN ID no)
Nov  5 19:54:12.595 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface attribute2
Nov  5 19:54:12.595 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Processing MAC chan3
Nov  5 19:54:12.595 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Processing MAC chan3
Nov  5 19:54:12.595 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Processing MAC chan3
Nov  5 19:54:12.595 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface attribute2
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Received VLAN ID no)
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Processing VLAN ID )
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Received VLAN ID no)
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Processing VLAN ID )
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Received VLAN ID no)
Nov  5 19:54:12.614 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Processing VLAN ID )
Nov  5 19:54:12.614 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface attribute2
Nov  5 19:54:12.692 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 19:54:12.692 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 19:54:12.692 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 19:54:12.692 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en8
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en1
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en2
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 19:54:12.692 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en3
Nov  5 19:54:12.749 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Completing IDB ifh:8
Nov  5 19:54:12.749 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Completing IDB ifh:1
Nov  5 19:54:12.749 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Completing IDB ifh:2
Nov  5 19:54:12.749 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Completing IDB ifh:3
Nov  5 19:54:12.749 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface not up ca8
Nov  5 19:54:12.749 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface not up ca1
Nov  5 19:54:12.749 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface not up ca2
Nov  5 19:54:12.749 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface not up ca3
Nov  5 19:54:15.567 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface MgmtEth0/n
Nov  5 19:54:15.567 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 19:54:15.567 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en0
Nov  5 19:54:15.581 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Completing IDB ifh:0
Nov  5 19:54:15.581 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: Interface not up ca0
Nov  5 19:54:15.584 ipv4_arp/slow 0/RP0/CPU0 t3  ARP-EVENT: IMP caps add succee0
Nov  5 19:54:15.793 ipv4_arp/pkt 0/RP0/CPU0 t1  ARP-EVENT: Discarding arp packe2
```

```
Nov  5 19:54:15.819 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface MgmtEth0/p
Nov  5 19:54:15.819 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 19:54:15.819 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr0
Nov  5 19:54:15.820 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 19:54:15.820 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: interface_entry (170
Nov  5 19:57:21.623 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 19:57:22.463 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received DPC for if8
Nov  5 19:57:22.531 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received DPC for if3
Nov  5 19:57:22.531 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received DPC for if2
Nov  5 19:57:22.531 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: received DPC for if1
Nov  5 19:57:29.136 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:27:42.950 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:27:42.969 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:27:43.202 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:27:54.590 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:30:38.679 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:30:38.943 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:30:45.788 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:30:46.342 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:30:46.458 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:32:57.516 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:33:38.988 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 20:33:38.988 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 20:33:38.988 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr8
Nov  5 20:33:39.065 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 20:33:39.065 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 20:33:39.065 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 20:33:39.065 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 20:33:39.065 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr3
Nov  5 20:33:39.065 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 20:33:39.065 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr2
Nov  5 20:33:39.065 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 20:33:39.065 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr1
Nov  5 20:41:37.128 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 20:41:37.144 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 21:23:17.059 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 21:23:18.347 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 21:26:41.271 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 21:30:08.361 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 21:30:08.361 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:30:08.361 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en8
Nov  5 21:30:08.367 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 21:30:08.367 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:30:08.367 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en3
Nov  5 21:30:08.373 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 21:30:08.373 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:30:08.373 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en2
Nov  5 21:30:08.381 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etn
Nov  5 21:30:08.381 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:30:08.381 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: clearing ARP AIB en1
Nov  5 21:46:04.302 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 21:46:04.302 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:46:04.302 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr8
Nov  5 21:46:04.316 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 21:46:04.316 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 21:46:04.316 ipv4_arp/fast 0/RP0/CPU0 t1  ARP-EVENT: Interface Bundle-Etp
Nov  5 21:46:04.316 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:46:04.316 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr3
Nov  5 21:46:04.316 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:46:04.316 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr2
Nov  5 21:46:04.316 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updating arp-idb ip)
Nov  5 21:46:04.316 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: adding ARP AIB entr1
Nov  5 22:39:30.728 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:32:03.427 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
```

```
Nov  5 23:32:03.625 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:33:37.230 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:33:37.765 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:35:13.706 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:35:45.392 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:43:24.043 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:45:39.659 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:56:36.519 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:56:47.521 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:56:54.402 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:57:12.595 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:57:22.204 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  5 23:57:23.449 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 00:10:29.938 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 00:15:14.864 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 00:20:46.274 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 00:22:13.307 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 00:24:17.723 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 00:25:17.797 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 02:33:04.239 ipv4_arp/pkt 0/RP0/CPU0 t1  PROBE: Timer expired on MgmtEth1
Nov  6 02:33:30.807 ipv4_arp/pkt 0/RP0/CPU0 t1  PROBE: MgmtEth0/RP0/CPU0/0 exceE
Nov  6 12:23:26.295 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 13:16:12.876 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 13:16:13.026 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 13:17:37.082 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 13:17:37.130 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 14:54:55.415 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
Nov  6 16:12:07.269 ipv4_arp/pkt 0/RP0/CPU0 t1  PROBE: Timer expired on MgmtEth1
Nov  6 16:12:35.727 ipv4_arp/pkt 0/RP0/CPU0 t1  PROBE: MgmtEth0/RP0/CPU0/0 exceE
Nov  6 17:03:53.443 ipv4_arp/pkt 0/RP0/CPU0 t1  PROBE: Timer expired on MgmtEth1
Nov  6 17:04:23.052 ipv4_arp/pkt 0/RP0/CPU0 t1  PROBE: MgmtEth0/RP0/CPU0/0 exceE
Nov  6 17:23:16.303 ipv4_arp/slow 0/RP0/CPU0 t1  ARP-EVENT: updated aib entry (0
```

Related Commands

Command	Description
show arp	Displays the ARP.

show captured packets

To display information on packets that are switched and punted in the software, use the **show captured packets** command in EXEC mode.

show captured packets {**ingress**|**egress**} [**interface** *type interface-path-id*] [**hexdump**] [**last** *number*] [**single-line**] **location** *node-id*

Syntax Description

ingress	Specifies ingress dropped packets.
egress	Specifies egress dropped packets.
interface	(Optional) Specifies an interface.
type	Interface type. For more information, use the question mark (**?**) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
hexdump	(Optional) Displays the packet contents in hex.
last *number*	(Optional) Specifies the last number of packets in the queue to display.
single-line	(Optional) Displays a one-line summary of the captured packets to facilitate the use of the include and exclude operators.
location *node-id*	Displays packet information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show captured packets** command to display information on packets that are switched and punted in the software.

The **capture software packets** command must be enabled at the interface level to use this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show captured packets** command:

```
RP/0/RP0/CPU0:router# show captured packets ingress interface tengige0/0/0/3 location
0/0/CPU0

------------------------------------------------------
packets captured on interface in ingress direction buffer overflow pkt drops:0, current:
6, non wrapping: 0 maximum: 200
------------------------------------------------------
           Wrapping entries
------------------------------------------------------
[1] Mar 22 16:30:43.797, len: 114, hits: 1, i/p i/f: TenGigE0/0/0/3
    [punt reason: IFIB]
    [ether dst: 0015.fa99.590b src: 0010.a4e6.22fc type/len: 0x800]
    [IPV4: source 172.18.2.2, dest 172.18.2.1 ihl 5, ver 4, tos 0
     id 22556, len 100, prot 1, ttl 64, sum c655, offset 0]
    00008612 51010000 abcdabcd abcdabcd abcdabcd abcdabcd abcdabcd abcdabcd
    abcdabcd abcdabcd abcdabcd abcd
```

This table describes the significant fields shown in the display.

Table 23: show captured packets Field Descriptions

Field	Description
punt reason: IFIB	Packet was switched in the software due to the Internal Forwarding Information Base (IFIB) entry.
ether	Source, destination, and type or length values in the Ethernet header.
IPV4	Depending on the type of packet, the layer 3 packet header follows.

show cfgmgr trace

To display trace information for the configuration manager (CFGMGR), use the **show cfgmgr trace** command inEXEC mode.

show cfgmgr trace

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show cfgmgr trace** command to display cfgmgr trace information.

The following lines of the **show cfgmgr trace** command output indicate that the startup configuration has started and that it has completed on the active RP:

```
Feb  6 21:28:37.145 /ltrace/cfgmgr/common 0/RP0/CPU0 t5  Startup confi
g apply requested with option '0x1'
Feb  6 21:31:30.874 /ltrace/cfgmgr/common 0/RP0/CPU0 t7  Startup confi
g done (and infra band already ready)
```

Note These traces are not present if the original active RP has ever reloaded (for example, if there have been any RP switchover events since the system first booted).

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show cfgmgr trace** command:

```
RP/0/RP0/CPU0:router#show cfgmgr trace

130 wrapping entries (2048 possible, 0 filtered, 130 total)
Apr 23 21:15:58.587 cfgmgr/common 0/RP0/CPU0 t5  Req '4': Save interface config]
Apr 23 21:15:58.707 cfgmgr/common 0/RP0/CPU0 t5  Req '4': Save node specific co]
Apr 23 21:15:59.000 cfgmgr/common 0/RP0/CPU0 t5  OIR announcement made for 'nod'
Apr 23 21:17:40.975 cfgmgr/common 0/RP0/CPU0 t5  The request queue IS NOT curred
Apr 23 21:17:40.975 cfgmgr/common 0/RP0/CPU0 t5  Process OIR save request.
Apr 23 21:17:41.040 cfgmgr/common 0/RP0/CPU0 t5  Validating 'LR' configuration ]
Apr 23 21:17:41.055 cfgmgr/common 0/RP0/CPU0 t5  Validating 'admin' configurati]
Apr 23 21:17:41.304 cfgmgr/common 0/RP0/CPU0 t5  Req '5': Save interface config]
Apr 23 21:17:41.349 cfgmgr/common 0/RP0/CPU0 t5  Req '5': Save interface config]
```

```
Apr 23 21:17:41.995 cfgmgr/common 0/RP0/CPU0 t5  Req '5': Save interface config]
Apr 23 21:17:42.041 cfgmgr/common 0/RP0/CPU0 t5  Req '5': Save interface config]
Apr 23 21:17:42.254 cfgmgr/common 0/RP0/CPU0 t5  Req '5': Save interface config]
Apr 23 21:17:42.356 cfgmgr/common 0/RP0/CPU0 t5  Req '5': Save node specific co]
Apr 23 21:17:42.580 cfgmgr/common 0/RP0/CPU0 t5  OIR announcement made for 'nod'
Apr 25 15:26:49.372 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 25 18:15:06.142 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 26 03:35:10.170 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 26 05:54:37.528 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 26 06:18:47.118 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 26 09:07:01.662 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 26 09:28:22.311 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
Apr 26 11:56:55.677 cfgmgr/common 0/RP0/CPU0 t1  Config media returned from dis.
```

Related Commands

Command	Description
show cfgmgr commitdb	Displays the contents of the commit database for the configuration manager.

show im database

To display the information stored in the shared memory database of interface manager (IM), use the **show im database** command in EXEC mode.

show im database [{**brief** | **detail** | **ifhandle** | **interface** | **summary** | **verbose** | **view**}] *interface-type interface-instance* **location** *node-id*

Syntax Description

brief	(Optional) Displays brief information about IM database.
detail	(Optional) Displays detailed information about IM database.
ifhandle	(Optional) Select a specific interface by handle.
interface	(Optional) Select a specific interface by name.
summary	(Optional) Displays IM database summary information.
verbose	(Optional) Displays verbose information about IM database.
view	(Optional) Specify a database view to filter the information based on the view
interface-type	Interface type. For more information, use the question mark (?) online help function.
interface-instance	Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. • *rack*: Chassis number of the rack. • *slot*: Physical slot number of the modular services card or line card. • *module*: Module number. A physical layer interface module (PLIM) is always 0. • *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
location *node-id*	Displays IM database information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read
interface	read

Examples

The following example shows the output of the **show im database** command:

```
RP/0/RP0/CPU0:router# show im database verbose interface null 0
Mon Nov  9 22:10:37.964 PST

View: OWN - Owner, L3P - Local 3rd Party, G3P - Global 3rd Party,
      LDP - Local Data Plane, GDP - Global Data Plane, RED - Redundancy

Node 0/RP0/CPU0 (0x201)

Interface Null0, ifh 0x00080030 (up, 1500)
  Interface flags:          0x00010097 (IFINDEX|VIRTUAL|CONFIG|VIS|DATA|CONTRO
  Encapsulation:            null
  Interface type:           IFT_NULL
  Views:                    GDP|LDP|G3P|L3P|OWN
  Control location:         0/RP0/CPU0
  Owner Private:            92 bytes
    Flags:                  <none>
    State Transitions:      1
    Dampening Config:       NO
    Shared Locks:           0
    MTU default             1500
    MTU ovh for bc/subif:   0/0
    MTU min/max:            0/0
    MTU avail/child:        0/1500
    MTU actual/notified:    1500/1500
    State (constraint):     UP (UP)
    Callback:               OWN GROUP OWNER - ID 17[-]
    Ctrl Flags:             CFG_RDY|RDY|DNLD|INTF
  Instance ID:              31
  Checkpoint:               48 bytes
  Resource in NetIO:        TRUE

  Protocol        Caps (state, mtu)
  --------        -----------------
  None            null (up, 1500)
    Views:                  LDP|G3P|L3P|OWN
    Owner Private:          92 bytes
      Flags:                <none>
      MTU min/max:          0/0
      MTU avail/child:      1500/1500
      MTU actual/notified:  1500/1500
      State (constraint):   UP (UP)
      Callback:             OWN GROUP OWNER - ID 17[-]
      Ctrl Flags:           CFG_RDY|RDY|DNLD
    Instance ID:            31
```

```
    Checkpoint:             20 bytes
    Resource in NetIO:      TRUE
    Demux limit:            0x00000000
```

This table describes the significant fields shown in the display.

Table 24: show im database Field Descriptions

Field	Description
nodeid	Identifier associated with the node.
Interface	Interface name.
Protocol	Protocol capsulations associated with the interface.
Caps (state, mtu)	Capsulation names with associated state and MTU values.

The following example shows the output of the **show im database** command:

```
RP/0/RP0/CPU0:router# show im database brief location 0/0/CPU0

View: OWN - Owner, L3P - Local 3rd Party, G3P - Global 3rd Party,
      LDP - Local Data Plane, GDP - Global Data Plane, RED - Redundancy

Node 0/0/CPU0 (0x1)

 Handle   | Name                 | State    | MTU  |#P|#C| Views             |
----------|----------------------|----------|------|--|--|-------------------|
0x01080020 FI0/0/CPU0             up          8000 11 12 GDP|LDP|L3P|OWN
0x01080060 Gi0/0/0/0              up          9212  3  3 GDP|LDP|L3P|OWN
0x01080080 Gi0/0/0/1              up          1514  3  3 GDP|LDP|L3P|OWN
0x010800a0 Gi0/0/0/2              up          1514  3  3 GDP|LDP|L3P|OWN
0x010800c0 Gi0/0/0/3              down        1514  4  4 GDP|LDP|L3P|OWN
0x010800e0 Gi0/0/0/4              up          1514  3  3 GDP|LDP|L3P|OWN
0x01080100 Gi0/0/0/5              up          1514  3  3 GDP|LDP|L3P|OWN
0x01080120 Gi0/0/0/6              up          1514  8 17 GDP|LDP|L3P|OWN
0x01080140 Gi0/0/0/7              down        1514  6  9 GDP|LDP|L3P|OWN
0x010801c0 Gi0/0/0/6.1            up          1518  4  5 GDP|LDP|L3P|OWN
0x010801e0 Gi0/0/0/6.101          up          1518  5 13 GDP|LDP|L3P|OWN
0x01080200 Gi0/0/0/6.102          up          1518  5 13 GDP|LDP|L3P|OWN
0x01080220 Gi0/0/0/6.103          up          1518  5 13 GDP|LDP|L3P|OWN
0x01080240 Gi0/0/0/6.104          up          1518  5 13 GDP|LDP|L3P|OWN
0x01080260 Gi0/0/0/6.105          up          1518  4 12 GDP|LDP|L3P|OWN
0x01080280 Gi0/0/0/6.106          up          1518  4 12 GDP|LDP|L3P|OWN
0x010802a0 Gi0/0/0/6.107          up          1518  4 12 GDP|LDP|L3P|OWN
0x010802c0 Gi0/0/0/6.108          up          1518  4 10 GDP|LDP|L3P|OWN
0x010802e0 Gi0/0/0/6.109          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080300 Gi0/0/0/6.110          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080320 Gi0/0/0/6.111          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080340 Gi0/0/0/6.112          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080360 Gi0/0/0/6.113          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080380 Gi0/0/0/6.114          up          1518  4 10 GDP|LDP|L3P|OWN
0x010803a0 Gi0/0/0/6.115          up          1518  4 10 GDP|LDP|L3P|OWN
0x010803c0 Gi0/0/0/6.116          up          1518  4 10 GDP|LDP|L3P|OWN
0x010803e0 Gi0/0/0/6.117          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080400 Gi0/0/0/6.118          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080420 Gi0/0/0/6.119          up          1518  4 10 GDP|LDP|L3P|OWN
0x01080440 Gi0/0/0/6.120          up          1518  4 10 GDP|LDP|L3P|OWN
```

```
0x01080460 Gi0/0/0/6.121          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080480 Gi0/0/0/6.122          up          1518  4  6 GDP|LDP|L3P|OWN
0x010804a0 Gi0/0/0/6.123          up          1518  4  6 GDP|LDP|L3P|OWN
0x010804c0 Gi0/0/0/6.124          up          1518  4  6 GDP|LDP|L3P|OWN
0x010804e0 Gi0/0/0/6.125          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080500 Gi0/0/0/6.126          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080520 Gi0/0/0/6.127          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080540 Gi0/0/0/6.128          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080560 Gi0/0/0/6.129          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080580 Gi0/0/0/6.130          up          1518  4  6 GDP|LDP|L3P|OWN
0x010805a0 Gi0/0/0/6.131          up          1518  4  6 GDP|LDP|L3P|OWN
0x010805c0 Gi0/0/0/6.132          up          1518  4  6 GDP|LDP|L3P|OWN
0x010805e0 Gi0/0/0/6.133          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080600 Gi0/0/0/6.134          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080620 Gi0/0/0/6.135          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080640 Gi0/0/0/6.136          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080660 Gi0/0/0/6.137          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080680 Gi0/0/0/6.138          up          1518  4  6 GDP|LDP|L3P|OWN
0x010806a0 Gi0/0/0/6.139          up          1518  4  6 GDP|LDP|L3P|OWN
0x010806c0 Gi0/0/0/6.140          up          1518  4  6 GDP|LDP|L3P|OWN
0x010806e0 Gi0/0/0/6.141          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080700 Gi0/0/0/6.142          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080720 Gi0/0/0/6.143          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080740 Gi0/0/0/6.144          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080760 Gi0/0/0/6.145          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080780 Gi0/0/0/6.146          up          1518  4  6 GDP|LDP|L3P|OWN
0x010807a0 Gi0/0/0/6.147          up          1518  4  6 GDP|LDP|L3P|OWN
0x010807c0 Gi0/0/0/6.148          up          1518  4  6 GDP|LDP|L3P|OWN
0x010807e0 Gi0/0/0/6.149          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080800 Gi0/0/0/6.150          up          1518  4  6 GDP|LDP|L3P|OWN
0x01080820 Gi0/0/0/7.1            down        1518  2  5 GDP|LDP|L3P|OWN
0x01080840 Gi0/0/0/7.2            down        1518  4  6 GDP|LDP|L3P|OWN
0x01080860 Gi0/0/0/7.3            down        1518  3  4 GDP|LDP|L3P|OWN
0x01080880 Gi0/0/0/7.4            down        1518  3  4 GDP|LDP|L3P|OWN
0x010808a0 Gi0/0/0/7.5            down        1518  3  4 GDP|LDP|L3P|OWN
0x010808c0 Gi0/0/0/7.6            down        1518  3  4 GDP|LDP|L3P|OWN
0x010808e0 Gi0/0/0/7.7            down        1518  3  4 GDP|LDP|L3P|OWN
0x01080900 Gi0/0/0/7.8            down        1518  3  4 GDP|LDP|L3P|OWN
0x01080920 Gi0/0/0/7.9            down        1518  3  4 GDP|LDP|L3P|OWN
0x01080940 Gi0/0/0/7.10           down        1518  3  4 GDP|LDP|L3P|OWN
0x01080960 Gi0/0/0/7.11           down        1518  3  4 GDP|LDP|L3P|OWN
0x01100020 Mg0/1/CPU1/0           N/A            -  0  0 GDP
0x01100040 FI0/1/CPU1             N/A            -  0  0 GDP
0x01180020 FI0/1/CPU0             N/A            -  0  0 GDP
0x01180040 Mg0/1/CPU0/0           N/A            -  0  0 GDP
0x01180030 Nu0                    N/A            -  0  0 GDP
0x01180050 En0                    N/A            -  2  2 GDP|LDP
0x01180070 En6tunnel0             N/A            -  2  2 GDP|LDP
0x01180090 Lo0                    N/A            -  0  0 GDP
0x011800b0 Lo1                    N/A            -  0  0 GDP
0x011800d0 Lo2                    N/A            -  0  0 GDP
0x011800f0 Lo3                    N/A            -  0  0 GDP
0x01180110 Lo5                    N/A            -  0  0 GDP
0x01180130 Lo6                    N/A            -  0  0 GDP
0x01180150 Lo7                    N/A            -  0  0 GDP
0x01180170 BE102                  N/A            -  0  0 GDP
0x01180190 BE1080                 N/A            -  3  4 GDP|LDP
0x011801b0 BE1083                 N/A            -  3  4 GDP|LDP
0x011801d0 BE1084                 N/A            -  3  4 GDP|LDP
0x011801f0 BE1085                 N/A            -  5 12 GDP|LDP
0x01180210 BE1085.1               N/A            -  4  6 GDP|LDP
0x01180230 BE1085.102             N/A            -  4  7 GDP|LDP
```

show imds interface brief

To display interface information for the interface manager distribution server (IMDS), use the **show imds interface brief** command in EXEC mode.

show imds interface brief

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show imds interface brief**command to display IMDS interface information. Use the command output to determine if the state, encapsulation being used, maximum transmission unit (MTU), and interface handle (ifhandle) for each interface are as expected.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show imds interface brief**command:

```
RP/0/RP0/CPU0:router show imds interface brief

IMDS BRIEF INTERFACE DATA (Node 0x201)
  handle            name           flags     state      mtu        encap
---------- ---------------------- ------ ----------- -------- ---------------
0x00080000 FINT0/RP0/CPU0          0x0007 up          8000     91 (fint_base)
0x00080010 Null0                   0x100ab up          1500     17 (null)
0x00080020 MgmtEth0/RP0/CPU0/0     0x1002f up          1514     30 (ether)
0x00080030 Loopback0               0x100ab up          1514     16 (loopback)
0x00080050 Bundle-POS24            0x104ab up          4474     14 (hdlc)
0x00080070 Bundle-Ether28          0x104ab up          1514     30 (ether)
0x00080090 Bundle-Ether28.1        0x10cab up          1500     107 (dot1q)
0x000800b0 Bundle-Ether28.2        0x10cab up          1500     107 (dot1q)
0x000800d0 Bundle-Ether28.3        0x10cab up          1500     107 (dot1q)
0x01180000 FINT0/1/CPU0            0x0007 up          8000     91 (fint_base)
0x01180020 GigabitEthernet0/1/5/0  0x1002f up          1514     30 (ether)
0x01180040 GigabitEthernet0/1/5/1  0x1002f up          1514     30 (ether)
0x01180060 GigabitEthernet0/1/5/2  0x1002f up          1514     30 (ether)
0x01180080 GigabitEthernet0/1/5/3  0x1002f admin-down  1514     30 (ether)
0x011800a0 GigabitEthernet0/1/5/4  0x1002f down        1514     30 (ether)
0x011800c0 GigabitEthernet0/1/5/5  0x1002f admin-down  1514     30 (ether)
.
.
.
0x01680480 SONET0/6/4/5            0x1006d up          10000    0 (Unknown)
```

```
0x016804a0 SonetPath0/6/4/5        0x10005 up          10000    0 (Unknown)
0x016804c0 POS0/6/4/5              0x1002f up          4474     14 (hdlc)
0x016804e0 SONET0/6/4/6            0x1006d up          10000    0 (Unknown)
0x01680500 SonetPath0/6/4/6        0x10005 up          10000    0 (Unknown)
0x01680520 POS0/6/4/6              0x1002f up          4474     14 (hdlc)
0x01680540 SONET0/6/4/7            0x1006d up          10000    0 (Unknown)
0x01680560 SonetPath0/6/4/7        0x10005 down        10000    0 (Unknown)
0x01680580 POS0/6/4/7              0x1002f admin-down  4474     14 (hdlc)
```

This table describes the significant fields shown in the display.

Table 25: show imds interface brief Field Descriptions

Field	Description
name	Interface name.
state	Interface state.
mtu	MTU associated with the interface.
encap	Base encapsulation associated with the interface.

show netio chains

To display Network Input and Output (Netio) chains information for an interface, use the **show netio chains** command in EXEC mode.

show netio chains *interface-type interface-instance* [**location** *node-id*]

Syntax Description

interface-type	Interface type. For more information, use the question mark (?) online help function.

interface-instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

location *node-id*	(Optional) Displays Netio chains information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
cisco-support	read

Example

The following example shows the output of the **show netio chains** command:

```
RP/0/RP0/CPU0:router# show netio chains gigabitEthernet 0/4/0/1

GigabitEthernet0/4/0/1 (handle: 0x05000500, nodeid 0x40) netio chains:
---------------------------------
Base decap chain:
     ether_shim           <130>  <0x79d99950, 0x0807bc84>  <       0,        0>
     ether                <30>  <0x79d7eb14, 0x08079318>  <       0,        0>


Protocol chains:
---------------
<Protocol number> (name)  Stats
  Type  Chain_node       <caps num>  <function, context> <drop pkts, drop bytes>
<7> (arp)   Stats IN: 279 pkts, 16740 bytes; OUT: 279 pkts, 11718 bytes
    Encap:
     ether_shim           <130>  <0x79d99858, 0x081c649c>  <       0,        0>
     l2_adj_rewrite       <86>  <0x7952437c, 0x081c5e4c>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
    Decap:
     arp                  <24>  <0x79a9ba14, 0x00000000>  <       0,        0>
    Fixup:
     l2_adj_rewrite       <86>  <0x795236c0, 0x081c5eb8>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
<12> (ipv4)   Stats IN: 0 pkts, 0 bytes; OUT: 48 pkts, 9578 bytes
    Encap:
     ipv4                 <26>  <0x79aa2004, 0x0816c204>  <       0,        0>
     ether                <30>  <0x79d7f634, 0x08079318>  <       0,        0>
     ether_shim           <130>  <0x79d99858, 0x081c0ebc>  <       0,        0>
     l2_adj_rewrite       <86>  <0x7952437c, 0x081c280c>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
    Decap:
     ipv4                 <26>  <0x79aa2054, 0x00000000>  <       0,        0>
    Fixup:
     l2_adj_rewrite       <86>  <0x795236c0, 0x081c2878>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
<13> (mpls)   Stats IN: 0 pkts, 0 bytes; OUT: 0 pkts, 0 bytes
    Encap:
     mpls                 <25>  <0x79bd5f7c, 0x00000000>  <       0,        0>
     ether                <30>  <0x79d7f634, 0x08079318>  <       0,        0>
     ether_shim           <130>  <0x79d99858, 0x081cf838>  <       0,        0>
     l2_adj_rewrite       <86>  <0x7952437c, 0x081cf52c>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
    Decap:
     mpls                 <25>  <0x79bd3130, 0x00000000>  <       0,        0>
    Fixup:
     l2_adj_rewrite       <86>  <0x795236c0, 0x081cf598>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
<22> (ether_sock)   Stats IN: 0 pkts, 0 bytes; OUT: 0 pkts, 0 bytes
    Encap:
     ether_sock           <98>  <0x79d80aac, 0x08079318>  <       0,        0>
     ether_shim           <130>  <0x79d99858, 0x0807bcfc>  <       0,        0>
     l2_adj_rewrite       <86>  <0x7952437c, 0x0807b9a4>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>
```

```
    Decap:
     ether_sock           <98>  <0x79d80ca8, 0x08079318>  <       0,        0>
    Fixup:
     l2_adj_rewrite       <86>  <0x795236c0, 0x0807ba10>  <       0,        0>
     txm_nopull           <60>  <0x79516cd0, 0x0817cbd8>  <       0,        0>


Protocol SAFI counts:
--------------------

       Protocol        SAFI       Pkts In    Bytes In    Pkts Out   Bytes Out
---------------  ----------    ----------  ----------  ----------  ----------
           ipv4     Unicast      24330016      233944        8412          41
           ipv4   Multicast          3240          60           0           0
           ipv4   Broadcast             0           0           0           0
           ipv6     Unicast             0           0           0           0
           ipv6   Multicast             0           0           0           0


Node drop accounting:
---------------------
No drops
```

Related Commands

Command	Description
show netio clients	Displays Netio clients information.
show netio db	Displays Netio database information.
show netio idb	Displays Netio IDB information.
show netio media registrations	Displays protocol registrations for media changes.
show netio subblock	Displays Netio subblock information.
show netio trace	Displays Netio trace data.

show netio clients

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

show netio clients [**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Displays Netio clients information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
cisco-support	read

The following example shows the output of the **show netio clients** command:

```
RP/0/RP0/CPU0:router# show netio clients location 0/3/2

XIPC: OutputQ [0:0]/[6000] HighOutputQ [0:18]/[2000] PuntbackQ [0:0]/[6000]
XIPC drops/total: OutputQ: 0/0 HighOutputQ: 0/15682677 PuntbackQ: 0/0
Counters (error/total): Output (0/15682677) Puntback (0/0) Jump (0/0)

                    Input              Punt         XIPC InputQ      XIPC PuntQ
ClientID         Drop/Total        Drop/Total      Cur/High/Max    Cur/High/Max
-------------------------------------------------------------------------------
ipv6_icmp           0/0               0/0             0/0/1000        0/0/1000
icmp                0/0               0/0             0/0/1000        0/0/1000
clns                0/0               0/0           L 0/0/1000        0/0/0
                                                    H 0/0/1000
chdlc_socket        0/802651          0/0             0/2/1000        0/0/0
fr_socket           0/4454002         0/0             0/6/2000        0/0/0
pre_route           0/0               0/0             0/0/1024        0/0/1024
ipv6_io             0/0               0/0             0/0/1000        0/0/1000
ipv6_nd             0/0               0/0             0/0/1000        0/0/1000
l2snoop             0/0               0/0             0/0/1000        0/0/0
icmpv6_unreach_jump        0/0               0/0
```

```
arp                 0/0              0/0              0/0/1000         0/0/1000
ppp                 0/10432525       0/0              0/17/1000        0/0/0
mpls_io             0/0              0/0              0/0/1000         0/0/1000
ipv4                0/0              0/0              0/0/1000         0/0/1000
ipv6                0/0              0/0              0/0/1000         0/0/1000

Key:
  L = queue for lower priority packets
  H = queue for higher priority packets
```

Related Commands

Command	Description
show netio chains	Displays Netio chains information.
show netio db	Displays Netio database information.
show netio idb	Displays Netio IDB information.
show netio media registrations	Displays protocol registrations for media changes.
show netio subblock	Displays Netio subblock information.
show netio trace	Displays Netio trace data.

show netio db

To display Network Input and Output (Netio) database information for an interface, use the **show netio db** command in EXEC mode.

show netio db {**caps** | **dll name***dll-name* | **proto**} [**location** *node-id*]

Syntax Description

caps	Displays the capsulations in the Netio database.
dll	Displays the dlls loaded in the Netio database.
name*dll-name*	(Optional) Specifies a DLL name.
proto	Displays the protocol in the Netio database.
location *node-id*	(Optional) Displays Netio database information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
cisco-support	read

The following example shows the output of the **show netio db** command.

```
RP/0/RP0/CPU0:router# show netio db caps location 0/1/0

Capsulation (ID)               Load Count  DLL Name                      Refcount
chdlc(13)                               1 libchdlc_netio.dll                   3
hdlc(14)                                2 libchdlc_netio.dll                   3
clns(15)                                2 libclns_netio.dll                    2
ipv4_acl_in(22)                         1 libipv4_netio_acl_filter.dll         2
ipv4_acl_out(23)                        1 libipv4_netio_acl_filter.dll         2
arp(24)                                 1 libipv4_netio.dll                    6
mpls(25)                               22 libmpls_netio.dll                    3
ipv4(26)                               18 libipv4_netio.dll                    6
```

```
pim_enc(28)                    2 libpim_encaps_netio.dll          1
pim_null(29)                   5 libpim_null_netio.dll            1
ether(30)                      2 libether_netio.dll               3
mpls_te(36)                   32 libmpls_netio.dll                3
txm_nopull(60)                67 libsched_netio.dll               1
lpts(81)                       2 liblpts_netio.dll                2
ipv6(82)                       2 libipv6_netio.dll                5
l2_adj_rewrite(86)            67 libl2_adj_netio.dll              1
ipv6_preswitch(90)             1 libipv6_netio.dll                5
fint_base(91)                 10 libfint_netio.dll                1
fint_n2n(92)                   2 libfint_n2n.dll                  2
ether_sock(98)                 2 libether_netio.dll               3
ipv6_pfilter_in(102)           1 libipv6_netio_pfilter.dll        2
ipv6_pfilter_out(103)          1 libipv6_netio_pfilter.dll        2
netio_debug(110)               1 libnetio_debugnode.dll           1
ipv4_preroute(115)             2 libipv4_netio.dll                6
fint_l2transport(125)          2 libl2fib_netio.dll               2
ipv6_preroute(128)             2 libipv6_netio.dll                5
ether_shim(130)                4 libether_shim_netio.dll          1
pos_shim(132)                  3 libpos_shim_netio.dll            1
fint_caps_tp(134)              2 libfint_netio_tp.dll             2
```

Related Commands

Command	Description
show netio chains	Displays Netio chains information.
show netio clients	Displays Netio clients information.
show netio idb	Displays Netio IDB information.
show netio media registrations	Displays protocol registrations for media changes.
show netio subblock	Displays Netio subblock information.
show netio trace	Displays Netio trace data.

show netio idb

To display network input and output (Netio) interface descriptor block (IDB) information for an interface, use the **show netio idb** command in EXEC mode.

show netio idb {*interface-type interface-instance*} [**location** *node-id*]

Syntax Description

interface-type	Interface type. For more information, use the question mark (?) online help function.

interface-instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

location *node-id*	(Optional) Displays Netio IDB information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.8.0	Changed the *interface-type interface-instance* arguments to required ones.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines

Use the **show netio idb**command to display control plane information for the software switching path. The output provides useful statistics for determining software forwarding issues.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show netio idb** command:

```
RP/0/RP0/CPU0:router# show netio idb tenGigE 0/1/1/0 location 0/1/cpu0

TenGigE0/1/1/0 (handle: 0x01180020, nodeid:0x11) netio idb:
---------------------------------
name:                    TenGigE0_1_1_0
interface handle:        0x01180020
interface global index:  2
physical media type:     30
dchain ptr:              <0x482ae8e0>
echain ptr:              <0x482d791c>
fchain ptr:              <0x482d79b8>
driver cookie:           <0x4824ad58>
driver func:             <0x4824ad44>
number of subinterfaces: 4096
subblock array size:     3
DSNCNF:                  0x00000000
interface stats info:
   IN  unknown proto pkts:  0
   IN  unknown proto bytes: 0
   IN  multicast pkts:      0
   OUT multicast pkts:      0
   IN  broadcast pkts:      0
   OUT broadcast pkts:      0
   IN  drop pkts:           0
   OUT drop pkts:           0
   IN  errors pkts:         0
   OUT errors pkts:         0

Chains
--------------------
Base decap chain:
     ether               <30>  <0xfd7aef88, 0x48302824>  <       0,        0>

Protocol chains:
---------------
<Protocol number> (name)  Stats
  Type  Chain_node       <caps num>  <function, context> <drop pkts, drop bytes>
<7> (arp)   Stats IN: 0 pkts, 0 bytes; OUT: 0 pkts, 0 bytes

    Encap:
     l2_adj_rewrite       <86>  <0xfcec7a88, 0x4834efec>  <       0,        0>
     queue_fifo           <56>  <0xfcedda68, 0x482dbee4>  <       0,        0>
     txm_nopull           <60>  <0xfcea2a5c, 0x482dc11c>  <       0,        0>
    Decap:
     queue_fifo           <56>  <0xfcedda4c, 0x482dbee4>  <       0,        0>
     arp                  <24>  <0xfd1082cc, 0x00000000>  <       0,        0>
    Fixup:
     l2_adj_rewrite       <86>  <0xfcec745c, 0x00000000>  <       0,        0>
     queue_fifo           <56>  <0xfcedda68, 0x482dbee4>  <       0,        0>
     txm_nopull           <60>  <0xfcea2a5c, 0x482dc11c>  <       0,        0>
<12> (ipv4)   Stats IN: 0 pkts, 0 bytes; OUT: 0 pkts, 0 bytes
    Encap:
     ipv4                 <26>  <0xfd10f41c, 0x482d7724>  <       0,        0>
     ether                <30>  <0xfd7aeb44, 0x48302824>  <       0,        0>
     l2_adj_rewrite       <86>  <0xfcec7a88, 0x4834f104>  <       0,        0>
```

```
     queue_fifo           <56>  <0xfcedda68, 0x482dbee4>  <       0,         0>
     txm_nopull           <60>  <0xfcea2a5c, 0x482dc11c>  <       0,         0>
    Decap:
     queue_fifo           <56>  <0xfcedda4c, 0x482dbee4>  <       0,         0>
     ipv4                 <26>  <0xfd10f474, 0x00000000>  <       0,         0>
    Fixup:
     l2_adj_rewrite       <86>  <0xfcec745c, 0x00000000>  <       0,         0>
     queue_fifo           <56>  <0xfcedda68, 0x482dbee4>  <       0,         0>
     txm_nopull           <60>  <0xfcea2a5c, 0x482dc11c>  <       0,         0>
<22> (ether_sock)   Stats IN: 0 pkts, 0 bytes; OUT: 0 pkts, 0 bytes
    Encap:
     ether_sock           <98>  <0xfd7b1630, 0x48302824>  <       0,         0>
     l2_adj_rewrite       <86>  <0xfcec7a88, 0x48304c1c>  <       0,         0>
     queue_fifo           <56>  <0xfcedda68, 0x482dbee4>  <       0,         0>
     txm_nopull           <60>  <0xfcea2a5c, 0x482dc11c>  <       0,         0>
    Decap:
     queue_fifo           <56>  <0xfcedda4c, 0x482dbee4>  <       0,         0>
     ether_sock           <98>  <0xfd7b1874, 0x48302824>  <       0,         0>
    Fixup:
     l2_adj_rewrite       <86>  <0xfcec745c, 0x00000000>  <       0,         0>
     queue_fifo           <56>  <0xfcedda68, 0x482dbee4>  <       0,         0>
     txm_nopull           <60>  <0xfcea2a5c, 0x482dc11c>  <       0,         0>


Protocol SAFI counts:
--------------------

       Protocol        SAFI       Pkts In    Bytes In    Pkts Out   Bytes Out
---------------  ----------    ----------  ----------  ----------  ----------
           ipv4     Unicast             0           0           0           0
           ipv4   Multicast             0           0           0           0
           ipv4   Broadcast             0           0           0           0
           ipv6     Unicast             0           0           0           0
           ipv6   Multicast             0           0           0           0
```

This table describes the significant fields shown in the display.

Table 26: show netio idb Field Descriptions

Field	Description
name	Netio name associated with the interface.
interface handle	Value assigned to the interface by the netio for identification.
IN unknown proto pkts	Number of packets sent to netio that had an unknown protocol type.
IN unknown proto bytes	Number of bytes sent to netio that had an unknown protocol type.
IN multicast pkts	Number of ingress multicast packets for the interface.
OUT multicast pkts	Number of egress multicast packets for the interface.
IN broadcast pkts	Number of ingress broadcast packets for the interface.
OUT broadcast pkts	Number of egress broadcast packets for the interface.
IN drop pkts	Number of ingress dropped packets for the interface.
OUT drop pkts	Number of egress dropped packets for the interface.

Field	Description
IN errors pkts	Number of ingress errored packets for the interface.
OUT errors pkts	Number of egress errored packets for the interface.
Base decap chain	Lowest-level decap chain assigned to the interface.
Protocol chains	Layer 3 protocol chains assigned to the interface.
Type	Layer 3 protocol type.
drop pkts, drop bytes	Dropped packet and byte counters associated with the protocol.
Endcap	Processing steps in the encap chain.
Decap	Processing steps in the decap chain.
Fixup	Processing steps in the fixup chain.
Protocol SAFI counts	Unicast or multicast counts associated with the protocol.
Protocol	Protocol type.
SAFI	Secondary address family identifier type.
Pkts In	Number of packets in for the address family.
Bytes In	Number of bytes in for the address family.
Pkts Out	Number of packets out for the address family.
Bytes Out	Number of bytes out for the address family.

Related Commands

Command	Description
show netio chains	Displays Netio chains information.
show netio clients	Displays Netio clients information.
show netio db	Displays Netio database information.
show netio media registrations	Displays protocol registrations for media changes.
show netio subblock	Displays Netio subblock information.
show netio trace	Displays Netio trace data.

show netio media-registrations

To display Network Input and Output (Netio) protocol registrations for media changes, use the **show netio media-registrations** command in EXEC mode.

show netio media-registrations[**location** *node-id*]

Syntax Description

location *node-id*	(Optional) Displays Netio protocol registrations for media changes for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
cisco-support	read

The following example shows the output of the **show netio media-registrations** command:

```
RP/0/RP0/CPU0:router# show netio media-registrations location 0/2/0

Registrations by L3 for media (change/upgrade) changes
L3 Protocol      Callback    L2 Media
-----------------------------------------
clns             0x795f978c  atm_mux_vc
                             atm_nlpid_vc
                             atm_snap_vc
                             atm_sub
                             dot1q
                             ether
                             fint_base
                             fr_sub_base
                             fr_vc_base
                             hdlc
                             srp
ipv4             0x79af58e8  atm_mux_vc
                             atm_nlpid_vc
                             atm_snap_vc
                             atm_sub
```

```
                                dot1q
                                ether
                                fint_base
                                fr_sub_base
                                fr_vc_base
                                hdlc
                                srp
ipv6                0x796a45e8  atm_mux_vc
                                atm_nlpid_vc
                                atm_snap_vc
                                atm_sub
                                dot1q
                                ether
                                fint_base
                                fr
                                hdlc
                                srp
mpls                0x79c66d14  atm_nlpid_vc
                                atm_snap_vc
                                atm_sub
                                dot1q
                                ether
                                fint_base
                                hdlc
                                ppp
                                srp
lpts                0x79563174  fint_base
ipv6_preroute       0x796a456c  fint_base
```

Related Commands

Command	Description
show netio chains	Displays Netio chains information.
show netio clients	Displays Netio clients information.
show netio db	Displays Netio database information.
show netio idb	Displays Netio IDB information.
show netio subblock	Displays Netio subblock information.
show netio trace	Displays Netio trace data.

show netio subblock

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

show netio subblock {**idb** {*interface-typeinterface-instance*} | **registrations** } [**location** *node-id*]

Syntax Description

idb	Displays subblock information for an interface.
registrations	Displays all the registered subblocks.
interface-type	Interface type. For more information, use the question mark (?) online help function.

interface-instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

location *node-id*	(Optional) Displays Netio subblock information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
cisco-support	read

The following example shows the output of the **show netio subblock** command:

```
RP/0/RP0/CPU0:router# show netio subblock registrations location 0/2/2

Feature Name      Subblock List  Destroy Func           Handle
  <subblock addr> <intf handle>  <intf name>            <refcnt>
----------------  -------------  ---------------------  --------
ipv6-switch       0x0811cbfc     0x796ae090                    1
    <0x0806a6b0> <0x03000100>   <FINT0_2_CPU0          > <     3>
ether-caps        0x08198ba0     0x79f350b4                    2
    <0x0807aa44> <0x03000600>   <FastEthernet0_2_2_0   > <     3>
    <0x0807aa88> <0x03000700>   <FastEthernet0_2_2_1   > <     3>
    <0x0807aacc> <0x03000800>   <FastEthernet0_2_2_2   > <     3>
    <0x081c2758> <0x03000900>   <FastEthernet0_2_2_3   > <     3>
    <0x081c279c> <0x03000a00>   <FastEthernet0_2_2_4   > <     3>
    <0x081c27e0> <0x03000b00>   <FastEthernet0_2_2_5   > <     3>
    <0x081c2824> <0x03000c00>   <FastEthernet0_2_2_6   > <     3>
    <0x081c2868> <0x03000d00>   <FastEthernet0_2_2_7   > <     4>
fr_control_vc_base_caps  0x081bdf6c     0x7a0209c8                    3
    <0x081c2978> <0x03001a00>   <POS0_2_0_0.0_vc_0     > <     2>
    <0x081c29bc> <0x03001b00>   <POS0_2_0_1.0_vc_0     > <     2>
    <0x081c2a00> <0x03001c00>   <POS0_2_0_0.0_vc_1023  > <     2>
    <0x081c2a44> <0x03001d00>   <POS0_2_0_1.0_vc_1023  > <     2>
fr_vc_base_caps   0x08206424     0x7a020890                    4
    <0x081c2a88> <0x03001e00>   <POS0_2_0_0.1          > <     2>
    <0x081c2acc> <0x03001f00>   <POS0_2_0_1.1          > <     2>
```

Related Commands

Command	Description
show netio chains	Displays Netio chains information.
show netio clients	Displays Netio clients information.
show netio db	Displays Netio database information.
show netio idb	Displays Netio IDB information.
show netio media registrations	Displays protocol registrations for media changes.
show netio trace	Displays Netio trace data.

show netio trace

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

show netio trace {**all** | **chains** | **control** | **dpc** | **error** | **interface** | **LC** | **packet**} [{*filehexdumplastlocationreversestatstailfuniqueverbosewrapping*}]

Syntax Description

all	Displays all Netio trace data
chains	Displays Netio chains trace data
control	Displays Netio control trace data
dpc	Displays Netio DPC trace data
error	Displays Netio error trace data
interface	Displays Netio interface trace data
LC	Displays Netio trace information for LC processes data
packet	Displays Netio packet drop error messages trace data
file	(Optional) A specific file name traces in hexadecimal
hexdump	(Optional) Display traces in hexadecimal
last	(Optional) Displays the last n entries
location	(Optional) Displays the card location
reverse	(Optional) Displays the latest traces first
stats	(Optional) Displays statistics
tailf	(Optional) Displays new traces as added
unique	(Optional) Displays unique entries with counts
verbose	(Optional) Displays internal debugging information

wrapping	(Optional) Displays wrapping entries

Command Default No default behavior or values.

Command Modes EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.
Release 3.9.0	No modifications.
Release 4.0.0	No modifications.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
cisco-support	read

The following example shows the output of the **show netio trace** command:

```
RP/0/RP0/CPU0:router# show netio trace chains stats location 0/0/CPU0

/net/node0_0_CPU0/dev/shmem/ltrace/netio/chains--- wrapping: inf Mbytes/sec for 1024 entries
361 wrapping entries (1024 possible, 0 filtered, 361 total)
Jan 11 15:04:14.695 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 0 (base), caps 91 (fint_base), op ADD, chain BD, data len 0
Jan 11 15:04:15.070 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 81 (lpts), op ADD, chain D, data len 4
Jan 11 15:04:16.265 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 86 (l2_adj_rewrite), op ADD, chain E, data len 0
Jan 11 15:04:16.274 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 60 (txm_nopull), op ADD, chain E, data len 0
Jan 11 15:04:16.542 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 86 (l2_adj_rewrite), op ADD, chain F, data len 0
Jan 11 15:04:16.542 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 60 (txm_nopull), op ADD, chain F, data len 0
Jan 11 15:04:16.542 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 91 (fint_base), op ADD, chain E, data len 0
Jan 11 15:04:16.542 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 18 (lpts), caps 81 (lpts), op ADD, chain E, data len 4
Jan 11 15:04:16.562 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 6 (fint_n2n), caps 92 (fint_n2n), op ADD, chain D, data len 0
Jan 11 15:04:16.646 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 6 (fint_n2n), caps 86 (l2_adj_rewrite), op ADD, chain E, data len 0
Jan 11 15:04:16.646 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
```

```
0x01000100, prot
o 6 (fint_n2n), caps 60 (txm_nopull), op ADD, chain E, data len 0
Jan 11 15:04:16.646 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 6 (fint_n2n), caps 86 (l2_adj_rewrite), op ADD, chain F, data len 0
Jan 11 15:04:16.646 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 6 (fint_n2n), caps 60 (txm_nopull), op ADD, chain F, data len 0
Jan 11 15:04:16.646 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
o 6 (fint_n2n), caps 91 (fint_base), op ADD, chain E, data len 0
Jan 11 15:04:16.646 netio/chains--- 0/0/CPU0 t1  Chains: update IDB chain, ifhandle
0x01000100, prot
.
.
.
```

Command	Description
show netio chains	Displays Netio chains information.
show netio clients	Displays Netio clients information.
show netio db	Displays Netio database information.
show netio idb	Displays Netio IDB information.
show netio media registrations	Displays protocol registrations for media changes.
show netio subblock	Displays Netio subblock information.

show sysdb connections

To display the client connection information for the system database (SYSDB), use the **show sysdb connections** command in EXEC mode.

show sysdb connections [{**detail** | **job** | **path** | **location** | **shared-plane**}]

Syntax Description

detail	(Optional) Displays the detailed client connection information.
job *job-id*	(Optional)Specify a Job ID.
path*path-filter*	(Optional) Specify a path filter.
location *node-id*	(Optional)Specify a location. The *node-id* argument is entered in the *rack/slot/module* notation.
shared-plane	(Optional) Displays the shared-plane data.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
sysmgr	read
cisco-support	read

Examples

The following example shows the output of the **show sysdb connections** command.

```
RP/0/RP0/CPU0:router# show sysdb connections detail location 0/1/CPU0

SysDB Connections:
  "/debug/node/11/LR/sysdb/client/"
  From:      shmwin_svr (jid 76, nid 0/1/CPU0, tid 1)
  Connid:    00000001 Refcount: 0002 Options:   00000032
  Connected:        Y In trans:    N Verf susp:        N
  Client connid: 00000000
  Connected at: Jul 14 19:31:47.304
  "/debug/node/11/LR/packet/"
  From:      packet (jid 218, nid 0/1/CPU0, tid 1)
  Connid:    00000002 Refcount: 0002 Options:   00000032
  Connected:        Y In trans:    N Verf susp:        N
  Client connid: 00000000
  Connected at: Jul 14 19:31:47.305
```

```
  "/debug/node/11/LR/cdm/qsm/"
  From:      qsm (jid 246, nid 0/1/CPU0, tid 4)
  Connid:    00000003 Refcount: 0002 Options:   00000032
  Connected:        Y In trans:    N Verf susp:        N
  Client connid: 00000000
  Connected at: Jul 14 19:31:47.305
  "/debug/node/11/LR/eem/"
  From:      wdsysmon (jid 361, nid 0/1/CPU0, tid 5)
  Connid:    00000005 Refcount: 0002 Options:   00000032
  Connected:        Y In trans:    N Verf susp:        N
Client connid: 00000000
  Connected at: Jul 14 19:31:47.316
  "/debug/node/11/LR/sysmgr/"
  From:      sysmgr (jid 79, nid 0/1/CPU0, tid 7)
  Connid:    00000013 Refcount: 0002 Options:   00000032
...
```

show sysdb trace verification location

To display trace verification information for the system database (SYSDB), use the **show sysdb trace verification location** command in EXEC mode.

show sysdb trace verification location *node-id*

Syntax Description

node-id	Specific node. The *node-id* argument is entered in the *rack*/*slot*/*module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show sysdb trace verification shared-plane location** command to display details of recent verification sysDB transactions and changes on local plane configurations. The command output allows you to confirm that configuration were verified and accepted.

Task ID

Task ID	Operations
sysmgr	read
cisco-support	read

Examples

The following example shows the output of the **show sysdb trace verification shared-plane location** command. The output shows that changes to the SysDB local plane were verified and accepted.

```
RP/0/RP0/CPU0:router# show sysdb trace verification location 0/3/CPU0

Timestamp             jid       tid   reg handle  connid     action
              path
323 wrapping entries (4096 possible, 299 filtered, 622 total)
Jul  7 20:10:36.212      260       1     90       8782       apply reply
              '--'
Jul  7 20:10:35.476      260       1     90       4912       Apply/abort called
              'cfg/if/act/GigabitEthernet0_3_4_0.1/a/sub_vlan/0x2/________/Gigab
itEthernet0_3_4_0/________'
Jul  7 20:10:35.475      260       1     90       4912       verify reply: accep
t             '--'
Jul  7 20:10:35.471      260       1     90       4912       Verify called
              'cfg/if/act/GigabitEthernet0_3_4_0.1/a/sub_vlan/0x2/________/Gigab
itEthernet0_3_4_0/________'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
              '--'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
              '--'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
              '--'
```

```
Jul  7 20:10:35.471      144       1     4        8782       apply reply
                '--'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
                '--'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
                '--'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
                '--'
Jul  7 20:10:35.471      144       1     4        8782       apply reply
                '--'
Jul  7 20:10:35.470      144       1     4        474        Apply/abort batch e
nded            ''
Jul  7 20:10:35.470      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_0/ord_x/im/shutdown'
Jul  7 20:10:35.470      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_1/ord_x/im/shutdown'
Jul  7 20:10:35.470      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_2/ord_x/im/shutdown'
Jul  7 20:10:35.470      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_3/ord_x/im/shutdown'
Jul  7 20:10:35.470      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_4/ord_x/im/shutdown'
Jul  7 20:10:35.469      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_5/ord_x/im/shutdown'
Jul  7 20:10:35.469      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_6/ord_x/im/shutdown'
Jul  7 20:10:35.469      144       1     4        474        Apply/abort called
                'cfg/if/act/GigabitEthernet0_3_4_7/ord_x/im/shutdown'
Jul  7 20:10:35.469      144       1     4        474        Apply/abort batch s
tarted          ''
Jul  7 20:10:35.469      144       1     4        474        verify reply: accep
t               '--'
Jul  7 20:10:35.469      144       1     4        474        verify reply: accep
t               '--'
Jul  7 20:10:35.469      144       1     4        474        verify reply: accep
t               '--'
!
!
!
```

This table describes the significant fields shown in the display.

Table 27: show sysdb trace verification location Field Descriptions

Field	Description
Timestamp	Time of the verification.
jid	Job identifier of the verification.
tid	Thread identifier.
reg handle	Registration handle.
connid	Connection identifier.
action	Action occurring between the sysDB server and client.
apply reply	SysDB notification that the client that an apply action has occurred.
Apply/abort called	SysDB notification for the client that an apply or process termination has been initiated.

Field	Description
verify reply: accept	Verifier has accepted the verification request.

Related Commands

Command	Description
show sysdb connection path shared-plane	Displays system database client connection shared plane data for a specific path.

show sysdb trace verification shared-plane

To display trace verification information for the system database (SYSDB), use the **show sysdb trace verification shared-plane**command in EXEC mode.

show sysdb trace verification shared-plane [{**file** | **hexdump** | **last** | **location** | **reverse** | **stats** | **tailf** | **unique** | **verbose** | **wrapping**}]

Syntax Description

file	(Optional) Specifies the name of a file.
hexdump	(Optional) Displays the packet contents in hexadecimal format.
last	(Optional) Specifies the last number of packets in the queue to display.
location	(Optional) Displays the card location.
reverse	(Optional) Specifies the new traces as they are added.
stats	(Optional) Displays trace statistics information.
tailf	(Optional) Displays new traces as they are added.
unique	(Optional) Displays a list of unique entries with counts.
verbose	(Optional) Displays internal debugging information.
wrapping	(Optional) Displays wrapping entries of all trace information.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.8.0	All optional arguments were added with their descriptions.

Usage Guidelines

Use the **show sysdb trace verification shared-plane** command to display details of recent verification sysDB transactions and changes on the shared plane. The command output allows you to confirm whether the configuration was verified correctly.

Specifying a path using the | **include** keyword and *path* argument filters the data to display only the sysDB path for the router. Use the **describe** command to determine the path.

Task ID

Task ID	Operations
sysmgr	read
cisco-support	read

Examples

The following example shows the output of the **show sysdb trace verification shared-plane**command. The output shows that changes to the SysDB shared plane were verified and accepted.

```
RP/0/RP0/CPU0:router# show sysdb trace verification shared-plane | include gl/a/hostname

May 18 19:16:17.143      340       3     210      962        Apply/abort called
              'cfg/gl/a/hostname'
May 18 19:16:17.132      340       3     210      962        Verify called
              'cfg/gl/a/hostname'
May 18 19:16:17.126      340       3     210      962        Apply/abort called
              'cfg/gl/a/hostname'
May 18 19:16:17.109      340       3     210      962        Verify called
              'cfg/gl/a/hostname'
May 18 18:43:16.065      340       3     210      962        register
              'cfg/gl/a/hostname'
May 18 18:41:41.048      340       3     16       362        register
              'cfg/gl/a/hostname'
```

This table describes the significant fields shown in the display.

Table 28: show sysdb trace verification shared-plane Field Descriptions

Field	Description
Apply/abort called	SysDB server has either applied or terminated the action requiring verification.
Verify called	Client has issued a verify request to the sysDB server.
register	Client has registered with sysDB server for verification.

Related Commands

Command	Description
show sysdb connection path shared-plane	Displays sysDB client connection shared plane data for a specific path.

show tbm hardware

To displays tree bitmap hardware-related information, use the **show tbm hardware** command in EXEC mode.

show tbm hardware {**ipv4** | **ipv6** | **mpls** | **vpnv4** | **table-id** | **afi-all** | **sw-only** | **dual** | **egress** | **ingress**} {**unicast** | **multicast** | **safi-all**} {**dual** | **egress** | **ingress** | **sw-only**} {**brief** | **detail** | **lookup** | **prefix** **prefix-hex-string**} **location** *node-id*

Syntax Description

ipv4	Specifies IP Version 4 address prefixes.
ipv6	Specifies IP Version 6 address prefixes.
mpls	Specifies MPLS-related tree bitmap information.
vpnv4	Specifies VPNv4-related tree bitmap information.
table-id	Specifies tree bitmap information for a specific table ID.
afi-all	Specifies IPv4 and IPv6 commands.
sw-only	Specifies software-only tree bitmap information.
dual	Specifies tree bitmap information for dual, ingress, and egress, modes.
egress	Specifies egress tree bitmap information.
ingress	Specifies ingress tree bitmap information.
unicast	Specifies unicast address prefixes.
multicast	Specifies multicast address prefixes. This option is supported for IPv4 address families.
safi-all	For subaddress family, specifies prefixes for all subaddress families. This option is supported for IPv4 address families.
dual	Specifies ingress and egress tree bitmap information.
brief	Displays brief information.
detail	Displays detailed information.
lookup	Displays key or address information to look up (longest match) in the table.
prefix	Displays prefix-related information.
location *node-id*	Displays tree bitmap hardware-related information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show tbm hardware**command to display hardware-related ingress and egress information for the tree bitmap.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show tbm hardware** command:

```
RP/0/RP0/CPU0:router# show tbm hardware ipv4 unicast dual detail location 0/6/cpu0

TBM Table Type: IPv4 Unicast
------------------------------
TBM: number of pulses: 71
TBM: number of Err fix attempts: 0
     No current failures
Past failures: leaf(0), mem(0), mipc(0), flush_mipc(0)
               post_compact(0), pre_compact(0)

PLU Bucket Statistics:
------------------------------
     Bucket 0: 44
     Bucket 1: 44
     Bucket 2: 327
     Bucket 3: 44
     Bucket 4: 44
     Bucket 5: 43
     Bucket 6: 43
     Bucket 7: 45

Ingress PLU Info
----------------
    PLU: Num Writes : 3064
    PLU: Num Copies : 2197

    PLU Memory Channel Statistics:
    ------------------------------
      Number of compactions: 0
         FCRAM0 Chan:      110 (Pages: 5, 1% used)
         FCRAM1 Chan:      125 (Pages: 8, 0% used)
         FCRAM2 Chan:      127 (Pages: 8, 0% used)
         FCRAM3 Chan:      148 (Pages: 8, 0% used)
         FCRAM4 Chan:      124 (Pages: 8, 0% used)

Egress PLU Info
----------------
    PLU: Num Writes : 3064
    PLU: Num Copies : 2197

    PLU Memory Channel Statistics:
    ------------------------------
      Number of compactions: 0
         FCRAM0 Chan:      110 (Pages: 5, 1% used)
         FCRAM1 Chan:      125 (Pages: 8, 0% used)
```

```
FCRAM2 Chan:      127 (Pages: 8, 0% used)
FCRAM3 Chan:      148 (Pages: 8, 0% used)
FCRAM4 Chan:      124 (Pages: 8, 0% used)
```

This table describes the significant fields shown in the display.

Table 29: show tbm hardware Field Descriptions

Field	Description
Past failures	Number of times there was a failure in programming hardware.
PLU: Num Writes	Number of writes to the PLU portion of the hardware.
PLU: Num Copies	Number of copies to the PLU portion of the hardware.
PLU Memory Channel Statistics	Usage levels of each channel in the PLU memory.

show uidb data

To display index data information for the micro-interface descriptor block (uIDB), use the **show uidb data**command in EXEC mode.

show uidb data [**shadow**] [{**ingress** | **egress**}] [*interface-type interface-instance*] **location** *node-id*

Syntax Description

shadow	(Optional) Displays uIDB data from shadow copy Route Skill Mapping (RSM) instead of Metro HW.
ingress	(Optional) Displays ingress PSE-related information.
egress	(Optional) Displays egress PSE-related information.
interface-type	(Optional) Interface type. For more information, use the question mark (?) online help function.

interface-instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

location *node-id*	(Optional) Displays micro-IDB index data information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.5.0	Index and operation modes were not supported.

Release	Modification
Release 3.7.0	The following keywords were added: • **shadow** • **ingress** • **egress**

Usage Guidelines

Use the **show uidb index** command to display micro-IDB index data information including, from a software perspective, features that are enabled on a selected interface.

Task ID

Task ID	Operations
cisco-support	read

Examples

```
RP/0/RP0/CPU0:router# show uidb data bundle-ether 1 location 0/1/cpu0

------------------------------------------------------------------------------
  Location = 0/1/CPU0
  Ifname/Ifhandle = Bundle-Ether1 / 0x80070
  Index = 15
  Pse direction = INGRESS
  ============================================
  *     (Not programmed in hardware)    *
  --------------------------------------------
  RSM STATUS: 0x7c000000
  -> used: 0x1f
  ->dirty: 0x00
  ->badck: 0x00
  -> prog: DONE
  ->count: 0
  --------------------------------------------
  TUNNEL IFHANDLE: 0
  L2 ENCAP: 3
  ============================================

  General 16 bytes:
  -------------------------
  IFHANDLE: 0x8007
  STATUS: 1
  ISSU State: 0
  IPV4 ENABLE: 0
  IPV6 ENABLE: 0
  MPLS ENABLE: 0
  STATS POINTER: 0x7ff48
  SPRAYER QUEUE: 46
  IPV4 MULTICAST: 0
  IPV6 MULTICAST: 0
  USE TABLE ID IPV4: 0
  USE TABLE ID IPV6: 0
  USE TABLE ID MPLS: 0
  TABLE ID: 0
  QOS ENABLE: 0
  QOS ID: 0
  NETFLOW SAMPLING PERIOD: 0
  L2 PKT DROP: 0
  L2 QOS ENABLE: 0
  BUNDLE IFHANDLE: 1
```

```
  SRC FWDING: 0
  *[CHECKSUM]*: 0x12ee9a

  IPv4 and MPLS 16 bytes:
  -----------------------
  IPV4 ICMP PUNT: 1
  IPV4 NETFLOW SAMPLING ENABLE: 0
  IPV4 BGP POLICY ACCOUNTING: 0
  IPV4 BGP POLICY ACCOUNTING SRC: 0
  IPV4 BGP POLICY ACCOUNTING DST: 0
  IPV4 BGP POLICY ACCOUNTING STATS POINTER: 0x0
  IPV4 QoS POLICY PROPAGATE VIA BGP (QPPB) SRC: Disabled (0)
  IPV4 QoS POLICY PROPAGATE VIA BGP (QPPB) DST: Disabled (0)
  IPV4 ACL COUNT: 0
  IPV4 ACL ENABLE: 0
  IPV4 ACL ID: 0
  IPV4 ACL TTL PRESENT: 0
  IPV4 ACL STATS INDEX: 0
  IPV4 ACL ACCOUNTING DISABLED: 0
  IPV4 RPF CHECK: 0
  IPV4 RPF ALLOW SELF PING: 0
  IPV4 RPF ALLOW DEFAULT: 0
  IPV4 RPF STRICT: 0
  IPV4 SRC LOOKUP NEEDED: 0
  MPLS NETFLOW SAMPLING ENABLE: 0
  IPV4 MPLS UIDB TLU EXTENSION: 0
  TLU POINTER TO UTI HDR: 0
  *[CHECKSUM]*: 0xffff8000

  IPv6 16 bytes:
  --------------
  IPV6 ICMP PUNT: 1
  IPV6 NETFLOW SAMPLING ENABLE: 0
  IPV6 BGP POLICY ACCOUNTING: 0
  IPV6 BGP POLICY ACCOUNTING SRC: 0
  IPV6 BGP POLICY ACCOUNTING DST: 0
  IPV6 BGP POLICY ACCOUNTING STATS POINTER: 0x0
  IPV6 ACL COUNT: 0
  IPV6 ACL ENABLE: 0
  IPV6 ACL ID: 0
  IPV6 ACL STATS INDEX: 0
  IPV6 ACL ACCOUNTING DISABLED: 0
  IPV6 MULTICAST BOUNDARY ACL: 0
  IPV6 RPF CHECK: 0
  IPV6 RPF ALLOW SELF PING: 0
  IPV6 RPF ALLOW DEFAULT: 0
  IPV6 RPF STRICT: 0
  IPV6 SRC LOOKUP NEEDED: 0
  IPV6 EFFECTIVE UIDB INDEX: 15
  *[CHECKSUM]*: 0xfffbc000

  IPV4 MCAST EXTN 16 bytes:
  -------------------------
  INPUT IF PRI. IP: 0.0.0.0 (right shift 0)
  INPUT IF SEC. IP: 0.0.0.0 (right shift 0)
  INPUT EFFECTIVE UIDB INDEX: 15
  BOUNDARY ACL: NO
  *[CHECKSUM]*: 0xffffffff1
--------------------------------------------------------------------------------
  Location = 0/1/CPU0
  Ifname/Ifhandle = Bundle-Ether1 / 0x80070
  Index = 15
  Pse direction = EGRESS
  ==========================================
```

```
  *     (Not programmed in hardware)    *
  -----------------------------------------
  RSM STATUS: 0x7c000000
  -> used: 0x1f
  ->dirty: 0x00
  ->badck: 0x00
  -> prog: DONE
  ->count: 0
  -----------------------------------------

  TUNNEL IFHANDLE: 0
  =========================================

  General 16 bytes:
  -----------------
  IFHANDLE: 0x8007
  STATUS: 1
  LINE STATUS DOWN: 0
  STATS POINTER: 0x7dbf1
  USE TABLE ID IPV4: 0
  USE TABLE ID IPV6: 0
  USE TABLE ID MPLS: 0
  TABLE ID: 0
  L2 QOS ENABLE: 0
  QOS ENABLE: 0
  QOS ID: 0
  NETFLOW SAMPLING PERIOD: 0
  SE DATA SVI FLAG: 0
BUNDLE IFHANDLE: 1
  *[CHECKSUM]*: 0x479df8f

  IPv4 and MPLS 16 bytes:
  -----------------------
  IPV4 ICMP PUNT: 1
  IPV4 NETFLOW SAMPLING ENABLE: 0
  IPV4 BGP POLICY ACCOUNTING: 0
  IPV4 BGP POLICY ACCOUNTING SRC: 0
  IPV4 BGP POLICY ACCOUNTING DST: 0
  IPV4 BGP POLICY ACCOUNTING STATS POINTER: 0x0
  IPV4 ACL COUNT: 0
  IPV4 ACL ENABLE: 0
  IPV4 ACL ID: 0
  IPV4 ACL TTL PRESENT: 0
  IPV4 ACL STATS INDEX: 0
  IPV4 ACL ACCOUNTING DISABLED: 0
  IPV4 FRR ACTIVE: 0
  IPV4 MULTICAST BOUNDARY ACL: 0
  IPV4 MULTICAST TTL: 0
  MPLS NETFLOW SAMPLING ENABLE: 0
  IPV4 MPLS UIDB TLU EXTENSION: 0
  SRC MAC: 0000.0000.0000
  UIDB_MPLS_ADJ_COUNTER: 0x0
  UIDB_GRE_MPLS_ADJ_PTR: 0x0
  *[CHECKSUM]*: 0xffff8000

  IPv6 16 bytes:
  --------------
  IPV6 ICMP PUNT: 1
  IPV6 NETFLOW SAMPLING ENABLE: 0
  IPV6 BGP POLICY ACCOUNTING: 0
  IPV6 BGP POLICY ACCOUNTING SRC: 0
  IPV6 BGP POLICY ACCOUNTING DST: 0
  IPV6 BGP POLICY ACCOUNTING STATS POINTER: 0x0
  IPV6 ACL COUNT: 0
```

```
  IPV6 ACL ENABLE: 0
  IPV6 ACL ID: 0
  IPV6 ACL STATS INDEX: 0
  IPV6 ACL ACCOUNTING DISABLED: 0
  IPV6 MULTICAST BOUNDARY ACL: 0
  IPV6 MULTICAST TTL: 0
  SRC MAC: 0000.0000.0000
  *[CHECKSUM]*: 0xffff8000

  IPV4 MCAST EXTN 16 bytes:
  -------------------------
  MVPN TUNNEL MTU: 0
  MVPN MASTER LC:
  *[CHECKSUM]*: 0x0
```

The following example shows the output of the **show uidb data** command:

```
RP/0/RP0/CPU0:router# show uidb data shadow ingress gigabitEthernet 0/2/4/4 loc 0/2/CPU0
------------------------------------------------------------------------------
  Location = 0/2/CPU0
  Ifname/Ifhandle = GigabitEthernet0_2_4_4 / 0x12800a0
  Index = 5
  Pse direction = INGRESS
  ==========================================
  *     (Not programmed in hardware)    *
  ------------------------------------------
  RSM STATUS: 0x7c000000
  -> used: 0x1f
  ->dirty: 0x00
  ->badck: 0x00
  -> prog: DONE
  ->count: 0
  ------------------------------------------
  BUNDLE IFHANDLE: 0
  TUNNEL IFHANDLE: 0
  L2 ENCAP: 3
  ==========================================

  General 16 bytes:
  -----------------------
  IFHANDLE: 0x12800a
  STATUS: 1
  ISSU State: 0
  IPV4 ENABLE: 1
  IPV6 ENABLE: 1
  MPLS ENABLE: 0
  STATS POINTER: 0x7ffd8
  SPRAYER QUEUE: 36
  IPV4 MULTICAST: 0
  IPV6 MULTICAST: 0
  USE TABLE ID IPV4: 0
  USE TABLE ID IPV6: 0
  USE TABLE ID MPLS: 0
  TABLE ID: 0
  QOS ENABLE: 0
  QOS ID: 0
  NETFLOW SAMPLING PERIOD: 0
  L2 PKT DROP: 0
  L2 QOS ENABLE: 0
  SRC FWDING: 0
  *[CHECKSUM]*: 0xff70f28c
```

This table describes the significant fields shown in the display.

Table 30: show uidb data Field Descriptions

Field	Description
Location	Node in system where the interface resides.
Ifname/Ifhandle	Name associated with the interface.
SPRAYER QUEUE LSB	Sprayer queue identifier.
ICMP PUNT FLAG	Flag indicating ICMP punts are enabled for the protocol.

The following example shows the output of the **show uidb data ingress loc 0/0/cpu0**command:

```
RP/0/RP0/CPU0:router# show uidb data ingress loc 0/0/cpu0
------------------------------------------------------------------------------
  Wed May 13 21:01:23.757 UTC
  Location = 0/0/CPU0
  Index = 0
  Pse direction = INGRESS
  ==========================================
  *     (Not programmed in hardware)     *
  ------------------------------------------
  RSM STATUS: 0x4000000
  -> used: 0x01
  ->dirty: 0x00
  ->badck: 0x00
  -> prog: DONE
  ->count: 0
  ------------------------------------------
  ==========================================

  Global 16 bytes:
  ------------------------
  ROUTER_ID: 185.127.121.191
  MINIMUM MASK DESTINATION: 0 / 0
  MINIMUM MASK SOURCE: 0 / 0
  BYTES OF SNIFF PACKET: 0
  SUPPRESS PUNT ACL: 0
  MPLS PROPAGATE TTL FLAG: 1
  LOAD BALANCING HASH: 7 tuple(1)
  PARITY: 0
  FABRIC QOS ENABLE FLAG: 0
  GLOBAL LI ENABLE FLAG: 0
  GLOBAL FRR FLAG: 0
  GLOBAL L2TPV3 BISCUIT FLAG: 1
  P2MP L3FIB RESET: 0
  *[CHECKSUM]*: 0x46804630
------------------------------------------------------------------------------
```

Related Commands

Command	Description
show uidb trace, on page 186	Displays UIDB trace data debugging information that helps in troubleshooting the problem.
show uidb data-dump	Displays UIDB data information in hexadecimal format.

show uidb trace

To display trace data information for the micro-interface descriptor block (IDB), use the **show uidb trace** command in EXEC mode.

show uidb trace {**all** | **errors** | **events** | **init** | **rsm**}[**file** *file-name*] [**hexdump**] [**last** *entries*] [**reverse**] [**stats**] [**tailf**] [**unique**] [**usec**] [**verbose**] [**wide**] [**wrapping**] [**location** {*node-id* | **all** | **mgmt-nodes**}]

Syntax Description

all	Displays all UIDB trace information.
errors	Displays information related to UIDB errors trace.
events	Displays information related to UIDB events trace.
init	Displays information related to UIDB init trace.
rsm	Displays information related to UIDB rsm trace.
file	(Optional) Displays a specific file.
filename	Name of a specific file.
hexdump	(Optional) Displays traces in hexadecimal format.
last	(Optional) Displays trace information for a specific number of entries
entries	Number of entries. Replace entries 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. The range is from 1 to 65536.
reverse	(Optional) Displays the latest traces first.
stats	(Optional) Displays the statistics in the command output.
tailf	(Optional) Displays the new traces as they are added in the command output.
usec	(Optional) Displays timestamp w/usec detail.
wide	(Optional) Do not display buffer name, node name, and thread-id.
unique	(Optional) Displays the unique entries with counts in the command output.
verbose	(Optional) Displays the information for internal debugging in the command output.
wrapping	(Optional) Displays the wrapping entries in the command output.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
location all	(Optional) Specifies all locations.
location mgmt-nodes	(Optional) Specifies all management nodes.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the sample output from the **show uidb trace** command:

```
RP/0/RP0/CPU0:router sh uidb trace init loc 0/6/CPU0
------------------------------------------------------------------------------
28 wrapping entries (512 possible, 0 filtered, 28 total)
Mar 31 02:27:35.368 uidb_svr/initlog 0/6/CPU0 t1  Entering : Event manager init
Mar 31 02:27:36.641 uidb_svr/initlog 0/6/CPU0 t1  Successful : Event manager int
Mar 31 02:27:36.641 uidb_svr/initlog 0/6/CPU0 t1  Entering : Debug init
Mar 31 02:27:36.816 uidb_svr/initlog 0/6/CPU0 t1  Successful : Debug init
Mar 31 02:27:36.816 uidb_svr/initlog 0/6/CPU0 t1  Entering : MIPC bund
Mar 31 02:27:51.695 uidb_svr/initlog 0/6/CPU0 t1  Successful : MIPC bind
Mar 31 02:27:51.695 uidb_svr/initlog 0/6/CPU0 t1  PSE RSM : Init - main() : (50s
Mar 31 02:27:51.803 uidb_svr/initlog 0/6/CPU0 t1  Successful : PSE RSM Init sucd
Mar 31 02:27:51.803 uidb_svr/initlog 0/6/CPU0 t1  Entering : Metro bind
Mar 31 02:27:51.828 uidb_svr/initlog 0/6/CPU0 t1  Successful : Metro bind
Mar 31 02:27:51.828 uidb_svr/initlog 0/6/CPU0 t1  Entering : PLIM ASIC register
Mar 31 02:27:51.922 uidb_svr/initlog 0/6/CPU0 t1  Successful : PLIM ASIC registr
Mar 31 02:27:51.922 uidb_svr/initlog 0/6/CPU0 t1  Entering : UIDB checkpoint int
Mar 31 02:27:51.944 uidb_svr/initlog 0/6/CPU0 t1  Successful : UIDB checkpoint t
Mar 31 02:27:51.944 uidb_svr/initlog 0/6/CPU0 t1  Entering : UIDB shadow memoryt
Mar 31 02:27:51.944 uidb_svr/initlog 0/6/CPU0 t1  Successful : UIDB shadow memot
Mar 31 02:27:51.944 uidb_svr/initlog 0/6/CPU0 t1  Entering : UIDB EDM init
Mar 31 02:27:51.951 uidb_svr/initlog 0/6/CPU0 t1  Successful : UIDB EDM init
Mar 31 02:27:51.951 uidb_svr/initlog 0/6/CPU0 t1  Entering : Checkpoint ingresse
Mar 31 02:27:51.951 uidb_svr/initlog 0/6/CPU0 t1  Successful : Checkpoint ingree
Mar 31 02:27:51.951 uidb_svr/initlog 0/6/CPU0 t1  Entering : Checkpoint egress e
```

Mar 31 02:27:51.951 uidb_svr/initlog 0/6/CPU0 t1 Successful : Checkpoint egrese

Related Commands

Command	Description
show uidb data, on page 180	Displays UIDB index data information.
show uidb data-dump	Displays UIDB data information in hexadecimal format.

show uidb index

To display micro-interface descriptor block (IDB) index information, use the **show uidb index** command inEXEC mode.

show uidb index [*interface-type interface-instance*] **location** *node-id*

Syntax Description

interface-type	(Optional) Interface type. For more information, use the question mark (?) online help function.

interface-instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

location *node-id*	Displays UIDB index information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show uidb index**command to display the micro-IDB index assigned by the software.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows the output of the **show uidb index** command:

```
RP/0/RP0/CPU0:router# show uidb index

------------------------------------------------------------------------------
  Location Interface-name    Interface-Type       Ingress-index  Egress-index
------------------------------------------------------------------------------
    0/1/CPU0          0                                  0               0
    0/1/CPU0 GigabitEthernet0_1_5_0          Main interface        1
    1
    0/1/CPU0 GigabitEthernet0_1_5_1          Main interface        2
    2
    0/1/CPU0 GigabitEthernet0_1_5_2          Main interface        3
    3
    0/1/CPU0 GigabitEthernet0_1_5_3          Main interface        4
    4
    0/1/CPU0 GigabitEthernet0_1_5_4          Main interface        5
    5
    0/1/CPU0 GigabitEthernet0_1_5_5          Main interface        6
    6
    0/1/CPU0 GigabitEthernet0_1_5_6          Main interface        7
    7
    0/1/CPU0 GigabitEthernet0_1_5_7          Main interface        8
    8
    0/1/CPU0 POS0_1_0_0          Main interface        9               9
    0/1/CPU0 POS0_1_4_0          Main interface       10              10
    0/1/CPU0 POS0_1_0_1          Main interface       11              11
    0/1/CPU0 POS0_1_4_1          Main interface       12              12
    0/1/CPU0 POS0_1_0_2          Main interface       13              13
    0/1/CPU0 POS0_1_4_2          Main interface       14              14
    0/1/CPU0 POS0_1_0_3          Main interface       15              15
    0/1/CPU0 POS0_1_4_3          Main interface       16              16
    0/1/CPU0 Bundle-POS24        Bundle Interface  17              17
    0/1/CPU0 Bundle-Ether28  Bundle Interface18 18
    0/1/CPU0 Bundle-Ether28.1           Sub-interface 19              19
    0/1/CPU0 Bundle-Ether28.2           Sub-interface 20              20
    0/1/CPU0 Bundle-Ether28.3           Sub-interface 21              21
    0/6/CPU0          0                                  0               0
    0/6/CPU0 GigabitEthernet0_6_5_0          Main interface        1
    1
    0/6/CPU0 GigabitEthernet0_6_5_1          Main interface        2
    2
    0/6/CPU0 GigabitEthernet0_6_5_2          Main interface        3
    3
    0/6/CPU0 GigabitEthernet0_6_5_3          Main interface        4
    4
    0/6/CPU0 GigabitEthernet0_6_5_4          Main interface        5
    5
    0/6/CPU0 GigabitEthernet0_6_5_5          Main interface        6
    6
    0/6/CPU0 GigabitEthernet0_6_5_6          Main interface        7
    7
    0/6/CPU0 GigabitEthernet0_6_5_7          Main interface        8
    8
    0/6/CPU0 POS0_6_0_0          Main interface        9               9
    0/6/CPU0 POS0_6_4_0          Main interface       10              10
    0/6/CPU0 POS0_6_0_1          Main interface       11              11
    0/6/CPU0 POS0_6_4_1          Main interface       12              12
    0/6/CPU0 POS0_6_0_2          Main interface       13              13
    0/6/CPU0 POS0_6_4_2          Main interface       14              14
    0/6/CPU0 POS0_6_0_3          Main interface       15              15
    0/6/CPU0 POS0_6_4_3          Main interface       16              16
    0/6/CPU0 POS0_6_4_4          Main interface       17              17
```

```
0/6/CPU0 POS0_6_4_5          Main interface       18              18
0/6/CPU0 POS0_6_4_6          Main interface       19              19
0/6/CPU0 POS0_6_4_7          Main interface       20              20
```

This table describes the significant fields shown in the display.

Table 31: show uidb index Field Descriptions

Field	Description
Location	Node where index is located.
Interface-name	Name of the interface.
Interface-Type	Type of interface.
Ingress-index	Value associated with ingress processing on the interface.
Egress-index	Value associated with egress processing on the interface.

Related Commands

Command	Description
show uidb data, on page 180	Displays micro-interface descriptor block index data information.
show uidb data-dump	Displays micro-interface descriptor block data information in hexadecimal format.

watchdog threshold memory

To configure the value of memory available for each alarm threshold, use the **watchdog threshold memory** command in global configuration or interface configuration mode. To revert to the default threshold memory, use the **no** form of this command.

watchdog memory threshold [**location** *node-id*] **minor** *percentage-memory-available* **severe** *percentage-memory-available* **critical** *percentage-memory-available*
no watchdog memory threshold [**location** *node-id*] **minor** *percentage-memory-available* **severe** *percentage-memory-available* **critical** *percentage-memory-available*

Syntax Description

location *node-id*	Configures the threshold memory for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.
minor	Specifies the threshold for the minor state.
percentage-memory- available	Memory consumption percentage. Range is from 5 to 40.
severe	Specifies the threshold for the severe state.
critical	Specifies the threshold for the critical state.

Command Default

None

Command Modes

Global configuration

Interface configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Use the **watchdog threshold memory** command to configure the memory thresholds. Threshold values can be applied to all nodes or a specific node using the **location** *node-id* keyword and argument. If the local threshold settings are removed, the local settings return to those set globally. In addition, you can view default and configured thresholds.

This table lists the recommended memory threshold value calculations if the minor threshold is set to 20 percent, the severe threshold is set to 10 percent, and the critical threshold is set to 5 percent.

Table 32: Recommended Memory Threshold Values

Total Available Memory (MB)	Minor Threshold (20 percent of available memory)	Severe Threshold (10 percent of available memory)	Critical Threshold (5 percent of available memory)
128	25.6	12.8	6.4
256	51.2	25.6	12.8
512	102.4	51.2	25.6

Total Available Memory (MB)	Minor Threshold (20 percent of available memory)	Severe Threshold (10 percent of available memory)	Critical Threshold (5 percent of available memory)
1024	204.8	102.4	51.2
2048	409.6	204.8	102.4
4096	819.2	409.6	204.8

Task ID

Task ID	Operations
cisco-support	read, write

Examples

The following example shows how to configure the memory available for each alarm threshold:

```
RP/0/RP0/CPU0:router #configure
RP/0/RP0/CPU0:router(config)# watchdog threshold memory location 0/RP0/CPU0 minor 30 severe
 20 critical 10
```

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 modular services cards .

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

clear controller fabric statistics

To clear fabric plane statistics from the counters information table, use the **clear controller fabric statistics** command in administration EXEC mode.

clear controller fabric statistics plane [{*plane-id* | **all**}]

Syntax Description

plane *plane-id*	(Optional) The fabric plane and plane ID. Range is from 0 to 7.
all	(Optional) Specifies fabric statistics for all planes.

Command Default

Information for all planes is cleared.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

The **clear controller fabric statistics** command clears the fabric statistics for the specified fabric plane or all planes.

Task ID

Task ID	Operations
root-system	read, write, execute
fabric	read, write

Examples

The following example shows how to clear all fabric plane statistics from the router:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# clear controller fabric statistics plane all
```

clear controller fabricq statistics

On linecards, RPs and DRPs, the fabricq ASICs receive the cells from the fabric planes and reassembles them into packets. To clear the statistics on fabricq ASICs, use the **clear controller fabricq statistics** command in EXEC mode.

clear controller fabricq statistics [**instance** *asic_instance*] [**location** *node-id*]

Syntax Description

instance *asic_instance*	(Optional) Identifies the fabric queue instance whose ASIC statistics you want to clear. Range is from 0 to 3.
location *node-id*	(Optional) Identifies a node on which to clear ASIC statistics for a specific fabric queue, or for all fabric queues. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

The default is to enter the **clear controller fabricq statistics** command without any optional keyword arguments to clear ASIC statistics for all fabric queues on the router.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	The *asic_instance* argument range of 1 to 3 was changed to 0 to 3.

Usage Guidelines

Only locations that contain a fabric queue ASIC can be specified for the **location** *node-id* .

This command is intended for use while performing special maintenance, test, or debugging procedures. It should not be necessary to use this command when fabric connectivity is performing normally.

Task ID

Task ID	Operations
root-system	execute
drivers	read, write

Examples

The following example shows how to clear ASIC statistics on all fabric queues on the node located in 0/1/CPU0:

```
RP/0/RP0/CPU0:router# clear controller fabricq statistics location 0/1/CPU0
```

The following example shows how to clear ASIC statistics for a specific fabric queue on all nodes that are installed in the router:

```
RP/0/RP0/CPU0:router# clear controller fabricq statistics instance 2
```

The following example shows how to clear ASIC statistics for a specific fabric queue on a specific node:

```
RP/0/RP0/CPU0:router# clear controller fabricq statistics instance 2 location 0/1/CPU0
```

clear controller ingressq statistics

To clear application-specific integrated circuit (ASIC) statics from the ingress fabric queue on a specific node, or on all nodes installed in the router, use the **clear controller ingressq statistics** command in EXEC mode.

clear controller ingressq statistics location *node-id*

Syntax Description

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

Command Default

Enter the **clear controller ingressq statistics** command without the optional **location** *node-id* keyword and argument to clear the ASIC statistics from the ingress queues on all nodes that are installed in the router.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.6.0	The **location** *node-id* keyword and argument were changed from optional to required.

Usage Guidelines

Only locations that contain a fabric queue ASIC can be specified for the *node-id* argument.

The **clear controller ingressq statistics** command is intended for use while performing special maintenance, test, or debugging procedures. You do not need to use this command when fabric connectivity is performing normally.

Task ID

Task ID	Operations
drivers	read, write

Examples

The following example shows how to use the **clear controller ingressq statistics** command to clear all ASIC statistics in the ingress fabric queue from the location 0/1/CPU0:

```
RP/0/RP0/CPU0:router# clear controller ingressq statistics location 0/1/CPU0
```

Related Commands

Command	Description
show controllers plim asic egress-channel bay	Displays statistical information for the ingress queue ASIC.

controllers fabric bundle port

To put a specific switch fabric bundle port into the shut down state, use the **controllers fabric bundle** command in Admin Configuration mode. To return the switch fabric bundle port to an up state, use the **no** form of this command.

controllers fabric bundle port *port-id* **shutdown**
no controllers fabric bundle port *port-id* **shutdown**

Syntax Description

port-id	Identifies the switch fabric bundle port you want to put into the shutdown state. The *port-id* argument is entered in the *rack/slot/module/port* notation.
shutdown	Puts the specified bundle port into a shutdown state.

Command Default

No default behavior or values

Command Modes

Admin Configuration mode

Command History

Release	Modification
Release 3.5.0	This command was introduced.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read, write

Examples

The following example shows put a switch fabric bundle port into the shut down state:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(config)# configure
RP/0/RP0/CPU0:router(admin-config)# controllers fabric bundle port 0/1/CPU0/10 shutdown
```

controllers fabric plane oim

To configure optical interface module (OIM) fabric plane properties, use the **controllers fabric plane** command in Admin Configuration mode. To return the OIM fabric plane properties to the default configuration, use the **no** form of this command.

controllers fabric plane *plane-id* **oim** {**count** {**1** | **3**} | **width** {**1** | **2**} | **instance** *oim-instance* **location** {*node-id* | **all**}}
no controllers fabric plane *plane-id* **oim** {**count** {**1** | **3**} | **width** {**1** | **2**} | **instance** *oim-instance* **location** {*node-id* | **all**}}

Syntax Description

plane-id	Identifies the fabric plane. Range is from 0 to 7.
count {**1** | **3**}	Configures the number of OIMs used in this plane. Enter **1** to configure all cables in the plane to connect to the same OIM. Enter **3** to configure the cables from each fabric card to connect to different OIMs.
width {**1** | **2**}	Width of OIMs in the current fabric plane. Enter **1** to indicate a single-width OIM that covers one slot only. Enter **2** to indicate a dual-width OIM that covers two slots.
instance {*oim-instance*}	Specifies the properties of a specific OIM. Range is from 0 to 2.
location *node-id*	Identifies the node whose OIM fabric plane properties you want to configure. The *node-id* argument is entered in the *rack/slot/module* notation.
location all	Configures the OIM fabric plane properties on all nodes installed in the router.

Command Default

No default behavior or values

Command Modes

Admin Configuration mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.3.0	• The **topology** keyword was removed from the **controllers fabric plane** command syntax. • The **oim** , **count** , **width** , and **instance** keywords were added to the **controllers fabric plane** command syntax.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read, write

Examples

The following example shows how to configure all cables in the fabric plane to connect to the same OIM:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# controllers fabric plane 3 oim count 1
```

controllers fabric plane shutdown

To shut down the state of a fabric plane, use the **controllers fabric plane shutdown** command in Admin Configuration mode. To disable the state of a fabric plane, use the **no** form of this command.

controllers fabric plane *plane-id* **shutdown**

Syntax Description

plane-id	Fabric plane identifier. Range is from 0 to 7.

Command Default

The controller fabric plane is not shut down, and data continues to flow through the plane.

Command Modes

Admin Configuration mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **controllers fabric plane shutdown** command to perform a graceful shutdown of the fabric plane before a fabric reconfiguration or fabric plane migration. This ensures that data is not flowing through the plane.

Task ID

Task ID	Operations
fabric	read, write

Examples

The following example shows fabric plane 3 being shut down:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# controllers fabric plane 3 shutdown
```

controllers fabric rack

To put the rack into installation mode so that no traffic is sent over the switch fabric, use the **controllers fabric rack** command in Admin Configuration mode. To enable traffic to be sent over the switch fabric, use the **no** form of this command.

controllers fabric rack *rack_number* **install-mode**

Syntax Description

rack_number	Rack number. Range is from 0 to 17.
install-mode	Puts the specified rack into installation mode, so that no traffic is sent over the switch fabric.

Command Default

No default behavior or values

Command Modes

Admin Configuration mode

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read, write

Examples

The following example shows how to put the rack into installation mode so that no traffic is sent over the switch fabric:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(config)# configure
RP/0/RP0/CPU0:router(admin-config)# controllers fabric rack 1 install-mode
```

controllers fabric statistics collection

To enable the collection of fabric statistics data and configure the interval at which statistics are collected, use the **controllers fabric statistics collection** command in Admin Configuration mode. To return the system to the default interval setting, use the **no** form of this command.

controllers fabric statistics collection {**control** [**refresh**] | **interval** *seconds*}

Syntax Description

control	Enables fabric statistics data collection.
refresh	(Optional) Causes the system to collect data immediately.
interval *seconds*	Specifies the interval, in seconds, between collection of data for fabric statistics. Range is from 10 to 180 seconds. Default is 30 seconds.

Command Default

Control of fabric statistics data collection = enabled

Interval= 30 seconds.

Command Modes

Admin Configuration mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read, write

Examples

The following example shows statistic data collection on the fabric being disabled:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# configure
RP/0/RP0/CPU0:router(admin-config)# controllers fabric statistics collection control disable
```

show controllers fabric bundle

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

show controllers fabric bundle {*node-id* [{**brief** | **detail**}] | **all** [{**brief** | **detail**}] | **port** *port-id* [{**brief** | **detail** | **statistics**}] | **summary**}

Syntax Description

node-id	Identifies a node whose fabric bundle information you want to display. The *node-id* argument is entered in the *rack/slot/module* notation. Follow the *node-id* argument with one of the following optional keywords to display the data a specific format:
brief	(Optional) Displays brief information about the specified fabric bundle port or ports. This is the default.
detail	(Optional) Displays detailed information about the specified fabric bundle port or ports.
all	Displays bundle information for all fabric bundles. Follow the **all** keyword with one of the following optional keywords to display the data in a specific format: • **brief**—Displays brief information about the fabric bundles. • **detail** —Displays detailed information about the fabric bundles.
port *port-id*	Identifies a port whose fabric bundle information you want to display. The *port-id* argument is entered in the *rack/slot/module/port* notation. Follow the *port-id* argument with one of the following optional keywords to display the data a specific format: • **brief**—Displays brief information about the fabric bundle. • **detail** —Displays detailed information about the fabric bundle. • **statistics** —Displays fabric bundle statistics for the specified port.
statistics	Displays fabric bundle statistics.
summary	Displays summarized fabric bundle information.

Command Default

Information is displayed for all fabric bundle ports on the router.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read

Examples

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

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric bundle ?

WORD     Bundle location <Rack>/<Slot>/<Module>/<Port#>
all      Show all fabric bundle ports.
port     Fabric bundle port option
summary  Show summary of bundle data
```

show controllers fabric connectivity

To display controller fabric connectivity information, use the **show controllers fabric connectivity** command in Admin EXEC mode.

show controllers fabric connectivity {**all***node-id*} [{**brief** | **detail**}]

Syntax Description

all	Specifies all controller fabric ports.
node id	Specifies the fabric port associated with the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.
brief	(Optional) Specifies brief information about controller fabric connectivity. This is the default.
detail	(Optional) Specifies detailed information about controller fabric connectivity.

Command Default

Brief information about controller fabric connectivity is displayed.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show controllers fabric connectivity**command to monitor a modular services card as it sends data to the fabric or receives data from the fabric.

Task ID

Task ID	Operations
fabric	read

Examples

The following is sample output from the **show controllers fabric connectivity**command that displays fabric connectivity information in brief form for all resources:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric connectivity all brief

 Card       In  Tx Planes  Rx Planes  Monitored        Total
Percent
 R/S/M      Use 01234567   01234567   For (s)          Uptime (s)
Uptime
-------------------------------------------------------------------------------
0/2/CPU0    1   .1......   .1......   20913            20913
100.0000
0/RP0/CPU0  1   .1......   .1......   20913            20913
```

The following is sample output from the **show controllers fabric connectivity**command that displays detailed fabric connectivity information for all resources:

```
RP/0/RP0/CPU0:router(admin)# show controllers fabric connectivity all

Card       In  Tx Planes  Rx Planes  Monitored        Total            Percent
 R/S/M     Use 01234567   01234567   For (s)          Uptime (s)       Uptime
-------------------------------------------------------------------------------
0/1/CPU0    1   .1......   .1......   8561             8561             100.0000
0/2/CPU0    1   .1......   .1......   8561             8561             100.0000
0/RP1/CPU0  1   .1......   .1......   8561             8561             100.0000
```

The following is sample output from the **show controllers fabric connectivity** command that displays fabric connectivity information for the modular services card on node 0/0/CPU0:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router# show controller fabric connectivity 0/0/CPU0

 Card       In  Tx Planes  Rx Planes  Monitored        Total            Percent
 R/S/M      Use 01234567   01234567   For (s)          Uptime (s)       Uptime
-------------------------------------------------------------------------------
0/0/CPU0    1   .1......   .1......   8805             8805             100.0000
```

This table describes the significant fields shown in the display.

Table 33: show controllers fabric connectivity Field Descriptions

Field	Description
Card R/S/M	Identifies the fabric card, in the format *rack*/*slot*/*module*.
In Use	Indicates the number of fabric ports that are in use on the card.
Tx Planes	Indicates activity on the transmit fabric plane.
Rx Planes	Indicates activity on the receive fabric plane.
Monitored For (s)	Elapsed time in seconds since monitoring began.
Total Uptime	Total uptime expressed in seconds.
Percent Uptime	Percentage of time the card has been up since monitoring began.

show controllers fabric driver instance summary

To obtain information about a specific Swtich Fabric Element (SFE) ASIC on a particular board, use the **show controllers fabric driver instance summary** command in Admin EXEC mode.

show controller fabric driver instance asic_instance {**backpressure** | **block** | **link-info** | **summary**} **location node-id**

Syntax Description

instance *asic_instance*	Specifies ASIC instance. The range is from 0 to 4294967295.
backpressure	Displays detailed information for fabric back-pressure.
block	Displays detailed information for ASIC block.
link-info	Displays information for the ASIC transmit (Tx) and receiver (Rx) link port.
summary	Displays summarized information about all fabric queue ASICs in the system.
location *node*	Displays information for the fabric queue ASICs on a particular node. **Note** Use the **show platform** command to see a list of all nodes currently installed in your system.

Command Default

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read

Examples

The following example shows how to obtain information about an SFE ASIC on a particular board from the router:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric driver instance 5 summary location
0/SM0/SP

------------------------------------------------------------------------
s3/0/SM0/SP/1 Summary :
------------------------------------------------------------------------
```

```
Node ID:0/SM0/SP

Chip ID                 : 0x2024E049     PLD Version             : 0000001E
Top Interrupt Status    : 0x00000000     Top Interrupt Enable    : 0000003F
Oper Status             : UP             Enable Status           : ENABLE
```

show controllers fabric fgid resource

To display information about the fabric resources that are allocated to specific secure domain router (SDR) fabric group IDs (FGIDs), use the **show controllers fabric fgid resource** command in Admin EXEC mode.

show controllers fabric fgid resource {**all** | **sdr Owner** {**all** | **application** {**CLI** | **GSP** | **LPTS**} **id** *fabric_fgid* [**elements** *number_of_fgids*]}}

Syntax Description

all	Displays FGID resource information for all SDRs on the current system.
sdr Owner	Specifies the owner SDR.
all all	Displays information for all resources allocated to the specified SDRs.
application	Displays information for a specific resource allocated to the owner SDRs. Follow the **sdr Owner application** keywords with one of the following keywords to specify a particular resource application: • **CLI** • GSP • **LPTS**
CLI	Displays command-line interface (CLI) information for the owner SDR.
GSP	Displays Gateway Service Protocol (GSP) information for the owner SDR.
LPTS	Displays Local Packet Transport Services (LPTS) information for the owner SDR.
id *fabric_fgid*	Fabric FGID whose SDR resource information you want to display. Replace with an FGID. Range is from 0 to 1000000
elements *number_of_fgids*	(Optional) Number of fabric FGIDs to display in the command output. Replace the *number_of_fgids arguments* with the number of FGIDs to list in the command output. Range is from 1 through 1000000.

Command Default

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Use the **show controllers fabric fgid resource** command to verify the multicast resource ID for the fabric card multicast bit set.

Task ID

Task ID	Operations
fabric	read

Examples

The following example shows sample output from the **show controllers fabric fgid resource** command. In this example, LPTS information is displayed for the SDR owner FGID 1000:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric fgid resource sdr Owner application
lpts id 1000 elements 1

==================================================
Displaying FGID Info for:
SDR: Owner APPLICATION : LPTS
**** No FGID's allocated ****
RP/0/RP0/CPU0:P1_CRS-8(admin)#show controllers fabric fgid resource sdr Owner $

==================================================
Displaying FGID Info for:
SDR: Owner APPLICATION : LPTS
**** No FGID's allocated ****

The following example shows sample output from the show controllers fabric fgid resource
command. In this example, fabric resource information is displayed for all SDRs in the
system:
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric fgid resource all

==================================================
Displaying FGID Info for:
SDR: Owner APPLICATION : CLI
**** No FGID's allocated ****

==================================================
Displaying FGID Info for:
SDR: Owner APPLICATION : GSP
1024, 1025, 1026, 1027, 1028, 1029, 1030, 1031, 1032, 1033
1034, 1035, 1036, 1037, 1038, 1039, 1040, 1041, 1042, 1043
1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053
1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063
1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073
1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083
1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093
1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103
1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113
1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123
1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133
1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143
1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153
1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163
1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173
```

show controllers fabric fgid statistics

To display resource statistical information for the fabric group ID (FGID), use the **show controllers fabric fgid statistics** command in Admin EXEC mode.

show controllers fabric fgid statistics {**all** | **pool** | **sdr** | **system**} [{**brief** | **detail**}]

Syntax Description

all	Specifies all FGID resource statistical information for the logical router and FGID resource pools.
sdr	Specifies FGID resource statistics about the secure domain router (SDR).
pool	Specifies FGID statistical information about the resource pool.
system	Specifies FGID resource statistics for the entire physical router.
brief	(Optional) Specifies brief information about FGIDs. This is the default.
detail	(Optional) Specifies detailed information about FGIDs.

Command Default

Brief information is displayed.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show controllers fabric fgid statistics** command to monitor FGID resource usage based on a system, pool, or client view.

Task ID

Task ID	Operations
fabric	read
root-system	read, execute

Examples

The following is sample output from the **show controllers fabric fgid statistics** command that displays resource statistics for the fabric FGID in detailed form with all resources activated:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric fgid statistics all detail

Fabric FGID Resource Statistics Information:

System wide Fabric multicast resource statistics:

        Total number of FGIDs in the system is 1000000
        Current number of InUse FGIDs in the system is 500
```

```
        High Water Mark of InUse FGIDs in the system is 500

Per SDR basis Fabric multicast resource statistics:


        Secure Domain Router Name is Owner
        InUse FGIDs is 500
        High Water Mark InUse FGIDs is 500

        Per client basis FGID resource utilization:

                            Appl Appl Pool      Current       HighWater Mark
                            Name  ID   ID      InUse FGIDs      InUse FGIDs
-------------------------------------------------------------------------------
                             CLI   0   2                0                 0
                            LPTS   1   1                0                 0
                             GSP   2   0              500               500

Per Pool basis Fabric multicast resource statistics:

        Pool Identifier is 0
        Pool Name is GSP
        Pool type is Dedicated
        The starting FGID of this pool is 1024
        Total FGIDs of this pool is 10240
        InUse FGIDs of this pool is 500
        High Water Mark InUse FGIDs of this pool is 500

        Pool Identifier is 1
        Pool Name is LPTS
        Pool type is Dedicated
        The starting FGID of this pool is 11264
        Total FGIDs of this pool is 32768
        InUse FGIDs of this pool is 0
        High Water Mark InUse FGIDs of this pool is 0

        Pool Identifier is 2
        Pool Name is COMMON
        Pool type is Shared
        The starting FGID of this pool is 44032
        Total FGIDs of this pool is 955968
        InUse FGIDs of this pool is 0
        High Water Mark InUse FGIDs of this pool is 0
```

This table describes the significant fields shown in the display.

Table 34: show controllers fabric fgid statistics Field Descriptions

Field	Description
Total number of FGIDs in the system	Total number of fabric FGIDs in the system.
Current number of Inused FGIDs in the system	Total number of fabric FGIDs in use in the system.
High Water Mark of Inused FGIDs in the system	Number of in-use fabric FGIDs at the highest point within the system.
Secure Domain Router Name	Name of the SDR.
Inused FGIDs	Inused (in-use) fabric FGID.

Field	Description
High Water Mark inused FGIDs	Number of inused (in-use) FGIDs since monitoring started.
Appl Name	Application name.
Appl ID	Application ID.
Pool ID	Pool ID.
Current InUsed FGIDs	Current number of inused (in-use) FGIDs.
Pool Identifier	Group pool identifier number.
Pool Name	Group pool name.
Pool type	Group pool type.
Total FGIDs of this pool	Number of FGIDs in the pool.
Inused FGIDs of this pool	Number of FGIDs inused (in-use) in the pool.
High Water Mark inused FGIDs of this pool	Number of FGIDs in the pool since the start of monitoring.

show controllers fabric fsdb-pla rack all

To display plane availability status information for all racks in the system, use the **show controllers fabric fsdb-pla rack all** command in Admin EXEC mode.

show controllers fabric fsdb-pla rack all

Syntax Description

rack	Specifies the rack number. Range varies from 0-48.

Command Default

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.3.1	This command was introduced.

Usage Guidelines

Use the **show controllers fabric fsdb-pla rack all** command to verify line card connectivity to the fabric planes.

Task ID

Task ID	Operations
fabric	read

Examples

The following example shows sample output from the **show controllers fabric fsdb-pla rack all** command:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric fsdb-pla rack all

Rack 0:
=======

                          SrcGrp:0
                          01234567
Multicast Mask            11111111
Unicast Mask              11111111

Destination      S3-Fabricq    Reachability Mask     Downloaded Mask
Address          Mask             SrcGrp:0              SrcGrp:0
                 01234567         01234567              01234567
------------------------------------------------------------------------
4(0/1/CPU0)   11111111         11111111              11111111
5(0/1/CPU0)   11111111         11111111              11111111
16(0/4/CPU0)   11111111         11111111              11111111
17(0/4/CPU1)   11111111         11111111              11111111
24(0/6/CPU0)   11111111         11111111              11111111
25(0/6/CPU0)   11111111         11111111              11111111
30(0/RP0/CPU0)   11111111         11111111              11111111
```

```
31(0/RP1/CPU0)    11111111          11111111              11111111 :
```

show controllers fabric link port

To display link information for a specific fabric port, use the **show controllers fabric link port** command in Admin EXEC mode.

show controllers fabric link port {**fabricqrx** | **ingressqtx** | **s1ro** | **s1rx** | **s1tx** | **s2rx** | **s2tx** | **s3rx** | **s3tx**} {*port* | **all**} [{**brief** | **detail**}]

Syntax Description

fabricqrx	Displays information for the fabric queue receive port.
ingressqtx	Displays information for the ingress queue transmit port.
s1ro	Displays information for the S1 Out-of-Band receive port. The out of band ports connect the fabric planes together so that the flow control information collected within a fabric plane is distributed across all fabric planes. This is essential in controlling fabric congestion and the congestion location within fabric.
s1rx	Displays information for the Stage 1 (S1) receive port. The S1 receive port distributes incoming traffic.
s1tx	Displays information for the Stage 1 (S1) transmit port. The S1 transmit port distributes outgoing traffic.
s2rx	Displays information for the Stage 2 (S2) receive port. The S2 receive port forwards incoming cells to Stage 3 (S3) port.
s2tx	Displays information for the Stage 2 (S2) transmit port. The S2 transmit port forwards outgoing cells to Stage 3 (S3) transmit port.
s3rx	Displays information about S3 receive port. The S3 receive port performs switching for incoming traffic.
s3tx	Displays information about S3 transmit port. The S3 receive port performs switching for outgoing traffic.
port	Specifies the port whose fabric link information you want to display. Replace the *port* argument with a port identifier. The *port* argument naming notation is in the *rack*/*slot*/*module*/*asic*/*port* format. **Note** A slash between values is required as part of the *port* naming notation.
all	Displays fabric link information for all specified ports.
brief	(Optional) Displays summarized fabric link information.
detail	(Optional) Specifies that the command output includes detailed fabric link information.

Command Default

Enter the **show controllers fabric link port** command without specifying any of the optional parameters to display summarized fabric link information. This is the same information that is displayed when you include the **brief** option in the **show controllers fabric link port** command string.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Use the **show controllers fabric link port** command to check the health of fabric internal connections.

Task ID

Task ID	Operations
fabric	read

Examples

The following example shows partial sample output from the **show controllers fabric link port** command for all S1RO ports in the system:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric link port s1ro all

Flags: P - plane admin down, p - plane oper down
C - card admin down, c - card oper down
L - link port admin down, l - linkport oper down
A - asic admin down, a - asic oper down
B - bundle port admin Down, b - bundle port oper down
I - bundle admin down, i - bundle oper down
N - node admin down, n - node down
o - other end of link down d - data down
f - failed component downstream
m - plane multicast down
Sfe Port Admin Oper Down Other Near-end Far-end
R/S/M/A/P State State Flags End Bport Bport
--------------------------------------------------------------------------------
0/SM0/SP/0/0 UP UP 0/SM0/SP/1/15
0/SM0/SP/0/1 UP UP 0/SM1/SP/0/33
0/SM0/SP/0/2 UP UP 0/SM1/SP/1/33
0/SM0/SP/0/3 UP UP 0/SM2/SP/0/33
0/SM0/SP/0/4 UP UP 0/SM2/SP/1/33
0/SM0/SP/0/5 UP UP 0/SM3/SP/0/33
0/SM0/SP/0/6 UP UP 0/SM3/SP/1/33
0/SM0/SP/1/0 UP UP 0/SM0/SP/0/15
0/SM0/SP/1/1 UP DOWN l Unused
0/SM0/SP/1/2 UP UP Unused
0/SM0/SP/1/3 UP DOWN l Unused
0/SM0/SP/1/4 UP DOWN l Unused
0/SM0/SP/1/5 UP DOWN l Unused
0/SM0/SP/1/6 UP DOWN l Unused
0/SM1/SP/0/0 UP UP 0/SM1/SP/1/15
0/SM1/SP/0/1 UP UP 0/SM0/SP/0/33
0/SM1/SP/0/2 UP UP 0/SM0/SP/1/33
0/SM1/SP/0/3 UP UP 0/SM2/SP/0/51
--More--
```

The following example shows partial sample output from the **show controllers fabric link port** command with the **detail** keyword included in the command string:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric link port fabricqrx all detail

Flags: P - plane admin down, p - plane oper down
C - card admin down, c - card oper down
L - link port admin down, l - linkport oper down
A - asic admin down, a - asic oper down
B - bundle port admin Down, b - bundle port oper down
I - bundle admin down, i - bundle oper down
N - node admin down, n - node down
o - other end of link down d - data down
f - failed component downstream
m - plane multicast down

Sfe Port Admin Oper Down Sfe BP Port BP Other
R/S/M/A/P State State Flags Role Role End
------------------------------------------------------------------
0/1/CPU0/0/0 UP UP A A 0/SM0/SP/0/15
--------------------------------------------------
Link Type Pin1 Name Pin2 Name
--------------------------------------------------
CHASSIS G5 A4

Sfe Port Admin Oper Down Sfe BP Port BP Other
R/S/M/A/P State State Flags Role Role End
------------------------------------------------------------------
0/1/CPU0/0/1 UP UP A B 0/SM0/SP/0/39
--------------------------------------------------
Link Type Pin1 Name Pin2 Name
--------------------------------------------------
CHASSIS G19 A34

Sfe Port Admin Oper Down Sfe BP Port BP Other
R/S/M/A/P State State Flags Role Role End
------------------------------------------------------------------
0/1/CPU0/0/2 UP UP A A 0/SM0/SP/0/14
--More--
```

show controllers fabric plane

To display system fabric plane information, use the **show controllers fabric plane** command in Admin EXEC mode.

show controllers fabric plane {*plane-id* | **all**} [**statistics**] [{**brief** | **detail**}]

Syntax Description

plane-id	Plane number. Range is from 0 to 7.
all	Specifies that all information about system fabric planes is displayed.
statistics	(Optional) Specifies statistical information for cell activity within the plane.
brief	(Optional) Specifies brief information about the system fabric plane. This is the default.
detail	(Optional) Specifies detailed information about the system fabric plane.

Command Default

Brief information is displayed

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show controllers fabric plane** command to monitor the fabric plane status, and the cell traffic and error statistics to or from the fabric plane.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is sample output from the **show controllers fabric plane** command that displays system fabric plane information from all fabric planes:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric plane all

Plane  Admin   Oper       Down       Total     Down
 Id     State   State      Flags      Bundles   Bundles
 ------------------------------------------------------
 0      UP      DOWN       p          0         0
 1      UP      UP                    0         0
 2      UP      DOWN       p          0         0
 3      UP      DOWN       p          0         0
 4      UP      DOWN       p          0         0
 5      UP      DOWN       p          0         0
 6      UP      DOWN       p          0         0
```

```
 7       UP       DOWN       p           0          0
```

The following is sample output from the **show controllers fabric plane** command that displays system fabric plane statistics from fabric plane 1 in brief form:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric plane 1 statistics brief

                       In                 Out       CE        UCE       PE
Plane                 Cells              Cells     Cells     Cells     Cells
--------------------------------------------------------------------------------
  1                       0                  0         0         0         0
```

The following is sample output from the **show controllers fabric plane** command that displays system fabric plane statistics from fabric plane 1 in detailed form:

```
RP/0/RP0/CPU0:router(admin)# show controllers fabric plane 1 statistics detail

The fabric plane number is 1
  Total number of providers for the statistics: 0
  Total received data cells: 0
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never
```

The following is sample output from the **show controllers fabric plane** command that displays system fabric plane statistics from the fabric for all planes in detailed form:

```
RP/0/RP0/CPU0:router(admin)# show controllers fabric plane all statistics detail

The fabric plane number is 0
  Total number of providers for the statistics: 0
  Total received data cells: 0
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never

The fabric plane number is 1
  Total number of providers for the statistics: 0
  Total received data cells: 0
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never

The fabric plane number is 2
  Total number of providers for the statistics: 0
  Total received data cells: 0
```

```
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never

The fabric plane number is 3
  Total number of providers for the statistics: 0
  Total received data cells: 0
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never

The fabric plane number is 4
  Total number of providers for the statistics: 0
  Total received data cells: 0
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never

The fabric plane number is 5
  Total number of providers for the statistics: 0
  Total received data cells: 0
  Total transmitted data cells: 0
  Total received correctable errored cells: 0
  Total received uncorrectable errored cells: 0
  Total received parity error cells: 0
  Total unicast lost cells: 0
  Total multicast lost cells: 0
  Last clearing of "show controller fabric plane" counters never
```

This table describes the significant fields shown in the display.

Table 35: show controllers fabric plane Field Descriptions

Field	Description
The fabric plane number is 1	Fabric plane ID number.
Total number of providers for the statistics	Number of providers (sources) from which statistics were extracted.
Total received data cells	Total of data cells that have been received.
Total received correctable errored cells	Total number of cells with errors that can be corrected.
Total received uncorrectable errored cells	Total number of cells with errors that cannot be corrected.
Total received parity error cells	Total number of cells that have parity errors.
Total unicast lost cells	Number of lost unicast cells.

Field	Description
Last clearing of “show controller fabric plane” counters	Indicates when the fabric plane counters were last cleared.

show controllers fabric rack all

To display information about the fabric racks in the current system, use the **show controllers fabric rack all** command in Admin EXEC mode.

show controllers fabric rack all [{**brief** | **detail**}]

Syntax Description

brief	(Optional) Displays summarized fabric rack information.
detail	(Optional) Specifies that the command output includes detailed fabric rack information.

Command Default

Use the **show controllers fabric rack all** command without including any of the optional syntax to display detailed information about all fabric card racks in the current system.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

Use the **show controllers fabric rack all** command to display fabric rack topology information.

Task ID

Task ID	Operations
fabric	read

Examples

The following example shows sample output from the **show controllers fabric rack all** command:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric rack all

Rack Rack Server
Num Status Status
---- ------ ------

0 NORMAL PRESENTRP/0/RP0/CPU0:router(admin)#
```

show controllers fabric sfe

To display information about a specific switch fabric element, use the **show controllers fabric sfe** command in Admin EXEC mode.

show controllers fabric sfe {**fabricq** | **ingressq** | **s1** | **s2** | **s3**} {*port* | **all**} [{**backpressure** | **brief** | **detail**}]

Syntax Description

fabricq	Displays information from the fabric queue for the switching fabric element.
ingressq	Displays information from the ingress queue for the switching fabric element.
s1	Displays information about Stage 1 (S1) switch fabric elements. S1 elements distribute traffic.
s2	Displays information about Stage 2 (S2) switch fabric elements. S2 elements forward cells to Stage 3 (S3) elements.
s3	Displays information about S3 switch fabric elements. S3 elements perform switching.
port	Specifies the port that owns the switch fabric element you want to display. Replace the *port* argument with the port number, in the *rack*/*slot*/*module*/*ASIC*/*port* format. **Note** A slash between values is required as part of the *port argument* notation.
all	Displays information about the switch fabric elements on all ports in the system.
backpressure	(Optional) Displays back-pressure information for the specified switch fabric elements.
brief	(Optional) Displays summarized information for the specified switch fabric elements.
detail	(Optional) Includes detailed information about the specified switch fabric elements in the command output.

Command Default

Use the **show controllers fabric sfe** command without specifying any of the optional parameters to display detailed information about a specified switch fabric element.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
fabric	read

Examples

The following example shows sample output from the **show controllers fabric sfe** command:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabric sfe fabricq all

Flags: P - plane admin down, p - plane oper down
C - card admin down, c - card oper down
L - link port admin down, l - linkport oper down
A - asic admin down, a - asic oper down
B - bundle port admin Down, b - bundle port oper down
I - bundle admin down, i - bundle oper down
N - node admin down, n - node down
o - other end of link down d - data down
f - failed component downstream
m - plane multicast down


Sfe Admin Oper
R/S/M/A State State
----------------------------
0/1/CPU0/0 UP UP
0/1/CPU0/1 UP UP
0/3/CPU0/0 UP UP
0/3/CPU0/1 UP UP
0/6/CPU0/0 UP UP
0/6/CPU0/1 UP UP
0/RP0/CPU0/0 UP UP
0/RP1/CPU0/0 UP UP
```

show controllers fabricq barriers

To verify that barriers are flowing through the fabricq ASICs, use the s**how controllers fabricq barriers** command in Admin EXEC mode. If no optional parameter is passed, this command displays the aggregated barrier information for all ASIC instances on all locations.

show controllers fabricq barriers [{**aggrbarr** | **illegal-state** | **inputbarr**}] [**instance** *asic_instance*] [**location** *node-id*]

Syntax Description

aggrbarr	(Optional) Displays ggregated barrier information. Command reads the number of aggregated barrier transitions on this node during a 1 second window for all barrier types, that is , unicast low priority (UCL), unicast high priority (UCH), multicast low priority (MCL) and multicast high priority (MCH). **Note** A count of 0x00000000 at both times for any barrier type indicates a problem with the barrier flow.
llegal-state	(Optional) Displays the number of illegal barrier states seen on all the input links since the registers were cleared last.
inputbarr	(Optional) D isplays the barrier state that is being received on all links at the instant the command is executed.
asic_instance	(Optional) Displays barrier information for a specific fabric queue ASIC. Replace the *asic_instance* argument with the instance that identifies the ASIC whose barrier information you want to display.
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

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
root-system	read, write

Examples

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

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router (admin)#show controllers fabricq barriers aggrbarr location 0/1/CPU0

Location                   : 0/1/CPU0
Asic Instance              : 0
Fabric Destination Address : 4
------------------------------------------------------------------------------
Barrier Config             : 0x6
Barrier Timeout Threshold  : 0x4830
Barrier Mask               : 0
Interrupt Mask             : 0x1fffe
Error Cause                : 0
------------------------------------------------------------------------------
Time        UCH        UCL        MCH        MCL
1210200107  0x00000000 0x00000000 0x00000000 0x00000000.
1210200109  0x00007A9F 0x00007AAA 0x00007AA8 0x00007ABF.
------------------------------------------------------------------------------

Location                   : 0/1/CPU0
Asic Instance              : 1
Fabric Destination Address : 5
------------------------------------------------------------------------------
Barrier Config             : 0x6
Barrier Timeout Threshold  : 0x4830
Barrier Mask               : 0
Interrupt Mask             : 0x1fffe
Error Cause                : 0
------------------------------------------------------------------------------
Time        UCH        UCL        MCH        MCL
1210200109  0x00000000 0x00000000 0x00000000 0x00000000.
1210200110  0x00007AA7 0x00007A8C 0x00007A8A 0x00007A85.
------------------------------------------------------------------------------
```

show controllers fabricq block

To display information about the current usage of packet buffers of various sizes, use the **show controllers fabricq block** command in Admin EXEC mode.

show controllers fabricq block {**errors** | **registers** | **summary**} [*type instance*] [**location** *node-id*]

Syntax Description

errors	Displays information about block errors.
registers	Displays information about block registers.
summary	Displays block summary information.
type instance	Physical interface or a virtual interface. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
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

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.7.0	The **freequeue-manager** keyword was added to this command.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
root-system	read, write

Examples

The following is detailed sample output from the **show controllers fabricq block** command:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# sh controllers fabricq block summary freequeue-manager location
 0/1/CPU$

  Location:  0/1/CPU0
  Asic instance:  0
  Vital Bump-up 'Enabled', Non-vital Bump-up 'Enabled'
+-------------------------------------------------------------------------------+
|Buff |Enabl|Flush|              Buffer References                 |           |
|Size |     |     |  Total  | Current |LowWtMrk |Corruptd |VitalThr |Occupancy |
```

```
+-------------------------------------------------------------------------------+
   120  Yes    No    527916    527880    527874         0       5279   30e42022
   240  Yes    No     77136     77100     77088         0        771   40e41023
   480  Yes    No     77136     77100     77094         0        771   40e42022
   960  Yes    No    133170    133134    133128         0       1331   30e42022
  1920  Yes    No    107400    107364    107358         0       1073   30e42022
  3840  Yes    No     19374     19338     19332         0        193   30e42022
  7680  Yes    No     19374     19338     19332         0        193   30e40024
 15360  Yes    No     21516     21480     21468         0        215   40e41023

  Location:  0/1/CPU0
  Asic instance:  1
  Vital Bump-up 'Enabled', Non-vital Bump-up 'Enabled'
+-------------------------------------------------------------------------------+
|Buff |Enabl|Flush|              Buffer References                 |           |
|Size |     |     |  Total   | Current |LowWtMrk |Corruptd |VitalThr |Occupancy |
+-------------------------------------------------------------------------------+
   120  Yes    No    527916    527880    527874         0       5279   30e42022
   240  Yes    No     77136     77100     77094         0        771   30e41023
   480  Yes    No     77136     77100     77094         0        771   40e42022
   960  Yes    No    133170    133134    133128         0       1331   30e40024
  1920  Yes    No    107400    107364    107358         0       1073   30e42022
  3840  Yes    No     19374     19338     19338         0        193   00240024
  7680  Yes    No     19374     19338     19338         0        193   00240024
 15360  Yes    No     21516     21480     21474         0        215   30e40024
```

show controllers fabricq eio

To display the current state of all the elastic I/O (EIO) information from fabric ASICs to the neighboring ASICs--PSE, Ingress, and FIA, use the **show controllers fabricq eio** command in Admin EXEC mode.

show controllers fabricq eio links {*link_id* | **all**} **location** *node-id*

Syntax Description

link_id	Displays one or more EIO link states. **Note** The range of the *link id* argument is 0 to 4294967295.
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

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
root-system	read, write

Examples

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

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabricq eio links all location 0/1/CPU0

Node: 0/1/CPU0:
----------------------------------------

EIO links:
------------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
------------------------------------------------------------------------
FABRICQ_0   FIA_0       RX   30      1        1      0      EIO_LINK_TRAINED
FABRICQ_0   FIA_0       RX   32      1        1      0      EIO_LINK_TRAINED
FABRICQ_0   FIA_0       RX   34      1        1      0      EIO_LINK_TRAINED
FABRICQ_0   FIA_0       RX   36      1        1      0      EIO_LINK_TRAINED
FABRICQ_0   FIA_1       RX   40      1        1      0      EIO_LINK_TRAINED
FABRICQ_0   FIA_1       RX   42      1        1      0      EIO_LINK_TRAINED
FABRICQ_0   FIA_1       RX   44      1        1      0      EIO_LINK_TRAINED
```

```
FABRICQ_0   FIA_1       RX   46      1       1       0       EIO_LINK_TRAINED
FABRICQ_0   PSE_1       TX   50      0       0       0       EIO_LINK_TRAINED
FABRICQ_1   FIA_0       RX   31      1       1       0       EIO_LINK_TRAINED
FABRICQ_1   FIA_0       RX   33      1       1       0       EIO_LINK_TRAINED
FABRICQ_1   FIA_0       RX   35      1       1       0       EIO_LINK_TRAINED
FABRICQ_1   FIA_0       RX   37      1       1       0       EIO_LINK_TRAINED
FABRICQ_1   FIA_1       RX   41      1       1       0       EIO_LINK_TRAINED
FABRICQ_1   FIA_1       RX   43      1       1       0       EIO_LINK_TRAINED
```

show controllers fabricq fabric-backpressure

To display back-pressure information for the fabric queue ASICs, use the **show controllers fabricq fabric-backpressure** command in EXEC mode and Admin EXEC mode.

show controllers fabricq fabric-backpressure [**summary**] [**instance** *asic_instance*] [**location** *node-id*]

Syntax Description

summary	(Optional) Displays summarized back-pressure information about all fabric queue ASICS in the system. **Note** In Release 5.1.1 and later, the **summary** option projects a list of BP fabric groups the software expects to find in the system based on the number of slots in the chassis and the largest capacity line card model. Each line card can have up to four fabric groups depending on the capacity of the card. Each fabric group is comprised of 32 bits, and the groups are numbered sequentially (0, 1, 2, 3, 4, 5, 6...) across the racks in the system. The **summary** also reports the groups from which BP information is not received only. All group-1 (0, 4, 8, 12) and group-2 (1, 5, 9, 13) instances are reported automatically. Information for group-2 (2, 6, 10, 15) instances are transmitted and reported when a CRS-X card is installed in slot 15 of a 16-slot CRS router.
instance *asic_instance*	(Optional) Displays back-pressure information for a specific fabric queue ASIC. Replace the *asic_instance* argument with the instance that identifies the ASIC whose back-pressure information you want to display. **Note** Enter the **show controllers fabricq fabric-backpressure** command without including any of the optional keywords or arguments to display all fabric queue ASIC instances in the system.
location *node*	Displays back-pressure information for the fabric queue ASICs on a particular node. The *node-id* argument is entered in the *rack*/*slot*/*module* notation. **Note** Use the **show platform** command to see a list of all nodes currently installed in your system.

Command Default

Enter the **show controllers fabricq fabric-backpressure** command without including any of the optional keywords or arguments to display detailed back-pressure information about all fabric queue ASICS in the system.

Command Modes

EXEC mode

Admin EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 5.1.1	The **summary** keyword lists the projected BP fabric groups.

Usage Guidelines

On the fabricq ASICs, a BP Engine configured for each non-empty fabric group present in the system is shown as enabled **Yes** under the Enabled column on all fabricq ASICs in the system.

Task ID

Task ID	Operations
fabric	read
interface	read
drivers	read

Examples

The following example shows sample output from the **show controllers fabricq fabric-backpressure** command when it is entered with the **summary** keyword:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabricq fabric-backpressure summary

Rack 0: All Groups Received? : Yes
```

The following example shows sample output from the **show controllers fabricq fabric-backpressure** command when it is entered without any of the optional keywords:

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabricq fabric-backpressure

Location: 0/1/CPU0
Asic Instance: 0
Fabric Destination Address: 4
BP global Configuration Register: 0xff07

Cluster Number: 0
Primary Link: 0
Secondary Link: 9
Number of Backup links: 14
Backup Links: 8 1 2 10 3 11 27 16 26 17 25 18 24 19
BP enable Mask: 0x4
BP EC: 0
BP IM: 0x1ffe
+-------------------------------------------------------------+
|BP Engine| Enabled |Current Link |Rx group |P Link |S Link |
+-------------------------------------------------------------+
| 0 | No |Secondary | 255 | 0 | 9 |
+-------------------------------------------------------------+
| 1 | No |Secondary | 255 | 0 | 9 |
+-------------------------------------------------------------+
| 2 | Yes |Primary | 0 | 0 | 9 |
+-------------------------------------------------------------+

Location: 0/1/CPU0
Asic Instance: 1
Fabric Destination Address: 5
BP global Configuration Register: 0xff07

Cluster Number: 0
Primary Link: 0
Secondary Link: 9
Number of Backup links: 14
Backup Links: 8 1 2 10 3 11 27 16 26 17 25 18 24 19
```

```
BP enable Mask: 0x4
BP EC: 0
BP IM: 0x1ffe
+-------------------------------------------------------------+
|BP Engine| Enabled |Current Link |Rx group |P Link |S Link |
+-------------------------------------------------------------+
| 0 | No |Secondary | 255 | 0 | 9 |
+-------------------------------------------------------------+
| 1 | No |Secondary | 255 | 0 | 9 |
+-------------------------------------------------------------+
| 2 | Yes |Primary | 0 | 0 | 9 |
+-------------------------------------------------------------+

Location: 0/3/CPU0
Asic Instance: 0
Fabric Destination Address: 12
BP global Configuration Register: 0xff07

Cluster Number: 0
--More--
```

show controllers fabricq health

To display the general condition of a fabricq ASIC, use the **show controllers fabricq health** command in Admin EXEC mode.

show controllers fabricq health [**instance** *asic_instance*] [**location** *node-id*]

Syntax Description

asic_instance	(Optional) Displays health information for a specific fabric queue ASIC. Replace the *asic_instance* argument with the instance that identifies the ASIC whose health information is to be displayed.
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

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read, write
interface	read, write

Examples

The following is detailed sample output from the **show controllers fabricq health** command:

```
RP/0/RP0/CPU0:router#show controllers fabricq health location 0/6/cpu0

  Location:  0/6/CPU0
  Asic Instance:   0
  Fabric Destination Address:    24
  Cpuctrl EC: 00000000
  SN8 Frame: 0x000001         SN8 CRC: 00000000

  Fabric Interface Top level EC: 0
  Block 0 EC: 00000000        Block 1 EC: 00000000
  Block 2 EC: 00000000        Block 3 EC: 00000000
  Block 4 EC: 00000000        Block 5 EC: 00000000
  Block 6 EC: 00000000        Block 7 EC: 00000000
```

```
Ingressq Interface Top level EC: 00000000
BP Cluster 0 EC: 00000000   BP Cluster 1 EC: 00000000
BP Cluster 2 EC: 00000000   BP Cluster 3 EC: 00000000
BP Cluster 4 EC: 00000000   BP Cluster 5 EC: 00000000
BP Cluster 6 EC: 00000000   BP Cluster 7 EC: 00000000
BP Cluster 8 EC: 00000000   BP Cluster 9 EC: 00000000
```

show controllers fabricq link-info

To display the state of the links on a fabricq ASIC, use the **show controllers fabricq link-info** command in Admin EXEC mode.

show controllers fabricq link-info {*link_number* | **all**} [**instance** *asic_instance*] [**location** *node-id*]

Syntax Description

link_number	Link number. Range is from 0 to 31.
asic_instance asic_instance	(Optional) Displays health information for a specific fabric queue ASIC. Replace the *asic_instance* argument with the instance that identifies the ASIC whose health information you want to display.
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

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

The **show controllers fabricq link-info** command displays the state of the links on a fabricq ASIC. Any link that is connected to a plane that is not administratively down or to an fabric board that has been removed, should show as **up** under the columns **Driver State**, **FSDB State** and **Barrier State**. If the driver state is **down**, the column **Errors** would indicate the reason behind it. The column titled **Drv Bar** shows the number of times the driver attempted to bring up a link's driver state and barrier state.

Task ID

Task ID	Operations
root-system	read, write

Examples

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

```
RP/0/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router (admin)# show controllers fabricq link-info all location 0/1/CPU0

Location:  0/1/CPU0
Asic Instance:   0
Fabric Destination Address:     4
Retry period:  0 sec
Link Active bitmap (1=up,0=down):  0xffffffff
+-------------------------------------------------------------------------+
|Link #|Driver state | FSDB state  |Barrier state|Up (Drv Barr)| Errors  |
```

```
+-------------------------------------------------------------------------------+
|     0 |      Up       |      Up       |      Up       |      1   1    |           |
|     1 |      Up       |      Up       |      Up       |      1   1    |           |
|     2 |      Up       |      Up       |      Up       |      1   1    |           |
|     3 |      Up       |      Up       |      Up       |      1   1    |           |
|     4 |      Up       |      Up       |      Up       |      1   1    |           |
|     5 |      Up       |      Up       |      Up       |      1   1    |           |
|     6 |      Up       |      Up       |      Up       |      1   1    |           |
|     7 |      Up       |      Up       |      Up       |      1   1    |           |
|     8 |      Up       |      Up       |      Up       |      1   1    |           |
|     9 |      Up       |      Up       |      Up       |      1   1    |           |
|    10 |      Up       |      Up       |      Up       |      1   1    |           |
|    11 |      Up       |      Up       |      Up       |      1   1    |           |
|    12 |      Up       |      Up       |      Up       |      1   1    |           |
|    13 |      Up       |      Up       |      Up       |      1   1    |           |
```

show controllers fabricq summary

To display the summarized information of the condition of a fabricq ASIC, use the **show controllers fabricq summary** command in Admin EXEC mode.

show controllers fabricq summary [**instance** *asic_instance*] [**location** *node-id*]

Syntax Description

asic_instance	(Optional) Displays health information for a specific fabric queue ASIC. Replace the *asic_instance* argument with the instance that identifies the ASIC whose health information is to be displayed.
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

No default behavior or values

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
drivers	read, write
interface	read, write

Examples

The following is detailed sample output from the **show controllers fabricq summary** command:

```
RP/0/RP0/CPU0:router# show controllers fabricq summary

  Location:  0/6/CPU0
  Asic Instance:   0
  Fabric Destination Address:    24
  Cpuctrl EC: 00000000
  SN8 Frame: 0x000001         SN8 CRC: 00000000

  Fabric Interface Top level EC: 0
  Block 0 EC: 00000000        Block 1 EC: 00000000
  Block 2 EC: 00000000        Block 3 EC: 00000000
  Block 4 EC: 00000000        Block 5 EC: 00000000
  Block 6 EC: 00000000        Block 7 EC: 00000000
```

```
Ingressq Interface Top level EC: 00000000
BP Cluster 0 EC: 00000000   BP Cluster 1 EC: 00000000
BP Cluster 2 EC: 00000000   BP Cluster 3 EC: 00000000
BP Cluster 4 EC: 00000000   BP Cluster 5 EC: 00000000
```

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 Admin EXEC mode.

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

Syntax Description

instance *instance-id*	(Optional) Displays information about a specific ASIC. Replace the *instance-id* argument with an ASIC instance. Range is from 1 through 4.
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

Admin EXEC mode

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/RP0/CPU0:router# admin
RP/0/RP0/CPU0:router(admin)# show controllers fabricq queue location 0/1/CPU0

Fabric Queue Manager Queue Information:
=======================================
Location: 0/1/CPU0
Asic Instance: 0
Fabric Destination Address:  4
CpuCtrl Cast range : 0 - 7
Multicast Range    : 16 - 71
Unicast Quanta in KBytes : 58, Multicast Quanta : 14
+-------------------------------------------------------------------------------+
|Type/Ifname        |Port|Queue| Q |P-quanta|Q-quanta|HighW |LowW  |Q Len  |BW |
|                   | num| num |pri| KBytes | KBytes |KBytes|KBytes|KBytes |(kb|
+-------------------------------------------------------------------------------+
|Cpuctrl Cast       |   0|0 - 7| HI|      13|      13|  1021|   919|      0|   |
```

```
|Multicast           |   0|   17| BE|      13|      13| 26214| 23592|      0|    |
|Multicast           |   0|   18| AF|      13|      13| 26214| 23592|      0|    |
|Multicast           |   0|   20| HI|      13|    1905| 26214| 23592|      0|    |
|POS0/1/4/0          |   1|  129| BE|      13|     450|  1755|  1578|      0|239|
|POS0/1/4/0          |   2|  257| AF|      13|     450|  1755|  1578|      0|239|
|POS0/1/4/0          |   4|  513| HI|    1905|     450|  1755|  1578|      0|239|
|POS0/1/0/0          |   1|  130| BE|      13|      30|   109|    98|      0| 14|
|POS0/1/0/0          |   2|  258| AF|      13|      30|   109|    98|      0| 14|
|POS0/1/0/0          |   4|  514| HI|    1905|      30|   109|    98|      0| 14|
|GigabitEthernet0/1/5/0|   1|  131| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/0|   2|  259| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/0|   4|  515| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/1|   1|  132| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/1|   2|  260| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/1|   4|  516| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/2|   1|  133| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/2|   2|  261| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/2|   4|  517| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/3|   1|  134| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/3|   2|  262| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/3|   4|  518| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/4|   1|  135| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/4|   2|  263| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/4|   4|  519| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/5|   1|  136| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/5|   2|  264| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/5|   4|  520| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/6|   1|  137| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/6|   2|  265| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/6|   4|  521| HI|    1905|     187|   732|   658|      0||
|GigabitEthernet0/1/5/7|   1|  138| BE|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/7|   2|  266| AF|      13|     187|   732|   658|      0||
|GigabitEthernet0/1/5/7|   4|  522| HI|    1905|     187|   732|   658|      0||
--More--
```

show controllers fabricq statistics

To display statistics about packet flow through the fabric queue application-specific integrated circuit (ASIC), use the **show controllers fabricq statistics** command in EXEC mode.

show controllers fabricq statistics [**instance** *instance*] [**location** *node-id*]

Syntax Description

instance *instance*	(Optional) Specifies instance and number for a single fabric queue ASIC. The *instance* argument is a number from 0 to 4.
location *node-id*	(Optional) Specifies statistical packet flow information for the designated node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

Information for all fabric queue ASICs for all locations is displayed

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 3.3.0	The **show controllers fabricq packet-stats**command was replaced by the **show controllers fabricq statistics**command.

Usage Guidelines

Use the **show controllers fabricq statistics**command to track the number of unicast and multicast packets that are sent from the fabric to the specified node.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following is sample output from the **show controllers fabricq statistics**command that displays statistics about fabric queue packets that have passed through ASIC 0 on node 0/1/CPU0:

```
RP/0/RP0/CPU0:router# show controllers fabricq statistics instance 0 location 0/1/CPU0

  Fabric Queue Manager Packet Statistics
  ======================================

  Location: 0/1/CPU0
  Asic Instance: 0
  Fabric Destination Address:    32

  Input Cell counters:
  +-------------------------------------------------------------+
  Data cells           :            42356 (+              22 )
  Control cells        :         29877224 (+           36372 )
```

```
Idle    cells        :     219947284936 (+       267358842 )
BP Asserted Count    :                0 (+               0 )
MC BP Asserted Count :                0 (+               0 )

Reassembled packet counters
+-----------------------------------------------------------+
Ucast pkts           :                0 (+               0 )
Mcast pkts           :                0 (+               0 )
Cpuctrlcast pkts     :            21159 (+              11 )

Dropped packets
+-----------------------------------------------------------+
Ucast pkts           :                0 (+               0 )
Mcast pkts           :                0 (+               0 )
Cpuctrlcast pkts     :                0 (+               0 )
Vital denied pkts    :                0 (+               0 )
NonVital denied pkts :                0 (+               0 )
Unicast lost pkts    :                0 (+               0 )
Ucast partial pkts   :                0 (+               0 )
PSM OOR Drops        :                0 (+               0 )
```

This table describes the significant fields shown in the display.

Table 36: show controllers fabricq statistics Field Descriptions

Field	Description
Input Cell counters	Number of cells that have reached the fabric queue ASIC. **Note** The numbers following the colons are the cumulative count since the last time the counts were cleared and those within parentheses are the delta since the last time the driver polled the ASIC.
Control Cells	Carry discard and back-pressure information across the fabric.
Idle Cells	Carry control information in the cell header and keep the links in sync.
Data Cells	All other cells apart from Control cells and Idle cells are counted as data cells, regardless of whether they are CPU bound or E-metro bound.
Reassembled packet counters	Number of packets the fabric queue ASIC has reassembled after transmission over the fabric.
Ucast packet	Number of unicast packets.
Mcast packet	Number of multicast packets.
Cpuctrlcast packet	All the traffic bound for the local CPU of this linecard.
Dropped packets	Number of packets the fabric queue ASIC has had to drop.
Unicast packets	These packets are discarded at the Output Queue Manager block (OQM).
Multicast packets	These packets are discarded at the OQM.
Cpuctrlcast packets	These packets are discarded at the OQM.

Field	Description
Vital denied packets	Represent a condition where buffer references are denied for a vital in the Packet Control Logic (PCL) block of the ASIC.
NonVital denied packets	Represent a condition where buffer references are denied for a non vital in the Packet Control Logic (PCL) block of the ASIC.
Unicast lost packets	Missing packets at the PCL block when packets are retired to the OQM.
Unicast partial packets	Incomplete packets at the PCL block when packets are retired to the OQM.
PSM OOR Drops	Number of packets that had to be dropped because Packet Status Memory (PSM) ran out of entries.

show controllers ingressq capacity

To display ASIC capacity details for the ingress fabric queue, use the **show controllers ingressq capacity** command in EXEC mode.

show controllers ingressq capacity *cap_table* [**location** *node-id*]

Syntax Description

cap_table	Specific capacity table. **Note** The range is from 0 to 4294967295. PMAX=0, Q-MAX=1, and QMIN=3.
location *node-id*	Identifies the location of the ingressq queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display ASIC capactiy information for the ingress fabric queue:

```
RP/0/RP0/CPU0:router#show controllers ingressq capacity 0 location 0/1/CPU0


ingressq capacity table: Port Max capacity
Table id: 0
4       8       12      16      20      24      28      32
36      40      44      48      52      56      60      64
68      72      76      88      108     136     172     216
276     348     436     552     700     884     1116    1408
1780    2248    2836    3584    4528    5724    7228    9136
11540   14580   18420   23272   29404   37152   46936   59304
74924   94664   119600  151108  190916  241212  304756  385040
486472  614628  776548  981120  1239584 1566140 1978724 2500000
```

show controllers ingressq clients

To display all clients connected to the ingress queue manager (IQM), use the **show controllers ingressq clients** command in EXEC mode.

show controllers ingressq clients location *node-id*

Syntax Description

location *node-id*	Identifies the location of the ingress queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display ingressq clients connected to IQM:

```
RP/0/RP0/CPU0:router# show controllers ingressq clients location 0/1/CPU0
------------------------------------------------------------------------------
ingress queue manager clients:
handle name
--------------------------------------------------------------
1       hfr_pm
2       QOS_EA
3       BM-EA HFR DLL
```

show controllers ingressq eio

To display elastic I/O (EIO) information for the ingress queueing ASIC, use the **show controllers ingressq eio** command in EXEC mode.

show controllers ingressq eio links {*link_id* | **all**} [**location** *node-id*]

Syntax Description

link_id	Displays one or more EIO link states. **Note** The range of the *link id* argument is 0 to 4294967295.
all	Indicates that you want to display ingressq eio information for all interfaces in the specified location.
location *node-id*	Identifies the location of the ingress queue manager whose EIO link information you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display EIO information for the ingress fabric queue:

```
RP/0/RP0/CPU0:router# show controllers ingressq eio links all


Node: 0/1/CPU0:
----------------------------------------

EIO links:
--------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
--------------------------------------------------------------------
INGRESSQ_0  PSE_0       RX   10      1        1      0      EIO_LINK_TRAINED
INGRESSQ_0  PSE_0       TX   24      0        0      0      EIO_LINK_TRAINED
INGRESSQ_0  FIA_0       TX   20      0        0      0      EIO_LINK_TRAINED
```

```
INGRESSQ_0  FIA_0       TX   21      0        0      0      EIO_LINK_TRAINED
INGRESSQ_0  FIA_1       TX   22      0        0      0      EIO_LINK_TRAINED
INGRESSQ_0  FIA_1       TX   23      0        0      0      EIO_LINK_TRAINED
INGRESSQ_0  FABRICQ_0   RX   54      1        1      0      EIO_LINK_TRAINED
INGRESSQ_0  FABRICQ_1   RX   55      1        1      0      EIO_LINK_TRAINED

Node: 0/4/CPU0:
----------------------------------------

EIO links:
--------------------------------------------------------------------
ASIC Id     Peer Id     Type Link-Id Attempts Accept Failed State
--------------------------------------------------------------------
INGRESSQ_0  FIA_0       TX   20      0        0      0      EIO_LINK_TRAINED
INGRESSQ_0  FABRICQ_0   RX   54      1        1      0      EIO_LINK_TRAINED
INGRESSQ_0  FABRICQ_1   RX   55      1        1      0      EIO_LINK_TRAINED
--------------------------------------------------------------------------
```

show controllers ingressq fabric

To display various parameters of ingressq and switching fabric connectivity, use the **show controllers ingressq fabric** command in EXEC mode.

show controllers ingressq fabric {**asic** | **detail** | **links** | **pla**} [**location** *node-id*]

Syntax Description

asic	Displays ASIC states.
detail	Displays fabric state information.
links	Displays link states information.
pla	Displays plane availability information for unicast and multicast.
location *node-id*	Identifies the location of the ingressq queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display various parameters of ingressq and switching fabric connectivity for all fabric interfaces:

```
RP/0/RP0/CPU0:router# show controllers ingressq fabric links location 0/1/CPU0
Ingressq link state
plane-id    link-id     ADMIN-STATE OPER-STATE  AVAIL-STATE UP-COUNT
------------------------------------------------------------------------
0           0           UP          UP          UP          1
0           8           UP          UP          UP          1
0           16          UP          UP          UP          1
0           24          UP          UP          UP          1
1           1           UP          UP          UP          1
1           9           UP          UP          UP          1
1           17          UP          UP          UP          1
```

```
1           25          UP          UP          UP          1
2           2           UP          UP          UP          1
2           10          UP          UP          UP          1
2           18          UP          UP          UP          1
2           26          UP          UP          UP          1
3           3           UP          UP          UP          1
3           11          UP          UP          UP          1
3           19          UP          UP          UP          1
3           27          UP          UP          UP          1
4           4           UP          UP          UP          1
4           12          UP          UP          UP          1
4           20          UP          UP          UP          1
4           28          UP          UP          UP          1
5           5           UP          UP          UP          1
5           13          UP          UP          UP          1
5           21          UP          UP          UP          1
5           29          UP          UP          UP          1
6           6           UP          UP          UP          1
6           14          UP          UP          UP          1
6           22          UP          UP          UP          1
6           30          UP          UP          UP          1
7           7           UP          UP          UP          1
7           15          UP          UP          UP          1
7           23          UP          UP          UP          1
7           31          UP          UP          UP          1
------------------------------------------------------------------------
```

show controllers ingressq interfaces

To display the ingressq shape queue and parameters associated with the physical interfaces on the card, use the **show controllers ingressq interfaces** command in EXEC mode.

show controllers ingressq interfaces {*type instance* | **all**} [**location** *node-id*]

Syntax Description

type instance	Physical interface or a virtual interface. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
all	Indicates that you want to display ingressq queue information for all interfaces in the specified location.
location *node-id*	Identifies the location of the ingress queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display the ingressq shape queue and parameters associated with the physical interfaces on the card:

```
RP/0/RP0/CPU0:router# show controllers ingressq interfaces all location 0/1/CPU0

iqm interfaces:
legend:: #sub: num sub intf, rc: reference count, indx: demux num.
-------------------------------------------------------------------------------
name                intf hd    parent hd  #sub indx def-port ports rc    Owner
-------------------------------------------------------------------------------
Bundle-POS24        0x80050    0x0        0    0    25       1     3     hfr_pm
Bundle-Ether28      0x80070    0x0        3    0    26       1     6     hfr_pm
Bundle-Ether28.1    0x80090    0x80070    0    0    26       1     3     hfr_pm
Bundle-Ether28.2    0x800b0    0x80070    0    0    26       1     3     hfr_pm
```

```
Bundle-Ether28.3    0x800d0    0x80070    0    0    26       1     3     hfr_pm
POS0_1_0_0          0x1180060  0x0        0    0    9        1     3     hfr_pm
POS0_1_4_0          0x11800c0  0x0        0    0    8        1     3     hfr_pm
TenGigE0_1_1_0      0x11800e0  0x0        0    0    18       1     3     hfr_pm
GigabitEthernet0_1_5_00x1180100  0x0        0    0    10       1     3     hfr_m
GigabitEthernet0_1_5_10x1180120  0x0        0    0    11       1     3     hfr_m
GigabitEthernet0_1_5_20x1180140  0x0        0    0    12       1     3     hfr_m
GigabitEthernet0_1_5_30x1180160  0x0        0    0    13       1     3     hfr_m
GigabitEthernet0_1_5_40x1180180  0x0        0    0    14       1     3     hfr_m
GigabitEthernet0_1_5_50x11801a0  0x0        0    0    15       1     3     hfr_m
GigabitEthernet0_1_5_60x11801c0  0x0        0    0    16       1     3     hfr_m
GigabitEthernet0_1_5_70x11801e0  0x0        0    0    17       1     3     hfr_m
POS0_1_4_1          0x1180240  0x0        0    0    19       1     3     hfr_pm
--More--
```

show controllers ingressq queues

To display information about the ingressq shape queues and parameters that have been created for the ingress interfaces, use the **show controllers ingressq queues** command in EXEC mode.

show controllers ingressq queues {*queue_handle* | **all**} [**location** *node-id*]

Syntax Description

queue_handle	Specific queue marked by a unique number. Range is from 0 to 4294967295.
all	Indicates that you want to display ingressq queue information for all interfaces.
location *node-id*	Identifies the location of the ingressq queue whose statistics you want to display. The *node-id* is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.8.0	The *queue handle* argument range of 0 to 4294967295 was added.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display the ingressq shape queues and parameters that have been created for the ingress interfaces:

```
RP/0/RP0/CPU0:router# show controllers ingressq queues all location 0/1/CPU0

iqm queues:
legend: (*) default q, LP low priority,HP high priority, bs burst sizebw (kbps).
name              owner    q-hd  port  type max_bw   min_bw  max_bs  min_bs  qut
-------------------------------------------------------------------------------
default_queue(*)  hfr_pm   32    8     LP   2396160  0       650     0       25
default_queue(*)  hfr_pm   33    9     LP   149760   0       533     0       1
default_queue(*)  hfr_pm   34    10    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   35    11    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   36    12    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   37    13    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   38    14    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   39    15    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   40    16    LP   1000192  0       638     0       10
```

```
default_queue(*)  hfr_pm   41    17    LP   1000192  0       638     0       10
default_queue(*)  hfr_pm   42    18    LP   10000128 0       511     0       10
default_queue(*)  hfr_pm   43    19    LP   2396160  0       650     0       25
default_queue(*)  hfr_pm   44    20    LP   149760   0       533     0       1
default_queue(*)  hfr_pm   45    21    LP   2396160  0       650     0       25
default_queue(*)  hfr_pm   46    22    LP   149760   0       533     0       1
default_queue(*)  hfr_pm   47    23    LP   2396160  0       650     0       25
default_queue(*)  hfr_pm   48    24    LP   149760   0       533     0       1
default_queue(*)  BM-EA HFR DLL49    25    LP   4792320  0       588     0
default_queue(*)  BM-EA HFR DLL50    26    LP   2000000  0       578     0
```

show controllers ingressq statistics

To display ingress queue manager statistics, use the **show controllers ingressq statistics** in EXEC mode.

show controllers ingressq statistics [**location** *node-id*]

Syntax Description

location *node-id*	Identifies the location of the ingress queue whose statistics you want to display. The *node-id* argument is expressed in the *rack/slot/module* 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 mode

Command History

Release	Modification
Release 3.2	This command was introduced.
Release 3.6.0	The **location** *node-id* keyword and argument were changed from required to optional.

Usage Guidelines

Note In the **show controllers ingressq statistics** command display, the *rx pkts* counter field may wrap if it is calculating line rate traffic.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display ingress queue manager statistics:

```
RP/0/RP0/CPU0:router# show controllers ingressq statistics location 0/2/CPU0

Ingressq Rx Statistics.
------------------------------------------------------------------------
rx pkts                    :           131827 (        33509182 bytes)
rx pkts from cpu           :           102509 (        16422606 bytes)
rx control pkts from cpu   :           102509 (        16422606 bytes)
rx data pkts from cpu      :                0 (               0 bytes)

Ingressq Tx Statistics.
------------------------------------------------------------------------
```

```
tx pkts                    :           131826 (        35086366 bytes)
tx pkts to cpu             :            29318 (        17086576 bytes)
tx control pkts to cpu     :            29318 (        17086576 bytes)
tx data pkts to cpu        :                0 (               0 bytes)
tx pkts shaped             :           102508 (        17999790 bytes)
tx cells to fabric         :           223190

Ingressq Drops.
------------------------------------------------------------------------------
length error drops - PSE     :               0
length error drops - Cpuctrl :               0
crc error drops - PSE        :               0
crc error drops - Cpuctrl    :               0
OOR error drops - PSE        :               0
OOR error drops - Cpuctrl    :               0
discard drops                :               0
tail drops                   :               0
tail drops - no QE           :               0
cell drops                   :               0
```

This table describes the significant fields shown in the display.

Table 37: show controllers ingressq statistics Field Descriptions

Field	Description
Ingressq Rx Statistics	Displays the following receive statistics: • rx pkts—Total number of packets received; also shown in bytes. • rx pkts from cpu—Number of packets received from the CPU; also shown in bytes. • rx control pkts from cpu—Number of control packets received; also shown in bytes. • rx data pkts from cpu—Number of data packets received; also shown in bytes.
Ingressq Tx Statistics	Displays the following transmit statistics: • tx pkts—Total number of packets transmitted; also shown in bytes. • tx pkts to cpu—Number of packets transmitted from the CPU; also shown in bytes. • tx control pkts to cpu—Number of control packets transmitted; also shown in bytes. • tx data pkts to cpu—Number of data packets transmitted; also shown in bytes. • tx pkts shaped—Number of shaped data packets transmitted; also shown in bytes. • tx cells to fabric—Number of cells that were transmitted to the switch fabric; also shown in bytes.

Field	Description
Ingressq Drops	Displays the following ingress queue drop statistics: • length error drops - PSE—Number of packets that were dropped by the PSE due to length errors. • length error drops - Cpuctrl—Number of packets that were dropped by the CPU controller due to length errors. • crc error drops - PSE—Number of packets that were dropped by the PSE due to CRC errors. • crc error drops - Cpuctrl—Number of packets that were dropped by the CPU controller due to CRC errors • OOR error drops - PSE—Number of packets that were dropped by the PSE due to OOR errors. • OOR error drops - Cpuctrl—Number of packets that were dropped by the CPU controller due to OOR errors. • discard drops—Number of packets that were discarded. • tail drops—Number of packets discarded for this class because the queue was full. • tail drops - no QE—Number of packets dropped due to unavailability of the ingress Queue Engine (QE). • cell drops—Number of cells that were dropped by the ingress queue.

show controllers ingressq vports

To display information about the ingressq virtual ports and its parameters that have been created for the ingressq interfaces, use the **show controllers ingressq vports** command in EXEC mode.

show controllers ingressq vports {*port_handle* | **all**} [**location** *node-id*]

Syntax Description

port_handle	Specific virtual port or range of ports. Range is from 0 to 4294967295.
all	Indicates that you want to display ingressq virtual ports.
location *node-id*	Identifies the location of the ingress queue whose statistics you want to display. The *node-id* is expressed in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced .
Release 3.8.0	The *port handle* argument range of 0 to 4294967295 was added.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
interface	read
drivers	read

Examples

The following example shows how to display a list of ingressq virtual ports:

```
RP/0/RP0/CPU0:router# show controllers ingressq vports all location 0/1/CPU0

ingressq virtual ports:
bw (kbps), bs (usec), quant(10s of 2*Fab MTU).
name           port-# intf-hd    def-q      # Qs  rc  max-bw   max-bs  quant  o
-------------------------------------------------------------------------------
default_port   8      0x11800c0  32         1     6   2396160  74924   48   hfr
default_port   9      0x1180060  33         1     6   149760   5724    2    hfr
default_port   10     0x1180100  34         1     6   1000192  37152   19   hfr
default_port   11     0x1180120  35         1     6   1000192  37152   19   hfr
default_port   12     0x1180140  36         1     6   1000192  37152   19   hfr
default_port   13     0x1180160  37         1     6   1000192  37152   19   hfr
default_port   14     0x1180180  38         1     6   1000192  37152   19   hfr
default_port   15     0x11801a0  39         1     6   1000192  37152   19   hfr
default_port   16     0x11801c0  40         1     6   1000192  37152   19   hfr
default_port   17     0x11801e0  41         1     6   1000192  37152   19   hfr
```

```
default_port   18     0x11800e0  42         1     6   10000128 385040  200  hfr
default_port   19     0x1180240  43         1     6   2396160  74924   48   hfr
default_port   20     0x11802a0  44         1     6   149760   5724    2    hfr
default_port   21     0x1180300  45         1     6   2396160  74924   48   hfr
default_port   22     0x1180360  46         1     6   149760   5724    2    hfr
default_port   23     0x11803c0  47         1     6   2396160  74924   48   hfr
default_port   24     0x1180420  48         1     6   149760   5724    2    hfr
default_port   25     0x80050    49         1     6   4792320  151108  95   BM-L
default_port   26     0x80070    50         1     12  2000000  74924   40   BM-L
-
```

Tech-Support Commands

This module describes commands used for displaying the output of **show** commands using Cisco IOS XR software software. The command output varies depending on the router platform and configuration.

The **show tech-support** commands all display common data from commands such as **show version** . Each **show tech-support** command also generates and gathers relevant data for a specific area. This data includes trace output to collect debugging information available in the specific area of interest.

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

show system verify

To verify the system parameters, use the **show system verify** command in EXEC mode.

show system verify [{**start** | **restart** [**detail**]}]

Syntax Description

start	(Optional) Performs an initial analysis of the system and stores the information for subsequent verification.
report	(Optional) Generates a report for the system verification process.
detail	(Optional) Generates a detailed report for the system verification process.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

You must run the **show system verify** command with the **start** keyword before generating any reports.

Task ID

Task ID	Operations
system	read

Examples

The following example shows how to prepare for system verification:

```
RP/0/RP0/CPU0:router# show system verify start

Storing initial router status ...
done.
```

The following example shows output from running the **show system verify** command:

```
RP/0/RP0/CPU0:router#  show system verify

Getting current router status ...
System Verification Report
==========================
- Verifying Memory Usage
- Verified Memory Usage                                  : [OK]
```

```
- Verifying CPU Usage
- Verified CPU Usage                                  : [OK]

- Verifying Blocked Processes
- Verified Blocked Processes                          : [OK]
- Verifying Aborted Processes
- Verified Aborted Processes                          : [OK]
- Verifying Crashed Processes
- Verified Crashed Processes                          : [OK]

- Verifying LC Status
- Verified LC Status                                  : [OK]
- Verifying QNET Status
Unable to get current LC status info
- Verified QNET Status                                : [FAIL]

- Verifying GSP Fabric Status
- Verified GSP Fabric Status                          : [OK]
- Verifying GSP Ethernet Status
  gsp WARNING messages for router
  Current set of gsp ping nodes does not match initial set of nodes
- Verified GSP Ethernet Status                        : [WARNING]

- Verifying POS interface Status
- Verified POS interface Status                       : [OK]
- Verifying TenGigE interface Status
- Verified TenGigE interface Status                   : [OK]

- Verifying TCP statistics
- Verified TCP statistics                             : [OK]
- Verifying UDP statistics
  tcp_udp_raw WARNING messages for router
  UDP Packets sent has not increased during this period.
- Verified UDP statistics                             : [WARNING]
- Verifying RAW statistics
- Verified RAW statistics                             : [OK]

- Verifying RIB Status
- Verified RIB Status                                 : [OK]
- Verifying CEF Status
- Verified CEF Status                                 : [OK]
- Verifying CEF Consistency Status
- Verified CEF Consistency Status                     : [OK]
- Verifying BGP Status
- Verified BGP Status                                 : [OK]
- Verifying ISIS Status
- Verified ISIS Status                                : [OK]
- Verifying OSPF Status
- Verified OSPF Status                                : [OK]

- Verifying Syslog Messages
- Verified Syslog Messages                            : [OK]

System may not be stable. Please look into WARNING messages.
```

This table describes the significant fields shown in the display.

Table 38: show system verify Field Descriptions

Field	Description
Type	Type of memory

Field	Description
Initial	Initial usage determined when the command is run with the **start** keyword
Current	Current usage
Application	Memory used for applications
Available	Memory available for applications
Physical	Total physical memory
nodes	Devices in the system such as linecards, route processors, fabric cards, and so forth
blocked processes	Number of blocked processes on the router
aborted processes	Number of terminated processes on the router
crashed processes	Number of crashed processes on the router
LC Status on Router	Linecard status
QNET Status on router	Internal communications protocol status
GSP Fabric Status on router	Internal communications protocol status
GSP Ethernet Status on router	Internal communications protocol status
POS Interface Status on router	Packet-over-SONET status
Protocol	Protocol on the interface
IP address	IP Address of the interface
Encapsulation	Encapsulation method used on the interface
MTU	Maximum Transmission Units for the interface
Keep alive	Keep alives messages on the interface
Packets Input	Total number packets input to the interface
Bytes Input	Total number of bytes input to the interface
Packets Output	Total number of packets output by the interface
Byte Output	Total number of bytes output by the interface
TenGigE interface Status on router	10 Gigabit Ethernet interface status
TCP statistics on router	Transmission Control Protocol statistics
UDP statistics on router	User Datagram Protocol statistics
RAW statistics on router	RAW statistics

Field	Description
PCBs	Protocol Control Blocks
RIB Status on router	Routing Information Base status
CEF Status on node.....	Cisco Express Forwarding status
CEF Consistency Status on router	Cisco Express Forwarding consistency status
BGP Status on router	Border Gateway Protocol status
neighbors	Number of BGP neighbors
established	Number of BGP neighbors in ‘established’ state
ISIS Status on router	Intermediate System-to-Intermediate System status
up	Number of ISIS links up
failed	Number of failed ISIS links
init	Initial number of ISIS links
OSPF Status on router	Open Shortest Path First status
interfaces	Number of interfaces configured in OSPF
interfaces_up	Number of interfaces configured in OSPF that are in the ‘up’ state
virtual_int	Number of virtual interfaces
neighbors	Number of OSPF neighbors configured
neighbors_adj	Number of OSPF configured neighbors that are ‘adjacent’
Syslog Messages on router	Number of syslog messages

show tech-support

To automatically run **show** commands that display system information, use the **show tech-support** command in the EXEC mode.

show tech-support [**password**] {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]} [**location** *node-id*]

Syntax Description

password	(Optional) Leaves passwords and other security information in the output. If not used, passwords and other security-sensitive information in the output are replaced with the label "<removed>".
file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

The command output is not compressed.

Passwords and other security information are not displayed.

Command Modes

Admin Configuration mode

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support** command:

- **show running-config**
- **show version**
- **show interfaces**
- **show arm summary**
- **show arm conflicts**
- **show install**
- **show filesystem**
- **dir location all: pwd = disk0:**
- **dir location all: pwd = bootflash:**
- **run top_procs**
- **show processes aborts location all**
- **show processes blocked location all**
- **show placement nodes all**
- **show placement policy program all**
- **show memory summary location all**
- **show lpts ifib brief**
- **show im database all**
- **run gsp_show**
- **show context all location all**
- **show redundancy**
- **show dsc all**
- **show lr all**
- **show ipv4 traffic**
- **show ipv6 traffic**

- **show logging**
- **show inventory**
- **show packet-memory**
- **show packet-memory corrupt**
- **show packet-memory failures**
- **show platform**
- **show led**
- **show buffer reserved-memory**
- **show controllers fabricq eio links all**
- **show controllers pse eio links all**
- **show controllers plim asic pla eio links all**
- **show controllers fia eio links all**
- **show controllers cpuctrl summary**
- **admin show controllers fabric plane all**
- **admin show controllers fabric plane all stat**
- **admin show controllers fabric sfe fabricq all detail**
- **admin show controllers fabric sfe ingressq all detail**
- **admin show controllers fabric sfe s1 all detail**
- **admin show controllers fabric sfe s2 all detail**
- **admin show controllers fabric sfe s3 all detail**
- **show environment all**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read

show tech-support aps

To automatically run **show** commands that display debugging information related to automatic protection switching (APS), use the **show tech-support aps** command in theEXEC mode. This command collects APS traces and sonet local traces across all locations and also **show controller** and **show aps** commands for all ports and groups.

show tech-support aps { file *send-to* [**background | compressed | uncompressed]**} [**location** *node-id*][**rack** *rack-id*][{**show-only**}]

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **lcdisk0:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
show-only	(Optional) Displays the show commands with no trace for APS debugging.
rack *rack-id*	(Optional) Specifies the rack.
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support aps** command to run **show** commands that display APS debugging information. This command generates information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

Task ID

Task ID	Operations
basic-services	read

Examples

The following example shows a truncated output of the **show tech-support aps** command:

```
RP/0/RP0/CPU0:router# show tech-support aps show-only terminal

------------------------------------------------------------------------------

                                show tech-support aps

------------------------------------------------------------------------------


---------------------------------- show aps ----------------------------------

no aps group found


------------------------------ show aps agents -------------------------------

APS shows Agent: sysdb_datalist failed: ('sysdb' detected the 'warning' conditi)

--------------------------- show controller sonet * --------------------------

Port SONET0/6/0/0:

Status: Up
```

```
Loopback: None

SECTION
  LOF = 0          LOS    = 1                            BIP(B1) = 0
LINE
  AIS = 0          RDI    = 1          FEBE = 0          BIP(B2) = 0
PATH
  AIS = 0          RDI    = 1          FEBE = 0          BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x16 (22)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : P11_CRS-4
  Remote interface: POS0/2/0/0
  Remote IP addr  : 10.111.4.11

APS
No APS Group Configured
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 01/0   Remote Tx(K1/K2): 01/0


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: OC3 SR-1/STM1 MM
  Clock source: internal (actual) internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Rx power = 0.0160 mW, -18.0 dBm
  Tx power = 0.0000 mW, -inf dBm
  Tx laser current bias = 0.0 mA

Port SONET0/6/0/1:

Status: Up

Loopback: None

SECTION
  LOF = 0          LOS    = 1                            BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B2) = 0
PATH
```

```
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x16 (22)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : P2_CRS-8
  Remote interface: POS0/6/0/1
  Remote IP addr  : 10.12.8.2

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 01/0   Remote Tx(K1/K2): 01/0


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: OC3 SR-1/STM1 MM
  Clock source: internal (actual) internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Rx power = 0.0223 mW, -16.5 dBm
  Tx power = 0.0000 mW, -inf dBm
  Tx laser current bias = 0.0 mA

Port SONET0/6/0/2:

Status: Down

Loopback: None

SECTION
  LOF = 0          LOS    = 1                           BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
```

```
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x6D (109)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x2 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :
  Remote interface:
  Remote IP addr  :

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2):  1/    Remote Tx(K1/K2):  1/


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: None
  Clock source: internal (actual) line (configured)
  Rx S1: 0xe  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Not Supported

Port SONET0/6/0/3:

Status: Up

Loopback: None

SECTION
  LOF = 0          LOS    = 0                            BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
```

```
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x16 (22)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : PE21_C12406
  Remote interface: POS0/2/0/3
  Remote IP addr  : 10.121.4.21

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 01/0   Remote Tx(K1/K2): 01/0


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: OC3 SR-1/STM1 MM
  Clock source: internal (actual) internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Rx power = 0.0206 mW, -16.9 dBm
  Tx power = 0.0000 mW, -inf dBm
  Tx laser current bias = 0.0 mA

Port SONET0/6/4/0:

Status: Down

Loopback: None

SECTION
  LOF = 0          LOS    = 1                           BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0         NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0xFF (255)   C2_tx = 0x16 (22) / Scrambling Derived
```

```
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :
  Remote interface:
  Remote IP addr  :

APS
No APS Group Configured
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2):  1/    Remote Tx(K1/K2):  1/


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: None
  Clock source: internal (actual) line (configured)
  Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Not Supported

Port SONET0/6/4/1:

Status: Down

Loopback: None

SECTION
  LOF = 0          LOS    = 1                            BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0xFF (255)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :
  Remote interface:
  Remote IP addr  :

APS
No APS Group Configured
```

```
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2):  1/    Remote Tx(K1/K2):  1/


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: None
  Clock source: internal (actual) line (configured)
  Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Not Supported

Port SONET0/6/4/2:

Status: Down

Loopback: None

SECTION
  LOF = 0          LOS    = 1                           BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0         NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0xEF (239)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :
  Remote interface:
  Remote IP addr  :

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2):  1/    Remote Tx(K1/K2):  1/


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6
```

```
  Optics type: None
  Clock source: internal (actual) line (configured)
  Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Not Supported

Port SONET0/6/4/3:

Status: Down

Loopback: None

SECTION
  LOF = 0          LOS    = 1                           BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0         NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0xFF (255)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :
  Remote interface:
  Remote IP addr  :

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2):  1/    Remote Tx(K1/K2):  1/


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: None
  Clock source: internal (actual) line (configured)
  Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Not Supported
```

```
Port SONET0/6/4/4:

Status: Up

Loopback: None

SECTION
  LOF = 0          LOS    = 0                              BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0            BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0            BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0            NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x16 (22)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : P4_C12810
  Remote interface: POS0/3
  Remote IP addr  : 10.14.4.4

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): F1/F   Remote Tx(K1/K2): 00/0


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: OC12 SR-1/STM4 MM
  Clock source: internal (actual) internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Rx power = 0.0184 mW, -17.4 dBm
  Tx power = 0.0000 mW, -inf dBm
  Tx laser current bias = 0.0 mA

Port SONET0/6/4/5:

Status: Up

Loopback: None
```

```
SECTION
  LOF = 0          LOS    = 1                            BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B3) = 0
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x16 (22)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : P2_CRS-8
  Remote interface: POS0/6/4/5
  Remote IP addr  : 10.12.4.2

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 01/0   Remote Tx(K1/K2): 01/0


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: OC12 SR-1/STM4 MM
  Clock source: internal (actual) internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Rx power = 0.0193 mW, -17.1 dBm
  Tx power = 0.0000 mW, -inf dBm
  Tx laser current bias = 0.0 mA

Port SONET0/6/4/6:

Status: Up

Loopback: None

SECTION
  LOF = 1          LOS    = 0                            BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0          BIP(B3) = 0
```

```
  LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0x16 (22)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : P3_C12008
  Remote interface: POS5/2
  Remote IP addr  : 10.13.4.3

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 00/0   Remote Tx(K1/K2): 00/0


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: OC12 SR-1/STM4 MM
  Clock source: internal (actual) internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Rx power = 0.0142 mW, -18.5 dBm
  Tx power = 0.0000 mW, -inf dBm
  Tx laser current bias = 0.0 mA

Port SONET0/6/4/7:

Status: Down

Loopback: None

SECTION
  LOF = 0          LOS    = 1                           BIP(B1) = 0
LINE
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B2) = 0
PATH
  AIS = 0          RDI    = 0          FEBE = 0         BIP(B3) = 0
    LOP = 0          NEWPTR = 0          PSE  = 0          NSE     = 0
  PLM = 0          TIM    = 0          UNEQ = 0

Line delays trigger:      0 ms clear:  10000 ms
Path delays trigger:      0 ms,      0 ms (configured), clear:  10000 ms
Last clearing of "show controllers SONET" counters never
```

```
Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable   C2_rx = 0xF7 (247)   C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :
  Remote interface:
  Remote IP addr  :

APS
No APS Group Configured
  Protect  Channel 0   DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2):  1/    Remote Tx(K1/K2):  1/


BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

  Optics type: None
  Clock source: internal (actual) internal (configured)
  Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
  Not Supported

------------------------------------------------------------------------------

                        show tech-support aps complete

------------------------------------------------------------------------------
```

show tech-support asic

To save a snapshot of ASIC information specific to ASIC debugging, use the **show tech-support asic** command in Admin Configuration mode.

show tech-support asic {*name* | **all** | **cpuctrl** | **fabricq** | **ingressq** | **pse**} {**directory** *path* | **instance** *instance* **directory** *path*} [**location** *node-id*]

Syntax Description

name	ASIC name.
all	Specifies all ASICs.
cpuctrl	Specifies CPU controller ASICs.
fabricq	Specifies fabric queue ASICs.
ingressq	Specifies ingress queue ASICs.
pse	Specifies power sourcing equipment ASICs.
directory	Directory to save the ASIC snapshot in.
path	Path of the directory.
instance	Specifies an ASIC instance.
instance	ASIC instance. Range is 0 to 8.
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

No default behavior or values

Command Modes

Admin Configuration mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Use the **show tech-support asic** command to save an ASIC snapshot. This command generates ASIC information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support ASIC** command:

- **show hfr**
- **show controllers ingressq statistics location**
- **show controllers ingressq block fqm queues location**
- **show asic-errors ingressq 0 all location**
- **show controllers ingressq block brm location**
- **show controllers ingressq block brm aggrbarr location**
- **show controllers ingressq fabric detail location**
- **show controllers ingressq fabric links location**
- **show controllers ingressq fabric pla location**
- **show controllers ingressq eio links all location**
- **show controllers ingressq interfaces all location**
- **show controllers ingressq vports all location**
- **show controllers ingressq queues all location**
- **show controllers ingressq block ssm bpmem 0 location**
- **show controllers asic sprayer in** *nn* **location | exclude** *nn*
- **show controllers fabricq fabric-backpressure location**
- **show controllers fabricq link-info all location**
- **show controllers cpuctrl clients cdma ingressq active location**
- **show controllers cpuctrl clients cdma ingressq detail location**
- **show asic-errors pse 0 all location**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
admin	read

Examples

The following example shows some of the **show tech-support asic** command output:

```
RP/0/RP0/CPU0:router(admin)# show tech-support asic all inst 0 dir net/node0_RP0_CPU0/
harddisk:/asic_snapshots/

results in following files being created with contents..
# pwd
/net/node0_RP0_CPU0/harddisk:/asic_snapshots
# ls -lrt
total 980
.
.
.
```

show tech-support bcdl

To automatically run **show** commands that display information specific to bulk content downloader (BCDL) debugging, use the **show tech-support bcdl** command in EXEC mode.

show tech-support bcdl [*bcdl-group*]
{ file *send-to* [**background | compressed | uncompressed]**} [**location** *node-id*][**rack** *rack-id*]

Syntax Description

bcdl-group	(Optional) Name of the BCDL group.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack *rack-id*	(Optional) Specifies a list of racks.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support bcdl** command to run **show** commands that display information specific to BCDL debugging. The BCDL is used to pass routing information from the Routing Information Base (RIB) to the linecards for Forwarding Information Base (FIB) processing. BCDL also allows Multiprotocol Label Switching (MPLS) to send label information to the FIB and allows Local Packet Transport Services (LPTS) to send information to the linecard processes.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support bcdl** command:

- **show bcdl**
- **show bcdl consumers**
- **show bcdl tables**
- **show process bcdl_agent**
- **show bcdl trace location all**

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read
sysmgr	read

show tech-support bundles

To automatically run **show** commands that display information specific to bundle debugging, use the **show tech-support bundles** command in EXEC mode.

show tech-support bundles { file *send-to* [**background | compressed | uncompressed]** }

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **compactflasha:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support bundles** command for 802.3ad link bundles. This command is used to locate any issues related to bundling.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support cef

To automatically run **show** commands that display information specific to Cisco Express Forwarding (CEF) debugging, use the **show tech-support cef** command in EXEC mode.

show tech-support cef
{ file *send-to* [**background | compressed | uncompressed]**} |
[{**ipv4** | **ipv6** | **mpls**}] [{**A . B . C . D** | **A . B . C . D / length** | **detail** | **file** | **platform** | **location** | **rack**}]
| [location *node-id*]
| [rack*rack-id*]
| [vrf*vrf-name*]

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	(Optional) Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
vrf	(Optional) Specifies a VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of a VRF.
ipv4	(Optional) Specifies IPv4 CEF information.
ipv6	(Optional) Specifies IPv6 CEF information.
mpls	(Optional) Specifies Multiprotocol Label Switching CEF information.
A.B.C.D	(Optional) Specifies IPv4 Prefix entries.
A.B.C.D/length	(Optional) Specifies IPv4 Prefix mask.

detail	(Optional) Specifies detailed CEF debugging information.
brief	(Optional) Specifies a brief CEF debugging information.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Specifies a list of racks.
platform	(Optional) Specifies platform CEF related logs.

Command Default

IPv4 is the default.

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support cef** command to run **show** commands that display information specific to CEF debugging. This command is used to locate any issues related to the Forwarding Information Base (FIB) which is more commonly referred to as Cisco Express Forwarding (CEF). This command generates CEF debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support cef** command:

- show version
- show running
- **show route** {**ipv4** | **ipv6**} **unicast**
- **show proc blocked**

- **show cef** {**ipv4** | **ipv6** | **mpls**} **exceptions**
- **show cef** {**ipv4** | **ipv6** | **mpls**} **drop**
- **show ipv4 interface brief**
- **show cef** {**ipv4** | **ipv6**} **summary**
- **show cef** {**ipv4** | **ipv6** | **mpls**} **interface**
- show cef ipv4 non-recursive
- **show cef** {**ipv4** | **ipv6**}
- **show cef** {**ipv4** | **ipv6** | **mpls**} **adjacency**
- **show mpls forwarding** (if the **mpls** keyword is specified)

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read
cef	read

show tech-support cfgmgr

To automatically run **show** commands that display information to gather information about the configuration manager, use the **show tech-support cfgmgr** command in EXEC mode.

show tech-support cfgmgr [**rack**] [**location** *node-id*] **[file** *send-to* [**background**] [{**compressed** | **uncompressed**}]
]

Syntax Description

rack	Specifies that the command output for a rack.
location *node-id*	Specifies a node. The *node-id* argument is entered in the rack/slot/module notation.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support cfgmgr** command to gather information about the configuration manager. This command is used to locate any issues in regards to executing configuration commands or problems.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support chdlc

To automatically run **show** commands that display debugging information related to Cisco high-level data link control (CHDLC) protocol, use the **show tech-support chdlc** command in the EXEC mode.

show tech-support chdlc [**file** *send-to*] | [**interface** *type interface-path-id*] |[**location** *node-id*] |[**rack**] | [**slow**[**file** | **interface** | **terminal**{**location** | **all** | **page**}]]

Syntax Description

file	(Optional) Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
interface	(Optional) Displays information about a specific interface.
type interface-path-id	Interface type. For more information, use the question mark (?) online help function. *interface-path-id* refers to physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently the router. For more information about the syntax for the router, use the question mark (?) online help function.
slow	(Optional) Displays the debugging output of chdlc.
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays a list of racks.
terminal	Displays the command output on the terminal.

page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the Ctrl-C keys to stop the command output.

Command Default

None.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support chdlc** command to run **show** commands that display CHDLC debugging information. This command generates information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example how to run the **show tech-support chdlc** command on the router:

```
RP/0/RP0/CPU0:router# show tech-support chdlc interface gigabitEthernet 0/6/5/0
```

show tech-support control-ethernet

To automatically run **show** commands that display information specific to control Ethernet debugging, use the **show tech-support control-ethernet** command in EXEC mode.

show tech-support control-ethernet [**fast**] [**location** *node-id*] {**terminal** [**page**] | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}]}

Syntax Description

fast	(Optional) Collects the output simultaneously from multiple line cards ina multi-chassis router.
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support control-ethernet** command to run **show** commands that display information specific to control Ethernet debugging. This command is used to display information specific to Ethernet interface issues. This command generates control Ethernet information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support control-ethernet** command:

- **show version**
- **show controller fabric connectivity all**
- **show controller switch 0 ports** *node-id*
- **show controller switch 1 ports** *node-id*
- **show controller switch 0 statistics** *node-id*
- **show controller switch 1 statistics** *node-id*
- **show controller switch udld** *node-id*
- **show controller switch stp** *node-id*
- **show controller switch inter-rack ports all** *node-id*
- **show controller switch inter-rack statistics brief all** *node-id*
- **show controller switch inter-rack statistics detail all** *node-id*
- **show controller switch inter-rack udld all** *node-id*
- **show controller switch inter-rack stp all** *node-id*
- **show controller backplane ethernet detail** *node-id*
- **show controller backplane ethernet trace** *node-id*

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

The **show tech-support control-ethernet** command also generates log files which are not listed. See the command output for log file information.

Task ID

Task ID	Operations
admin	read

Examples

The following example shows a truncated version of the **show tech-support control-ethernet** command output:

```
RP/0/RP0/CPU0:router(admin)#show tech-support control-ethernet terminal page

 Number of nodes 13

Gathering required commands for show tech control-ethernet

Finding available nodes in the system

Node - 0/1/CPU0

Node - 0/1/SP

Node - 0/4/CPU0

Node - 0/4/CPU1

Node - 0/4/SP

Node - 0/6/CPU0

Node - 0/6/SP

Node - 0/
RP0

/CPU0
Node - 0/
RP1

/CPU0

Node - 0/SM0/SP

Node - 0/SM1/SP

Node - 0/SM2/SP

Node - 0/SM3/SP


------------------------------------------------------------------------------

show tech-support control-ethernet

------------------------------------------------------------------------------


------------------- show version ---------------------------------

Cisco IOS XR Software, Version 3.9.0.20I[DT_IMAGE]
Copyright (c) 2009 by Cisco Systems, Inc.
```

```
ROM: System Bootstrap, Version 1.51(20080807:092259) [CRS-1 ROMMON],

P2_CRS-8 uptime is 1 day, 18 hours, 10 minutes
System image file is "bootflash:disk0/hfr-os-mbi-3.8.0.20I/mbihfr-rp.vm"

cisco CRS-8/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2

4 Management Ethernet
16 GigabitEthernet
20 SONET/SDH
20 Packet over SONET/SDH
1019k bytes of non-volatile configuration memory.
1000592k bytes of disk0: (Sector size 512 bytes).
1000640k bytes of disk1: (Sector size 512 bytes).

Boot device on node 0/1/SP is bootflash:
Package active on node 0/1/SP:
hfr-pagent, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-pagent-3.8.0.20I
Built on Wed Oct 29 17:24:33 DST 2008
By iox13.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-fpd, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fpd-3.8.0.20I
Built on Wed Oct 29 17:02:19 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-diags, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-diags-3.8.0.20I
Built on Wed Oct 29 17:02:01 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-admin, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-admin-3.8.0.20I
Built on Wed Oct 29 16:08:13 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-base, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-base-3.8.0.20I
Built on Wed Oct 29 16:07:35 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-os-mbi, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-os-mbi-3.8.0.20I
Built on Wed Oct 29 15:45:48 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

Configuration register on node 0/1/CPU0 is 0x102
Boot device on node 0/1/CPU0 is mem:
Package active on node 0/1/CPU0:
hfr-services, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-services-3.8.0I
Built on Wed Oct 29 17:03:08 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-pagent, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-pagent-3.8.0.20I
Built on Wed Oct 29 17:24:33 DST 2008
By iox13.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-fpd, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fpd-3.8.0.20I
Built on Wed Oct 29 17:02:19 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-diags, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-diags-3.8.0.20I
Built on Wed Oct 29 17:02:01 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-mcast, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mcast-3.8.0.20I
Built on Wed Oct 29 18:18:37 DST 2008
By iox22.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0
```

```
hfr-mpls, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mpls-3.8.0.20I
Built on Wed Oct 29 18:18:25 DST 2008
By iox22.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-lc, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-lc-3.8.0.20I
Built on Wed Oct 29 16:18:36 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-fwdg, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fwdg-3.8.0.20I
Built on Wed Oct 29 16:13:27 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

--More--
```

show tech-support custom source-file

To automatically run a customised list of **show** commands specified in a text file, use the **show tech-support custom source-file** command in the EXEC mode.

showtech-supportcustom[**source-file**]*file-location*

Syntax Description

custom	Executes the general health check commands specified in the *general.tech* file and collects debugging information. The general health check command list (*general.tech*) is present in the default directory.
source-file	(Optional) Executes customised list of **show** commands specified in a text file and collects debugging information. The source file includes all diagnostics commands from EXEC and sys-admin mode.
file-location	Name of the file. The following valid options are listed: • *filename* • **disk0:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **rootfs:** *filename* • **tftp:** *filename*

Command Default

The command output is compressed.

Passwords and other security information are not displayed.

Command Modes

Admin Configuration mode

EXEC mode

Command History

Release	Modification
Release 6.3.3	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read

The following example shows the output of the **show tech-support custom source-file** command:

```
RP/0/RP0/CPU0:#show tech-support custom source-file disk0:cli.dat
Mon Apr 30 12:11:41.831 UTC
++ Show tech start time: 2018-Apr-30.121148.UTC ++
Mon Apr 30 12:11:49 UTC 2018 Waiting for gathering to complete
...................Mon Apr 30 12:12:55 UTC 2018 Waiting for Sysadmin show tech-support
collection
..........Mon Apr 30 12:19:55 UTC 2018 Please collect Admin show tech-support ctrace in
addition to any sysadmin show-tech-support collection

Mon Apr 30 12:19:56 UTC 2018 Compressing show tech output
Show tech output available at 0/RP0/CPU0 :
/harddisk:/showtech/showtech-custom-2018-Apr-30.121148.UTC.tgz
++ Show tech end time: 2018-Apr-30.122001.UTC ++
```

The following example shows the output of the **show tech-support custom** command:

```
RP/0/RP0/CPU0#show tech-support custom
Mon Apr 30 12:00:17.780 UTC
++ Show tech start time: 2018-Apr-30.120019.UTC ++
Mon Apr 30 12:00:20 UTC 2018 Waiting for gathering to complete
.....................................................................................
Mon Apr 30 12:05:40 UTC 2018 Compressing show tech output
Show tech output available at 0/RP0/CPU0 :
/harddisk:/showtech/showtech-custom-2018-Apr-30.120019.UTC.tgz
++ Show tech end time: 2018-Apr-30.120541.UTC ++
```

When you execute the **show tech-support custom** command, the general health check commands specified in the *general.tech* file are executed.

show tech-support dsc

To automatically run **show** commands that display information specific to designated shelf controller (DSC) debugging, use the **show tech-support dsc** command in Admin EXEC mode.

show tech-support dsc [**location** *node-id*] {**terminal** [**page**] | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}]}

Syntax Description

location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following are valid options: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Default

The command output is not compressed.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support dsc** command to run **show** commands that display information specific to DSC debugging. This command generates DSC information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support dsc** command:

- **show dsc all**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
admin	read

Examples

The following example shows some of the **show tech-support dsc** command output:

```
RP/0/RP0/CPU0:router(admin)#show tech-support dsc terminal page

------------------------------------------------------------------------------

    show tech-support dsc for node node0_RP0_CPU0 from node node0_RP0_CPU0

------------------------------------------------------------------------------


------------------------------------------------------------------------------

                          Displaying DSC information

------------------------------------------------------------------------------
```

```
----------------- Displaying DSC attach_process on this node ------------------


-------------------- run attach_process -p 110638 -i 1 -S ---------------------

Attaching to process pid = 110638 (pkg/bin/dsc)
No tid specified, following all threads

Iteration 1 of 1
------------------------------

Current process = "pkg/bin/dsc", PID = 110638 TID = 1

trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x482005e8 [<N/A>]
trace_back: #6 0x482012cc [<N/A>]

ENDOFSTACKTRACE


Current process = "pkg/bin/dsc", PID = 110638 TID = 2

trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0xfc6368d4 [chk_evm_thread]

ENDOFSTACKTRACE


Current process = "pkg/bin/dsc", PID = 110638 TID = 4

trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x48200f34 [<N/A>]

ENDOFSTACKTRACE


Current process = "pkg/bin/dsc", PID = 110638 TID = 5

trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x48200ddc [<N/A>]

ENDOFSTACKTRACE


Current process = "pkg/bin/dsc", PID = 110638 TID = 6

trace_back: #0 0xfc177518 [MsgReceivev]
```

```
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x48200528 [<N/A>]

ENDOFSTACKTRACE


--------------------------- Displaying show dsc all ---------------------------


---------------------------- run dsc_show_table -a ----------------------------

NODE           ROLE        PRIORITY      TBEACON   PRESENT  MIGRATION
=========================================================================
0/RP0/CPU0     DSC         DEFAULT       300       YES      ENABLED
-------------------------------------------------------------------------
0/RP1/CPU0     BACKUP      DEFAULT       300       YES      ENABLED
-------------------------------------------------------------------------
0/4/CPU0       NON-DSC     65            300       YES      ENABLED
-------------------------------------------------------------------------
0/4/CPU1       NON-DSC     66            300       YES      ENABLED
-------------------------------------------------------------------------


-------------------------- Displaying Rack SerialIDs --------------------------


---------------------------- run dsc_show_table -s ----------------------------

NODE           SERIAL ID
==================================
0/RP0/CPU0     TBA09370035
----------------------------------
0/RP1/CPU0     TBA09370035
----------------------------------
0/4/CPU0       TBA09370035
----------------------------------
0/4/CPU1       TBA09370035
----------------------------------


--------------------- Displaying DSC process on all nodes ---------------------


--------------------- run sysmgr_show -o -A -p dsc -n 513 ---------------------
                  Job Id: 155
                     PID: 110638
         Executable path: /disk0/hfr-admin-3.8.0/bin/dsc
              Instance #: 1
              Version ID: 00.00.0000
                 Respawn: ON
           Respawn count: 1
  Max. spawns per minute: 12
            Last started: Fri Mar 16 14:56:35 2007
           Process state: Run
           Package state: Normal
                    core: COPY
                Max. core: 0
                    Level: 40
                Mandatory: ON
           MaintModeProc: ON
```

```
            startup_path: /pkg/startup/dsc.startup
                   Ready: 4.382s
         Process cpu time: 891.318 user, 1328.561 kernel, 2219.879 total
JID    TID  Stack pri state         TimeInState       HR:MM:SS:MSEC NAME
155    1      52K  10 Receive        0:00:52:0856    0:00:00:0176 dsc
155    2      52K  10 Receive      326:49:44:0414    0:00:00:0001 dsc
155    4      52K  10 Receive        0:00:00:0083    0:00:01:0127 dsc
155    5      52K  10 Receive        0:00:00:0643    0:00:00:0019 dsc
155    6      52K  55 Receive        0:00:00:0060    0:14:49:0966 dsc
.
.
.
```

show tech-support ethernet

To automatically run **show** commands that display information specific to ethernet debugging, use the **show tech-support ethernet** command in EXEC mode.

show tech-support ethernet[controllers[**file** *send-to* [**background**] [{**compressed**|**uncompressed**}]]] | [**interface** *interface-type interface-instance*] | [**protocols**]

Syntax Description

controllers	Collects the L1 Ethernet controller related information and saves to disk.
file	(Optional) Specifies that the command output is saved to a specified file.
sent-to	(Optional) Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
interface	(Optional) Collects the status and configuration information about a specific interface.
interface-type	Identifies a physical interface or a virtual interface. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
interface-instance	Specifies the interface instance. The argument *interface-instance* is expressed in the rack/slot/module notation.
protocols	(Optional) Specifies the interest for ethernet protocols.

Command Default

IPv4 is the default.

The command output is compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support ethernet** command to run **show** commands that display information specific to VLAN and ethernet infrastructure debugging. This command generates ethernet debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support ethernet** command:

- **show ethernet controller trace**
- **show controllers oper**
- **show controllers phy**
- **show icpe-internal local controller odu-group trace location 0/1/CPU0**
- **show icpe-internal local controller odu-group db location 0/1/CPU0**
- **show process odu_group_ma**
- **show process odu_group_ea**
- **show process blocked**
- **show context**

The following show commands run automatically when you run the show tech-support ethernet command per node:

- **show process blocked**
- **show context**
- **show controllers oper**
- **show controllers bert**
- **show controllers stats**
- **show controllers control**
- **show controllers mac**
- **show controllers internal**
- **show controllers phy**

- **show controllers xgxs**
- **show controllers regs**
- **show ethernet driver trace**
- **show ethernet infra trace**
- **show processes ether_caps_partner**
- **show processes ether_sock**
- **show processes vlan_ma**
- **show processes vlan ea**
- **show ethernet infra internal ether-ma global**
- **show ethernet infra internal ether-ma trunks**
- **show ethernet infra internal vlan-ma global**
- **show ethernet infra internal vlan-ma trunks**
- **show ethernet infra internal vlan-ma subs**
- **show ethernet infra internal ea global**
- **show ethernet infra internal ea trunks**
- **show ethernet infra internal ea subs**
- **show ethernet driver internal all driver-id all**
- **show ethernet driver api-stats location 0/0/CPU0**
- **show ethernet driver api-stats detail all location 0/0/CPU0**
- **show ethernet trace hardware spa**
- **show ethernet trace hardware plim location 0/0/CPU0**
- **show ethernet trace hardware plim location 0/1/CPU0**
- **show ethernet trace hardware plim location 0/2/CPU0**
- **show ethernet ring g8032 status location 0/0/CPU0**
- **show ethernet ring g8032 trace**
- **show process eth_intf_ea**
- **show process eth_intf_ma**
- **show ethernet v-ether db location 0/0/CPU0**
- **show ethernet v-ether trace location 0/0/CPU0**
- **show ethernet cfm trace detail location all**
- **show ethernet cfm servicesshow ethernet cfm interfaces status**
- **show ethernet cfm configuration-errors**
- **show ethernet cfm nv satellite-fabrics**
- **show ethernet cfm nv satellite-links**
- **show ethernet cfm nv host-meps**
- **show ethernet cfm nv satellites**
- **show ethernet cfm local maintenance-points**
- **show ethernet cfm local meps**
- **show ethernet cfm local meps verbose**
- **show ethernet cfm peer meps**
- **show ethernet cfm peer meps detail**
- **show ethernet cfm traceroute-cache**
- **show ethernet cfm traceroute-cache detail**
- **show ethernet cfm ccm-learning-database**
- **show ethernet cfm interface statistics**

- **show ethernet cfm interface ais**
- **show ethernet cfm summary**
- **show ethernet oam trace verbose location all**
- **show ethernet oam trace verbose global-mgr location all**
- **show ethernet oam configuration**
- **show ethernet oam discovery**
- **show ethernet oam interfaces**
- **show ethernet oam statistics**
- **show error-disable**
- **show ethernet loopback trace location all**
- **show ethernet loopback permitted**
- **show ethernet loopback active**
- **show ethernet sla configuration-errors**
- **show ethernet sla operations**
- **show ethernet sla statistics**
- **show ethernet sla statistics detail**
- **show ethernet sla support**
- **show spp offload lib trace location all**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support fabric

To automatically run **show** commands that display information specific to fabric debugging, use the **show tech-support fabric** command in Admin EXEC mode.

show tech-support fabric {**fabric-snapshot** | **multicast** [{**brief** | **detail**}] | **summary** | **traffic** [{**brief** | **detail**}]} [**location** *node-id* [**include-fabric-cards**] [**include-rp**]] [{**email** | **page** | **file** *send-to*}]

Syntax Description

fabric-snapshot	Runs the fabric snapshot script which generates comprehensive data on the instantaneous state of the fabric.
multicast	Specifies fabric multicast information.
brief	(Optional) Displays brief information.
detail	(Optional) Displays detailed information.
summary	Specifies fabric summary information.
traffic	Specifies fabric traffic information.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
include-fabric-cards	(Optional) Specifies fabric card information in addition to the fabric information. This option is available when the **fabric-snapshot** keyword is used.
include-rp	(Optional) Specifies route processor information in addition to the fabric information. This option is available when the **fabric-snapshot** keyword is used.
email	(Optional) Specifies that the command output is sent through email. The output is copied to /disk0:/fabric_multicast.log. **Note** To use the **email** keyword, you must have the SMTP server and domain name and the ability to connect a TCP socket to the specified SMTP server. The **domain ipv4 host** *host-name v4address1* command must be configured to use the server lookup.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	(Optional) Specifies that the command output is saved to a specified file.

sent-to	(Optional) Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*

Command Default

The command output is not compressed.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support fabric** command to run **show** commands that display information specific to fabric debugging. This command generates fabric information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support fabric multicast** command:

- **show controllers fabric fgid stat all detail**
- **show controllers fabric fgid info**
- **show process fgid_allocator**
- **show process fgid_aggregator**
- **show process fgid_server**
- **show process fgid_allocator**

The following **show** commands run automatically when you run the **show tech-support fabric traffic** command:

- **show controllers fabric plane all detail**
- **show controllers fabric plane all stat brief**
- **show controllers fabric plane all stat detail**
- **show controllers fabric link port**
- **show controller fabricq stat**
- **show controllers fabricq queues**
- **show controllers fabricq eio links all**
- **show controller ingressq stat**
- **show controller ingressq queue all**
- **show controller ingressq fabric pla**
- **show control ingressq block ssm bpmem 0**
- **show controllers ingressq block fqm queue**
- **show controllers ingressq vports all**
- **show controllers ingressq interfaces all**
- **show controllers ingressq eio links all**
- **show controller fia rxslice all uq all channel all**
- **show controllers cpuctrl devices ingressq pdma queue all act**
- **show controllers cpuctrl devices egressq pdma queue all act**
- **show controllers cpuctrl devices fabricq pdma queue all act**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
admin	read

show tech-support gsp

To automatically run **show** commands that display information specific to Gigabit Switch Platform (GSP) debugging, use the **show tech-support gsp** command in EXEC mode.

show tech-support gsp [{**client** | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **group** { *group-id* | *group-name* } | **rack** | **location** *node-id*}]

Syntax Description

client	(Optional) Displays the client tech-support information.
group	(Optional) Displays the group tech-support information by *group-id* or *group-name*.
rack	(Optional) Displays the number of racks
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Default The command output is not compressed.

Command Modes EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support gsp** command to run **show** commands that display information specific to GSP debugging. GSP is a common IPC utilized in Cisco IOS XR software to communicate between nodes. This command would be used to determine if there are any issues with GSP communication between nodes. This command generates GSP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support gsp** command:

- **show gsp group addresses**
- **show gsp group admin addresses**
- **show gsp group lr-control addresses**
- **show gsp group gid 0**
- **show gsp group gid 1000**
- **show gsp group gid 2000**
- **show gsp memory**
- **show gsp stats client**
- **show gsp stats server jid 0**
- **show gsp trace server bootstrap location all**
- **show gsp trace server timeout slow location all**
- **show gsp trace server timeout fast location all**
- **show gsp trace server limp fast location all**
- **show gsp trace server limp slow location all**
- **show gsp trace server error api location all**

- **show gsp trace server error minor location all**
- **show gsp trace server ens location all**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read
sysmgr	read

show tech-support igmp snooping

To automatically run **show** commands that display debugging information specific to igmp snooping, use the **show tech-support igmp snooping** command in the EXEC mode.

show tech-support igmp snooping [**file** *send-to*] [**terminal**]

Syntax Description

file	(Optional) Specifies that the command output is saved to a specified file.
send-to	(Optional) Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Command Default

Output is logged to the terminal screen.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates igmp snooping debug information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support igmp snooping** command:

- **show version**
- **show running-config sanitize**
- **show redundancy**
- **show logging**
- **show platform**
- **show install active detail**
- **show install committed detail**
- **show install inactive detail**
- **show pkgfs trace location all**
- **show install trace loadpath location** *node-id*
- **show install trace io location** *node-id*
- **show install trace instdir-lr location** *node-id*
- **show install trace insthelper location** *node-id*
- **show install trace notify location** *node-id*
- **show install trace replicator location** *node-id*
- **show install trace pkg location** *node-id*
- **show install trace inv location** *node-id*
- **show install trace platform location** *node-id*
- **show install trace ior location** *node-id*
- **show install trace state-file-replication location** *node-id*
- **show install trace sds location** *node-id*
- **show memory summary location** *node-id*
- **show context location** *node-id*
- **show processes memory location** *node-id*
- **show processes aborts location** *node-id*
- **show processes blocked location** *node-id*
- **show pkgfs trace location** *node-id*
- **show filesystem location** *node-id*
- **run diskinfo** (various)

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows a truncated version of the **show tech-support igmp snooping** command output:

```
RP/0/RP0/CPU0:router# show tech-support igmp snooping terminal

------------------------------------------------------------------------------

                        show tech-support igmp snooping

------------------------------------------------------------------------------


--------------------------------- show version ---------------------------------

Cisco IOS XR Software, Version 3.9.0[00]
Copyright (c) 2009 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.1(20090521:183759) [ASR9K ROMMON],

MCAST-6 uptime is 6 days, 20 hours, 50 minutes
System image file is "bootflash:disk0/asr9k-os-mbi-3.9.0/mbiasr9k-rp.vm"

cisco ASR9K Series (MPC8641D) processor with 4194304K bytes of memory.
MPC8641D processor at 1333MHz, Revision 2.2

2 Management Ethernet
45 GigabitEthernet
219k bytes of non-volatile configuration memory.
975M bytes of compact flash card.
33994M bytes of hard disk.
1605616k bytes of disk0: (Sector size 512 bytes).
1605616k bytes of disk1: (Sector size 512 bytes).

Configuration register on node 0/RSP0/CPU0 is 0x1922
Boot device on node 0/RSP0/CPU0 is disk0:
Package active on node 0/RSP0/CPU0:
asr9k-scfclient, V 3.9.0[00], Cisco Systems, at disk0:asr9k-scfclient-3.9.0
    Built on Mon Dec 14 12:38:43 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-diags, V 3.9.0[00], Cisco Systems, at disk0:asr9k-diags-3.9.0
    Built on Mon Dec 14 12:38:44 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-mcast, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mcast-3.9.0
    Built on Mon Dec 14 13:33:02 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-mpls, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mpls-3.9.0
    Built on Mon Dec 14 13:31:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
```

```
asr9k-rout, V 3.9.0[00], Cisco Systems, at disk0:asr9k-rout-3.9.0
    Built on Mon Dec 14 12:38:56 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-lc, V 3.9.0[00], Cisco Systems, at disk0:asr9k-lc-3.9.0
    Built on Mon Dec 14 13:28:31 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-fwdg, V 3.9.0[00], Cisco Systems, at disk0:asr9k-fwdg-3.9.0
    Built on Mon Dec 14 12:34:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-admin, V 3.9.0[00], Cisco Systems, at disk0:asr9k-admin-3.9.0
    Built on Mon Dec 14 12:29:39 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-base, V 3.9.0[00], Cisco Systems, at disk0:asr9k-base-3.9.0
    Built on Mon Dec 14 12:32:17 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-os-mbi, V 3.9.0[00], Cisco Systems, at disk0:asr9k-os-mbi-3.9.0
    Built on Mon Dec 14 12:12:19 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

Boot device on node 0/1/CPU0 is mem:
Package active on node 0/1/CPU0:
asr9k-scfclient, V 3.9.0[00], Cisco Systems, at disk0:asr9k-scfclient-3.9.0
    Built on Mon Dec 14 12:38:43 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-diags, V 3.9.0[00], Cisco Systems, at disk0:asr9k-diags-3.9.0
    Built on Mon Dec 14 12:38:44 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-mcast, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mcast-3.9.0
    Built on Mon Dec 14 13:33:02 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-mpls, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mpls-3.9.0
    Built on Mon Dec 14 13:31:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-lc, V 3.9.0[00], Cisco Systems, at disk0:asr9k-lc-3.9.0
    Built on Mon Dec 14 13:28:31 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-fwdg, V 3.9.0[00], Cisco Systems, at disk0:asr9k-fwdg-3.9.0
    Built on Mon Dec 14 12:34:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-admin, V 3.9.0[00], Cisco Systems, at disk0:asr9k-admin-3.9.0
    Built on Mon Dec 14 12:29:39 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-base, V 3.9.0[00], Cisco Systems, at disk0:asr9k-base-3.9.0
    Built on Mon Dec 14 12:32:17 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-os-mbi, V 3.9.0[00], Cisco Systems, at disk0:asr9k-os-mbi-3.9.0
    Built on Mon Dec 14 12:12:19 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

Boot device on node 0/2/CPU0 is mem:
```

```
Package active on node 0/2/CPU0:
asr9k-scfclient, V 3.9.0[00], Cisco Systems, at disk0:asr9k-scfclient-3.9.0
    Built on Mon Dec 14 12:38:43 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-diags, V 3.9.0[00], Cisco Systems, at disk0:asr9k-diags-3.9.0
    Built on Mon Dec 14 12:38:44 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-mcast, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mcast-3.9.0
    Built on Mon Dec 14 13:33:02 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-mpls, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mpls-3.9.0
    Built on Mon Dec 14 13:31:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-lc, V 3.9.0[00], Cisco Systems, at disk0:asr9k-lc-3.9.0
    Built on Mon Dec 14 13:28:31 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-fwdg, V 3.9.0[00], Cisco Systems, at disk0:asr9k-fwdg-3.9.0
    Built on Mon Dec 14 12:34:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-admin, V 3.9.0[00], Cisco Systems, at disk0:asr9k-admin-3.9.0
    Built on Mon Dec 14 12:29:39 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-base, V 3.9.0[00], Cisco Systems, at disk0:asr9k-base-3.9.0
    Built on Mon Dec 14 12:32:17 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

asr9k-os-mbi, V 3.9.0[00], Cisco Systems, at disk0:asr9k-os-mbi-3.9.0
    Built on Mon Dec 14 12:12:19 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0


---------------------- show running-config igmp snooping ----------------------
igmp snooping profile prof1
 ttl-check disable
 router-alert-check disable
!


----------------- show igmp snooping summary statistics debug -----------------

  Bridge Domains:                                 1
  IGMP Snooping Bridge Domains:                   1
  Ports:                                          2
  IGMP Snooping Ports:                            1
  Mrouters:                                       0
  STP Forwarding Ports:                           0
  IGMP Groups:                                    0
    Member Ports:                                 0
  IGMP Source Groups:                             0
    Static/Include/Exclude:                   0/0/0
    Member Ports (Include/Exclude):             0/0
  Traffic Statistics (elapsed time since last cleared 6d20h):
                                  Received  Reinjected   Generated
    Messages:                            0           0           0
      IGMP General Queries:              0           0           0
      IGMP Group Specific Queries:       0           0           0
      IGMP G&S Specific Queries:         0           0           0
```

```
    IGMP V2 Reports:                      0           0           0
    IGMP V3 Reports:                      0           0           0
    IGMP V2 Leaves:                       0           0           0
    IGMP Global Leaves:                   0           -           0
    PIM Hellos:                           0           0           -
  Rx Packet Treatment:
    Packets Flooded:                                  0
    Packets Forwarded To Members:                     0
    Packets Forwarded To Mrouters:                    0
    Packets Consumed:                                 0
  Rx Errors:
    None
  Rx Other:
    None
  Tx Errors:
    None
L2FIB Statistics (elapsed time since last cleared 6d20h):
  BD Created Notifications:                           2
  BD Deleted Notifications:                           1
  EFP Added Notifications:                            9
  EFP Removed Notifications:                          2
  EFP STP Change Notifications:                       4
  BD Topology Change Notifications:                   0
  BD Added:                                           2
  BD Deleted:                                         1
  BD Profile Change:                                  0
  BD Profile Added:                                   0
  BD Profile Removed:                                 0
  BD Batch Start:                                     4
  BD Batch End:                                       4
  BD Mark:                                            0
  BD Sweep:                                           1
  EFP Added:                                          4
  EFP Deleted:                                        2
  EFP Profile Changed:                                0
  EFP Profile Unchanged:                              5
  EFP Profile Added:                                  0
  EFP Profile Removed:                                0
  EFP Oper State To Up:                               3
  EFP Oper State To Down:                             1
  EFP STP State To Forwarding:                        2
  EFP STP State To Blocked:                           0
  EFP STP State To Not Participating:                 0
  EFP Batch Start:                                   10
  EFP Batch End:                                     10
  EFP Mark:                                           0
  EFP Sweep:                                          1
  L2FIB Replay:                                       3
  Mroute Msgs Sent:                                   4
  Cfg Msgs Sent:                                      8
  BDXC Send:                                          8
  Errors:
    None
Network Statistics (elapsed time since last cleared 6d20h):
  Socket Event:                                       0
  Network Connection Open Event:                      2
  Network Connection Close Event:                     0
  Packet Event:                                       2
  Packet Event Disconnect:                            0
  Packet Event Empty:                                 0
  Packet Event Empty Watermark:                       2
  Rx IGMP Packet Attempt:                             0
  Rx IGMP Packet Success:                             0
  Rx PIM Packet Attempt:                              0
```

```
    Rx PIM Packet Success:                          0
    Tx IGMP Packet Attempt:                         0
    Tx IGMP Packet Success:                         0
    Errors:
        None
  Internal Data:
    Ltrace:         Enabled
    Error Debug:    Disabled
    Other Debug:    Disabled
    System Mac:     00:00:00:00:00:00
  Internal Statistics (elapsed time since last cleared 6d20h):
    None


---------- show igmp snooping bridge-domain detail statistics debug -----------

Bridge Domain        Profile              Act  Ver  #Ports  #Mrtrs  #Grps   #SGs
-------------        -------              ---  ---  ------  ------  -----   ----
bg:bd                prof1                  Y   --       2       0      0      0

  Profile Configured Attributes:
    System IP Address:                  0.0.0.0
    Minimum Version:                    2
    Report Suppression:                 Enabled
    Unsolicited Report Interval:        1000 (milliseconds)
    TCN Query Solicit:                  Disabled
    TCN Flood:                          Enabled
    TCN Flood Query Count:              2
    Router Alert Check:                 Disabled
    TTL Check:                          Disabled
    Internal Querier Support:           Disabled
    Querier Query Interval:             60 (seconds)
    Querier LMQ Interval:               1000 (milliseconds)
    Querier LMQ Count:                  2
    Querier Robustness:                 2
  Querier:                              Not Present
  Mrouter Ports:                        0
  STP Forwarding Ports:                 0
  Groups:                               0
    Member Ports:                       0
  V3 Source Groups:                     0
    Static/Include/Exclude:             0/0/0
    Member Ports (Include/Exclude):     0/0
  XID:                                  BD:0x0
  Creation Time:                        1d00h
  Snooping Creation Time:               1d00h
  Flood Mode:                           Disabled
  Star Star Mroute PD Data:
    Size:                               4
    Data:                               0x00 0x00 0x80 0x81
  Client L2Info:
    None
  MTU:                                  1400
  Traffic Statistics (elapsed time since last cleared 5d20h):
                                    Received  Reinjected   Generated
    Messages:                              0           0           0
      IGMP General Queries:                0           0           0
      IGMP Group Specific Queries:         0           0           0
      IGMP G&S Specific Queries:           0           0           0
      IGMP V2 Reports:                     0           0           0
      IGMP V3 Reports:                     0           0           0
      IGMP V2 Leaves:                      0           0           0
      IGMP Global Leaves:                  0           -           0
      PIM Hellos:                          0           0           -
```

```
Rx Packet Treatment:
  Packets Flooded:                                0
  Packets Forwarded To Members:                   0
  Packets Forwarded To Mrouters:                  0
  Packets Consumed:                               0
Rx Errors:
  None
Rx Other:
  None
Tx Errors:
  None
```

show tech-support install

To automatically run **show** commands that display information specific to installation information, use the **show tech-support install** command in the EXEC mode.

show tech-support install [**file** *send-to*[**background**] [{**compressed** | **uncompressed**}]] [**location** *node-id*] [**rack**]

Syntax Description

file	(Optional) Specifies that the command output is saved to a specified file.
send-to	(Optional) Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Default

Output is logged to the terminal screen.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced .

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support install** command to run **show** commands that display information specific to installation information. This command is useful for any problems encountered while executing install operations on the system during an install activate, install add, remove, or commit operation.This command generates installation information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support install** command:

- **show install request**
- **show version**
- **show install active summary**
- **show install committed summary**
- **show install package all detail**
- **show install log verbose**
- **show running-config sanitize**
- **show redundancy**
- **show logging**
- **show platform**
- **show install active detail**
- **show install committed detail**
- **show install inactive detail**
- **show pkgfs trace location all**
- **show install trace loadpath location** *node-id*
- **show install trace io location** *node-id*
- **show install trace instdir-lr location** *node-id*
- **show install trace insthelper location** *node-id*

- **show install trace notify location** *node-id*
- **show install trace replicator location** *node-id*
- **show install trace pkg location** *node-id*
- **show install trace inv location** *node-id*
- **show install trace platform location** *node-id*
- **show install trace ior location** *node-id*
- **show install trace state-file-replication location** *node-id*
- **show install trace sds location** *node-id*
- **show memory summary location** *node-id*
- **show context location** *node-id*
- **show processes memory location** *node-id*
- **show processes aborts location** *node-id*
- **show processes blocked location** *node-id*
- **show pkgfs trace location** *node-id*
- **show filesystem location** *node-id*
- **run diskinfo** (various)

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read
pkg-mgmt	read

show tech-support l2tp

To automatically run **show** commands that display information specific to Layer 2 Tunnel Protocol (L2TP) technical support, use the **show tech-support l2tp** command in EXEC mode.

show tech-support l2tp {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **terminal** [**page**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command collects relevant data for Layer 2 tunneling protocol-related issues that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support l2tp** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support l2tp terminal page

------------------------------------------------------------------------------

          show tech-support l2tp (Detailed output with event traces)

------------------------------------------------------------------------------


-------------------------- show l2tp session detail --------------------------


-------------------------- show l2tp tunnel detail --------------------------


----------------------------- show l2tp internal -----------------------------
L2TP Internal information:
  L2X information:
    Rx high water mark      : 0
    Ave msg process usecs   : 0
    Num rx messages         : 0
    Num tx messages         : 0
    Num reordered msgs      : 0
    Max reorder deviation   : 0
    Num ooo msgs            : 0
    Num rx path drops       : 0
    Num rx q overflow drops : 0
    Num buffered msgs       : 0
  L2TUN information:
```

```
    Ave msg process usecs   : 0
    Num rx messages         : 1
    Num tx messages         : 1

---------------------- show l2tp counters control tunnel ----------------------
Global L2TP tunnel control message statistics:

                XMIT      RE-XMIT         RCVD         DROP
            ==========   ==========   ==========   ==========
ZLB                  0            0            0            0
SCCRQ                0            0            0            0
SCCRP                0            0            0            0
SCCCN                0            0            0            0
StopCCN              0            0            0            0
Hello                0            0            0            0
OCRQ                 0            0            0            0
OCRP                 0            0            0            0
OCCN                 0            0            0            0
ICRQ                 0            0            0            0
ICRP                 0            0            0            0
ICCN                 0            0            0            0
CDN                  0            0            0            0
WEN                  0            0            0            0
SLI                  0            0            0            0
EXP ACK              0            0            0            0
FSQ                  0            0            0            0
FSR                  0            0            0            0
SRRQ                 0            0            0            0
SRRP                 0            0            0            0
CiscoACK             0            0            0            0
Total                0            0            0            0


-------------------- show l2tp counters control tunnel all --------------------


-------------- show l2tp counters control tunnel authentication ---------------
 L2TPv3 Tunnel Authentication Statistics:

------------ show l2tp counters control session fsm state current -------------

Current State   Count
======================
Init            -
Idle            -
Wt-Sock         -
Wt-CC           -
Proc-ICRQ       -
Wt-Rx-ICCN      -
Proc-ICCN       -
Wt-Tx-ICRQ      -
Wt-Tx-ICRP      -
Wt-Tx-ICCN      -
Wt-Rx-ICRP      -
Proc-ICRP       -
established     -
Dead            -

----------- show l2tp counters control session fsm state transition -----------

Old State                     New State

          Idle   Wt   Wt Proc   Wt Proc   Wt   Wt   Wt   Wt Proc esta Dead
 --More-- Building configuration...
```

```
                Sock   CC ICRQ   Rx ICCN   Tx   Tx   Tx   Rx ICRP
                                    ICCN      ICRQ ICRP ICCN ICRP
           ============================================================
Init          -    -    -    -    -    -    -    -    -    -    -    -
Idle          -    -    -    -    -    -    -    -    -    -    -    -
Wt-Sock       -    -    -    -    -    -    -    -    -    -    -    -
Wt-CC         -    -    -    -    -    -    -    -    -    -    -    -
Proc-ICRQ     -    -    -    -    -    -    -    -    -    -    -    -
Wt-Rx-ICCN    -    -    -    -    -    -    -    -    -    -    -    -
Proc-ICCN     -    -    -    -    -    -    -    -    -    -    -    -
Wt-Tx-ICRQ    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Tx-ICRP    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Tx-ICCN    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Rx-ICRP    -    -    -    -    -    -    -    -    -    -    -    -
Proc-ICRP     -    -    -    -    -    -    -    -    -    -    -    -
establishe    -    -    -    -    -    -    -    -    -    -    -    -
Dead          -    -    -    -    -    -    -    -    -    -    -    -

---------------- show l2tp counters control session fsm event -----------------

Event                      State event occurred in

            Idle   Wt   Wt Proc   Wt Proc   Wt   Wt   Wt   Wt Proc esta Dead
                 Sock   CC ICRQ   Rx ICCN   Tx   Tx   Tx   Rx ICRP
                                    ICCN      ICRQ ICRP ICCN ICRP
           ============================================================
Invalid       -    -    -    -    -    -    -    -    -    -    -    -
CC-Up         -    -    -    -    -    -    -    -    -    -    -    -
CC-Down       -    -    -    -    -    -    -    -    -    -    -    -
Sock-Ready    -    -    -    -    -    -    -    -    -    -    -    -
Sock-Down     -    -    -    -    -    -    -    -    -    -    -    -
Sock-Error    -    -    -    -    -    -    -    -    -    -    -    -
App-Conn      -    -    -    -    -    -    -    -    -    -    -    -
App-Disc      -    -    -    -    -    -    -    -    -    -    -    -
Local-Cont    -    -    -    -    -    -    -    -    -    -    -    -
Local-Up      -    -    -    -    -    -    -    -    -    -    -    -
Local-Down    -    -    -    -    -    -    -    -    -    -    -    -
DP-Setup      -    -    -    -    -    -    -    -    -    -    -    -
Rx-ICRQ       -    -    -    -    -    -    -    -    -    -    -    -
ICRQ-OK       -    -    -    -    -    -    -    -    -    -    -    -
ICRQ-ERR      -    -    -    -    -    -    -    -    -    -    -    -
Rx-ICRP       -    -    -    -    -    -    -    -    -    -    -    -
ICRP-OK       -    -    -    -    -    -    -    -    -    -    -    -
ICRP-ERR      -    -    -    -    -    -    -    -    -    -    -    -
Rx-ICCN       -    -    -    -    -    -    -    -    -    -    -    -
ICCN-OK       -    -    -    -    -    -    -    -    -    -    -    -
ICCN-ERR      -    -    -    -    -    -    -    -    -    -    -    -
Rx-CDN        -    -    -    -    -    -    -    -    -    -    -    -
Establishe    -    -    -    -    -    -    -    -    -    -    -    -
Shut          -    -    -    -    -    -    -    -    -    -    -    -
Destroy       -    -    -    -    -    -    -    -    -    -    -    -

--------------------------- show processes l2tp_mgr ---------------------------
                  Job Id: 263
                     PID: 405734
         Executable path: /disk0/hfr-fwdg-3.6.0.16I/bin/l2tp_mgr
              Instance #: 1
              Version ID: 00.00.0000
                 Respawn: ON
           Respawn count: 1
  Max. spawns per minute: 12
            Last started: Thu Oct 11 19:25:05 2007
           Process state: Run
           Package state: Normal
```

```
        core: TEXT SHAREDMEM MAINMEM
   Max. core: 0
       Level: 999
   Placement: ON
startup_path: /pkg/startup/l2tp.startup
```

show tech-support l2vpn

To automatically run **show** commands that display information specific to Layer 2 Virtual Private Network (L2VPN) debugging, use the **show tech-support l2vpn** command in EXEC mode.

show tech-support l2vpn {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **terminal** [**page**] [**rack**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command collects information for Layer 2 VPN related issues that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support l2vpn** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support l2vpn terminal page

------------------------------------------------------------------------------

              show tech-support l2vpn (Detail with Event traces)

------------------------------------------------------------------------------


-------------------------------- show version --------------------------------

Cisco IOS XR Software, Version 3.6.0.16I[SIT1_IMAGE1]
Copyright (c) 2007 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.48(20070928:224557) [CRS-1 ROMMON],

P1_CRS-8 uptime is 4 days, 20 hours, 49 minutes
System image file is "disk0:hfr-os-mbi-3.6.0.16I/mbihfr-rp.vm"

cisco CRS-8/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2

4 T3 Port controller(s)
20 Packet over SONET/SDH network interface(s)
20 SONET/SDH Port controller(s)
4 Serial network interface(s)
4 Ethernet/IEEE 802.3 interface(s)
16 GigabitEthernet/IEEE 802.3 interface(s)
1019k bytes of non-volatile configuration memory.
```

```
38079M bytes of hard disk.
1000592k bytes of ATA PCMCIA card at disk 0 (Sector size 512 bytes).
1000640k bytes of ATA PCMCIA card at disk 1 (Sector size 512 bytes).

Configuration register on node 0/1/CPU0 is 0x102
Boot device on node 0/1/CPU0 is mem:
Package active on node 0/1/CPU0:
hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
    Built on Tue Oct  2 15:07:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.I
    Built on Tue Oct  2 15:58:47 DST 2007
    By iox42.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fpd, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fpd-3.6.0.16I
    Built on Tue Oct  2 14:48:41 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-diags, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-diags-3.6.0.16I
    Built on Tue Oct  2 14:48:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mcast, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mcast-3.6.0.16I
    Built on Tue Oct  2 14:26:29 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mpls, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mpls-3.6.0.16I
    Built on Tue Oct  2 14:22:48 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-lc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-lc-3.6.0.16I
    Built on Tue Oct  2 14:02:24 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fwdg, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fwdg-3.6.0.16I
    Built on Tue Oct  2 13:57:12 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-admin, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-admin-3.6.0.16I
    Built on Tue Oct  2 13:53:07 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-base, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-base-3.6.0.16I
    Built on Tue Oct  2 13:51:10 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-os-mbi, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-os-mbi-3.6.0.I
    Built on Tue Oct  2 13:28:38 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

Configuration register on node 0/4/CPU0 is 0x102
Boot device on node 0/4/CPU0 is disk0:
Package active on node 0/4/CPU0:
hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
    Built on Tue Oct  2 15:07:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.I
    Built on Tue Oct  2 15:58:47 DST 2007
    By iox42.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fpd, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fpd-3.6.0.16I
    Built on Tue Oct  2 14:48:41 DST 2007
```

```
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-doc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-doc-3.6.0.16I
    Built on Tue Oct  2 14:48:52 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-diags, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-diags-3.6.0.16I
    Built on Tue Oct  2 14:48:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mgbl, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mgbl-3.6.0.16I
    Built on Tue Oct  2 14:20:33 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mcast, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mcast-3.6.0.16I
    Built on Tue Oct  2 14:26:29 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mpls, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mpls-3.6.0.16I
    Built on Tue Oct  2 14:22:48 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-rout, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-rout-3.6.0.16I
    Built on Tue Oct  2 14:06:14 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-k9sec, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-k9sec-3.6.0.16I
    Built on Tue Oct  2 14:43:56 DST 2007
    By sjce-gf-074.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-lc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-lc-3.6.0.16I
    Built on Tue Oct  2 14:02:24 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fwdg, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fwdg-3.6.0.16I
    Built on Tue Oct  2 13:57:12 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-admin, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-admin-3.6.0.16I
    Built on Tue Oct  2 13:53:07 DST 2007
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hfr-base, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-base-3.6.0.16I
    Built on Tue Oct  2 13:51:10 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-os-mbi, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-os-mbi-3.6.0.I
    Built on Tue Oct  2 13:28:38 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

Configuration register on node 0/4/CPU1 is 0x102
Boot device on node 0/4/CPU1 is disk0:
Package active on node 0/4/CPU1:
hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
    Built on Tue Oct  2 15:07:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.I
    Built on Tue Oct  2 15:58:47 DST 2007
    By iox42.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fpd, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fpd-3.6.0.16I
    Built on Tue Oct  2 14:48:41 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
```

```
hfr-doc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-doc-3.6.0.16I
    Built on Tue Oct  2 14:48:52 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-diags, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-diags-3.6.0.16I
    Built on Tue Oct  2 14:48:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mgbl, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mgbl-3.6.0.16I
    Built on Tue Oct  2 14:20:33 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mcast, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mcast-3.6.0.16I
    Built on Tue Oct  2 14:26:29 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mpls, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mpls-3.6.0.16I
    Built on Tue Oct  2 14:22:48 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-rout, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-rout-3.6.0.16I
    Built on Tue Oct  2 14:06:14 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-k9sec, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-k9sec-3.6.0.16I
    Built on Tue Oct  2 14:43:56 DST 2007
    By sjce-gf-074.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-lc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-lc-3.6.0.16I
    Built on Tue Oct  2 14:02:24 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fwdg, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fwdg-3.6.0.16I
    Built on Tue Oct  2 13:57:12 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-admin, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-admin-3.6.0.16I
    Built on Tue Oct  2 13:53:07 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-base, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-base-3.6.0.16I
    Built on Tue Oct  2 13:51:10 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-os-mbi, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-os-mbi-3.6.0.I
    Built on Tue Oct  2 13:28:38 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

Configuration register on node 0/6/CPU0 is 0x102
Boot device on node 0/6/CPU0 is mem:
Package active on node 0/6/CPU0:
hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
    Built on Tue Oct  2 15:07:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.I
    Built on Tue Oct  2 15:58:47 DST 2007
    By iox42.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE1/hfr/8

hfr-fpd, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fpd-3.6.0.16I
    Built on Tue Oct  2 14:48:41 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
```

```
hfr-diags, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-diags-3.6.0.16I
    Built on Tue Oct  2 14:48:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8

hfr-mcast, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mcast-3.6.0.16I
    Built on Tue Oct  2 14:26:29 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
```

show tech-support lrd

To automatically run **show** commands that display information specific to logical router daemon (LRD) debugging, use the **show tech-support lrd** command in EXEC mode.

show tech-support lrd {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **location** {*node-id* | **all**} [**rack**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support lrd** command for the LRD debugging, which controls the Secure Domain Router (SDR) architecture. The system always has at least one SDR at any time. It collects relevant information when issues arise with the SDR management within the system. This command can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support lrd** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support lrd terminal page

------------------------------------------------------------------------------

                              show tech-support lrd

------------------------------------------------------------------------------




lrdbg 'i' getting CONFIG INFO
Starting lrdbg commands for local node.
node_name = node0_RP0_CPU0 chan_name is /net/node0_RP0_CPU0/dev/lrd_local
Local nodeid=513 Local lrname=Owner Local lrid = 0
lrdbg: Successfully connected to channel /net/node0_RP0_CPU0/dev/lrd_local

Starting lrdbg commands for node = node0_RP0_CPU0 lrid = 0

DLRSC Info for Node = node0_RP0_CPU0 Nodeid = 0x201 lrid = 0
We are the dLRSC, Backup dLRSC is 0x211

 --More--
 liblrd_dl_node_state_0.dll                  0.0
 liblrd_dl_sw_state_0.dll                    0.0
 liblrd_dl_fwd_ldr_0.dll                     0.0
```

```
 liblrd_alpha_fwd.dll                          1.0
 liblrd_envmon_fwd.dll                         1.0
 liblrd_invmgr_fwd.dll                         1.0
Inventory Info for Node = node0_RP0_CPU0 lrid = 0
Success: node_count=6, ready=1
node=0x11, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0 lr_n0
node=0x41, type=1, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1 lr_nf
node=0x42, type=1, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1 lr_nf
node=0x61, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0 lr_n0
node=0x201, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1 lr_1
node=0x211, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2 lr_1

LR name Info for Node = node0_RP0_CPU0

dSC node:         0/RP0/CPU0
standby dSC node: 0/RP1/CPU0

LRs (Configured, pre-existing) basic info:
 Name                                LRid  dLRSC         backup_dLRSC
-------------------------------------------------------------------
 Owner                               0     0/RP0/CPU0    0/RP1/CPU0

LRs (Configured, pre-existing) basic info:
Lr-Names             LRid dLRSC      StbydLRSC  Primary    Primary1   McastAddr
-------------------------------------------------------------------------------
Owner                0    0/RP0/CPU0 0/RP1/CPU0 0/RP0/CPU0 0/RP1/CPU0 0        0

Client Vector for Node = node0_RP0_CPU0
Received 23 currently connected lrd clients
 PID    op    eFLAGS    cFLAGS
_____________________________
  168027     0x1     0x4       0x3
  77863     0x11     0x204       0x1
  81963     0x10     0x200       0x0
  168024     0x2     0x0       0x0
  168026     0x2     0x0       0x0
  200800     0x1     0x4       0x1f
  204909     0x1     0x4       0xb
  209006     0x23     0x84       0xb
  385148     0x1     0x4       0x7
  385149     0x1     0x4       0x7
  381047     0x41     0x25       0x3
  381043     0x1     0x4       0x3
  381041     0x1     0x4       0x7
  397456     0x1     0x4       0x3
  397485     0x1     0x14       0x4
  397484     0x1     0x14       0x4
  397498     0x1     0x4       0x4
  405725     0x1     0x4       0x7
  405735     0x1     0x4       0x4
  405744     0x40     0x1       0x0
  434434     0x1     0x4       0x7
  434435     0x1     0x4       0x7
  434433     0x1     0x4       0x7

DLL loaded for Node = node0_RP0_CPU0
          dll name                          version
_____________________________________________
Node State Info for Node = node0_RP0_CPU0

 Type     Node        Nodeid    Prev State        Cur State         LRid  (PD c)
 ------------------------------------------------------------------------------
 LC(2)    0/1/CPU0     0x11     RUNNING_MBI(5)    RUNNING_ENA(6)     0    (5242)
 DRP(1)   0/4/CPU0     0x41     RUNNING_MBI(5)    RUNNING_ENA(6)     0    (119))
```

```
 DRP(1)    0/4/CPU1      0x42      RUNNING_MBI(5)     RUNNING_ENA(6)      0     (119))
 LC(2)     0/6/CPU0      0x61      RUNNING_MBI(5)     RUNNING_ENA(6)      0     (5242)
 RP(0)     0/RP0/CPU0    0x201     RUNNING_MBI(5)     RUNNING_ENA(6)      0     (19) )
 RP(0)     0/RP1/CPU0    0x211     PRESENT(1)         RUNNING_ENA(6)      0     (19) )

Sw State Info for Node = node0_RP0_CPU0

 ------------------------------------------------------------------------------
 Type      Node          Nodeid  PrevState  CurState  Red-Role/       Partner   Par
                                   (BAND)     (BAND)   Red-State        node     nae
 ------------------------------------------------------------------------------
 LC(2)     0/1/CPU0      0x11      INFRA      FINAL    Active/Down     0xffffffff
 DRP(1)    0/4/CPU0      0x41      INFRA      FINAL    Active/Down     0xffffffff
 DRP(1)    0/4/CPU1      0x42      INFRA      FINAL    Active/Down     0xffffffff
 LC(2)     0/6/CPU0      0x61      INFRA      FINAL    Active/Down     0xffffffff
 RP(0)     0/RP0/CPU0    0x201     INFRA      FINAL    Active/Down     0x211
 RP(0)     0/RP1/CPU0    0x211     INFRA      FINAL    Standby/Down    0x201

Config Info for Node = node0_RP0_CPU0
LRd basic configuration data:
_____________________________________________
        node                : 0x201
        lr_id               : 0
        lr_name             : Owner
        dsc node            : 0x201
        dsc partner node    : 0x211
        dlrsc node          : 0x201
        dlrsc partner node  : 0x211
        am I dSC            : Yes
        am I STBY dSC       : NO
        am I dLRSC          : Yes
        am I STBY dLRSC     : NO
        primary node        : 0x201
        primary node1       : 0x211
        mcast addr          : 0x0
        mac addr            : 0x01563c0b00
_____________________________________________
         ADMIN CONFIG is APPLIED
_____________________________________________
lrd log file path is /net/node0_RP0_CPU0/tmp/lrd.log

------------LRD LOG START FOR NODE node0_RP0_CPU0------------

10/11 10:19:16.309 1 main: ---LRD starting---

10/11 10:19:16.325 1 main: **********LRD on Node=0x201**********

10/11 10:19:16.327 1 main: mutex init for inv_mutex DONE.

10/11 10:19:17.772 1 lrd_get_dsc: dSC = 201

10/11 10:19:17.774 1 main: We are dSC.

10/11 10:19:17.776 1 main: Registering with SSM as service provider. Once

--------------------------------------------------------------------------------

                            show tech-support lrd

--------------------------------------------------------------------------------


++++ lrdbg -I -1: lrd server inventory [17:21:35.603 UTC Fri Dec 18 2009] +++++
```

```
Success: node_count=8, ready=1
node=0x1(0/RSP0/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1
lr_name=Owner pd_card_type=0x100302, partner=0x11
node=0x11(0/RSP1/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2
lr_name=Owner pd_card_type=0x100302, partner=0x1
node=0x4a0(0/FT0/SP), type=5, memsize=256, cpus=1, speed=100, sw_state=1, red_state=0
lr_name=Owner pd_card_type=0x0
node=0x4b0(0/FT1/SP), type=5, memsize=256, cpus=1, speed=100, sw_state=1, red_state=0
lr_name=Owner pd_card_type=0x0
node=0x821(0/0/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x841(0/2/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x851(0/3/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=0, red_state=0
lr_name=Owner pd_card_type=0x3020a
node=0xe10(0/PM1/SP), type=5, memsize=256, cpus=1, speed=100, sw_state=1, red_state=0
lr_name=Owner pd_card_type=0xf00188


---- lrdbg -I -1: lrd server inventory [17:21:36.023 UTC Fri Dec 18 2009] -----


+++ lrdbg -L local_node_lrd: local LR config info [17:21:36.215 UTC Fri Dec 18 2009] ++++




lrdbg 'i' getting CONFIG INFO
Starting lrdbg commands for node = 0/RSP0/CPU0
lrdbg: temp_node_name copied is 0/RSP0/CPU0
node_name = node0_RSP0_CPU0 chan_name = /net/node0_RSP0_CPU0/dev/lrd_local
user_nodeid=1 user_lrname = Owner
Local nodeid=1 Local lrname=Owner
User nodeid=1 User lrname = Owner User lrid=0
lrdbg: Successfully connected to channel /net/node0_RSP0_CPU0/dev/lrd_local

Starting lrdbg commands for node = node0_RSP0_CPU0 lrid = 0

DLRSC Info for Node = node0_RSP0_CPU0 Nodeid = 0x1 lrid = 0
We are the dLRSC, Backup dLRSC is 0x11

Inventory Info for Node = node0_RSP0_CPU0 lrid = 0
Success: node_count=5, ready=1
node=0x1(0/RSP0/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1
lr_name=Owner pd_card_type=0x100302, partner=0x11
node=0x11(0/RSP1/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2
lr_name=Owner pd_card_type=0x100302, partner=0x1
node=0x821(0/0/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x841(0/2/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x851(0/3/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=0, red_state=0
lr_name=Owner pd_card_type=0x3020a

LR name Info for Node = node0_RSP0_CPU0

dSC node:         0/RSP0/CPU0
```

```
standby dSC node: 0/RSP1/CPU0

LRs (Configured, pre-existing) basic info:
 Name                                LRid  dLRSC         backup_dLRSC
-------------------------------------------------------------------------
 Owner                               0     0/RSP0/CPU0   0/RSP1/CPU0

LRs (Configured, pre-existing) basic info:
Lr-Names             LRid dLRSC      StbydLRSC  Primary    Primary1   McastAddr  MacAddr
-------------------------------------------------------------------------------------------
Owner                0    0/RSP0/CPU0 0/RSP1/CPU0 0/RSP0/CPU0 0/RSP1/CPU0 0
0211bfcfe7e

Client Vector for Node = node0_RSP0_CPU0
Received 25 currently connected lrd clients
 PID    op    eFLAGS    cFLAGS
_____________________________
  213071     0x40     0x1       0x0
  213090     0x1     0x4       0x3
  163876     0x11     0x204       0x1
  176173     0x10     0x200       0x0
  184381     0x1     0x4       0x1
  213089     0x2     0x0       0x0
  208966     0x23     0x84       0x1
  229494     0x1     0x4       0x1
  221289     0x1     0x4       0x1f
  241796     0x41     0x15       0x3
  245905     0x40     0x1       0x0
  245902     0x1     0x14       0x7
  245901     0x1     0x14       0x7
  237682     0x1     0x4       0x7
  237695     0x1     0x4       0x3
  245908     0x40     0x1       0x0
  245907     0x40     0x1       0x0
  213092     0x1     0x14       0x3
  254123     0x1     0x14       0x3
  254124     0x1     0x4       0x4
  262347     0x1     0x4       0x4
  262351     0x1     0x14       0x4
  270550     0x1     0x4       0x7
  254139     0x40     0x1       0x4
  270596     0x40     0x1       0x0

DLL loaded for Node = node0_RSP0_CPU0
  liblrd_dl_node_state_0.dll                   0.0
 liblrd_dl_sw_state_0.dll                    0.0
 liblrd_dl_fwd_ldr_0.dll                     0.0
 liblrd_alpha_fwd.dll                        1.0
 liblrd_envmon_fwd.dll                       1.0
 liblrd_invmgr_fwd.dll                       1.0
         dll name                          version
_____________________________________________
Node State Info for Node = node0_RSP0_CPU0

 Type     Node        Nodeid    Prev State        Cur State         LRid  (PD ctype)
(old-lr-id)
 ---------------------------------------------------------------------------------
 RP(0)    0/RSP0/CPU0  0x1      RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x100302) (-1)
 RP(0)    0/RSP1/CPU0  0x11     RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x100302) (-1)
 LC(2)    0/0/CPU0     0x821    RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x30207) (-1)
 LC(2)    0/2/CPU0     0x841    RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x30207) (-1)
 LC(2)    0/3/CPU0     0x851    BRINGDOWN(7)      NOT_PRESENT(0)     0    (0x3020a) (-1)

Sw State Info for Node = node0_RSP0_CPU0
```

```
 ------------------------------------------------------------------------------------
 Type     Node         Nodeid  PrevState  CurState  Red-Role/       Partner   Pair
                               (BAND)     (BAND)   Red-State        node     name
 ------------------------------------------------------------------------------------
 RP(0)    0/RSP0/CPU0  0x1      INFRA      FINAL    Active/Down     0x11
 RP(0)    0/RSP1/CPU0  0x11     INFRA      FINAL    Standby/Down    0x1
 LC(2)    0/0/CPU0     0x821    INFRA      FINAL    Active/Down     0xffffffff
 LC(2)    0/2/CPU0     0x841    INFRA      FINAL    Active/Down     0xffffffff
 LC(2)    0/3/CPU0     0x851    INFRA      --       Unknown/Down    0xffffffff

Config Info for Node = node0_RSP0_CPU0
LRd basic configuration data:
_____________________________________________
        node                : 0x1
        lr_id               : 0
        lr_name             : Owner
        dsc node            : 0x1
        dsc partner node    : 0x11
        dlrsc node          : 0x1
        dlrsc partner node  : 0x11
        am I dSC            : Yes
        am I STBY dSC       : NO
        am I dLRSC          : Yes
        am I STBY dLRSC     : NO
        primary node        : 0x1
        primary node1       : 0x11
        mcast addr          : 0x0
        mac addr            : 0x0211bfcfe7e
_____________________________________________
         ADMIN CONFIG is APPLIED
_____________________________________________


--- lrdbg -L local_node_lrd: local LR config info [17:21:36.695 UTC Fri Dec 18 2009] ----


++++ lrd_show -I for this SDR-s DSDRSC [17:21:36.846 UTC Fri Dec 18 2009] +++++

Success: node_count=5, ready=1
node=0x1, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr_name=Owner,
pd_card_type=0x100302, partner=0x11
node=0x11, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2, lr_name=Owner,
 pd_card_type=0x100302, partner=0x1
node=0x821, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_name=Owner,
 pd_card_type=0x30207
node=0x841, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_name=Owner,
 pd_card_type=0x30207
node=0x851, type=2, memsize=256, cpus=1, speed=100, sw_state=0, red_state=0, lr_name=Owner,
 pd_card_type=0x3020a


---- lrd_show -I for this SDR-s DSDRSC [17:21:37.240 UTC Fri Dec 18 2009] -----


+++ lrdbg -n -1: lrd server node states [17:21:37.386 UTC Fri Dec 18 2009] ++++
```

```
 Type     Node        Nodeid    Prev State        Cur State         LRid  (PD ctype)
(old-lr-id)
 ------------------------------------------------------------------------------
 RP(0)    0/RSP0/CPU0  0x1      RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x100302) (-1)
 RP(0)    0/RSP1/CPU0  0x11     RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x100302) (-1)
 LC(2)    0/0/CPU0     0x821    RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x30207) (-1)
 LC(2)    0/2/CPU0     0x841    RUNNING_MBI(5)    RUNNING_ENA(6)     0    (0x30207) (-1)
 LC(2)    0/3/CPU0     0x851    BRINGDOWN(7)      NOT_PRESENT(0)     0    (0x3020a) (-1)


--- lrdbg -n -1: lrd server node states [17:21:37.766 UTC Fri Dec 18 2009] ----


+++ lrdbg -s -1: lrd server software states [17:21:37.914 UTC Fri Dec 18 2009] ++++




 ------------------------------------------------------------------------------
 Type     Node        Nodeid  PrevState  CurState  Red-Role/       Partner   Pair
                               (BAND)     (BAND)   Red-State        node     name
 ------------------------------------------------------------------------------
 RP(0)    0/RSP0/CPU0  0x1      INFRA     FINAL    Active/Down     0x11
 RP(0)    0/RSP1/CPU0  0x11     INFRA     FINAL    Standby/Down    0x1
 LC(2)    0/0/CPU0     0x821    INFRA     FINAL    Active/Down     0xffffffff
 LC(2)    0/2/CPU0     0x841    INFRA     FINAL    Active/Down     0xffffffff
 LC(2)    0/3/CPU0     0x851    INFRA     --       Unknown/Down    0xffffffff


--- lrdbg -s -1: lrd server software states [17:21:38.294 UTC Fri Dec 18 2009] ----


++++++++++ show ltrd-trace server [17:21:38.439 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/sntf -TP1

41 wrapping entries (1024 possible, 0 filtered, 41 total)
                                                                    Shelfmgr Notfs Rcvd:

                                          R/S/I       node_state    cardstate  adminpower
 adminshut

-------------------------------------------------------------
Dec 14 11:19:58.255 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/1       RUNNING_ENA          6
1         0
Dec 14 11:19:58.259 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1     PRESENT              1
1         0
Dec 14 11:19:58.264 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1     BOOTING              3
1         0
Dec 14 11:19:58.267 lrd/sntf 0/RSP0/CPU0 t13 : 0/75/0      PRESENT              1
1         0
Dec 14 11:19:58.268 lrd/sntf 0/RSP0/CPU0 t13 : 0/74/0      PRESENT              1
1         0
Dec 14 11:19:59.320 lrd/sntf 0/RSP0/CPU0 t13 : 0/1/1       RUNNING_MBI          5
1         0
Dec 14 11:19:59.335 lrd/sntf 0/RSP0/CPU0 t13 : 0/225/0     PRESENT              1
1         0
Dec 14 11:19:59.342 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1     BOOTING              3
```

```
1         0
Dec 14 11:19:59.354 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1     BOOTING              3
1         0
Dec 14 11:20:23.304 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1     MBI_BOOTING          4
1         0
Dec 14 11:20:23.314 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1     MBI_BOOTING          4
1         0
Dec 14 11:21:45.710 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1     RUNNING_MBI          5
1         0
Dec 14 11:21:46.237 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1     RUNNING_MBI          5
1         0
Dec 14 11:22:01.426 lrd/sntf 0/RSP0/CPU0 t13 : 0/1/1       RUNNING_ENA          6
1         0
Dec 14 11:23:21.504 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1     RUNNING_ENA          6
1         0
Dec 14 11:23:21.511 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1     RUNNING_ENA          6
1         0
Dec 14 15:42:37.504 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     PRESENT              1
1         0
Dec 14 15:42:37.608 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     BOOTING              3
1         0
Dec 14 15:42:37.614 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     BOOTING              3
1         0
Dec 14 15:43:02.999 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     MBI_BOOTING          4
1         0
Dec 14 15:43:48.408 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     RUNNING_MBI          5
1         0
Dec 14 15:45:05.176 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     RUNNING_ENA          6
1         0
Dec 15 14:53:15.444 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     BRINGDOWN            7
1         0
Dec 15 14:53:15.461 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1     NOT_PRESENT          0
1         0


---------- show ltrd-trace server [17:21:38.840 UTC Fri Dec 18 2009] ----------


++++++++++ show ltrd-trace server [17:21:38.985 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/sntf -TP2

41 wrapping entries (1024 possible, 0 filtered, 41 total)
                                                                                Shelfmgr
Notfs processed:
                                                        nodeid  o-LRid  LRid  o-state
   n-state      pd-ctype  pi-ctype

-----------------------------------------------------------------------
Dec 14 11:19:58.261 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0   (0x841)     0     0  NOT_PRESENT
   PRESENT         0x0       UNKN
Dec 14 11:19:58.265 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/CPU0   (0x821)     0     0  NOT_PRESENT
   BOOTING         0x0       UNKN
Dec 14 11:19:58.268 lrd/sntf 0/RSP0/CPU0 t13 : 0/FT1/SP   (0x4b0)    -1    -1  NOT_PRESENT
   PRESENT         0x0       UNKN
Dec 14 11:19:58.269 lrd/sntf 0/RSP0/CPU0 t13 : 0/FT0/SP   (0x4a0)    -1    -1  NOT_PRESENT
   PRESENT         0x0       UNKN
Dec 14 11:19:59.327 lrd/sntf 0/RSP0/CPU0 t13 : 0/RSP1/CPU0(0x11 )     0     0  NOT_PRESENT
   RUNNING_MBI     0x100000  RP
Dec 14 11:19:59.341 lrd/sntf 0/RSP0/CPU0 t13 : 0/PM1/SP   (0xe10)    -1    -1  NOT_PRESENT
   PRESENT         0xf00188  UNKN
Dec 14 11:19:59.345 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0   (0x841)     0     0  PRESENT
   BOOTING         0x0       UNKN
```

```
Dec 14 11:20:23.306 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/CPU0   (0x821)     0     0  BOOTING
   MBI_BOOTING     0x30207   LC
Dec 14 11:20:23.316 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0   (0x841)     0     0  BOOTING
   MBI_BOOTING     0x30207   LC
Dec 14 11:21:45.711 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/CPU0   (0x821)     0     0  MBI_BOOTING
   RUNNING_MBI     0x30207   LC
Dec 14 11:21:46.239 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0   (0x841)     0     0  MBI_BOOTING
   RUNNING_MBI     0x30207   LC
Dec 14 15:42:37.508 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0   (0x851)     0     0  NOT_PRESENT
   PRESENT         0x0       UNKN
Dec 14 15:42:37.609 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0   (0x851)     0     0  PRESENT
   BOOTING         0x0       UNKN
Dec 14 15:43:03.000 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0   (0x851)     0     0  BOOTING
   MBI_BOOTING     0x3020a   LC
Dec 14 15:43:48.409 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0   (0x851)     0     0  MBI_BOOTING
   RUNNING_MBI     0x3020a   LC
Dec 15 14:53:15.447 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0   (0x851)     0     0  RUNNING_ENA
   BRINGDOWN       0x3020a   LC
Dec 15 14:53:15.462 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0   (0x851)     0     0  BRINGDOWN
   NOT_PRESENT     0x3020a   LC


---------- show ltrd-trace server [17:21:39.392 UTC Fri Dec 18 2009] ----------


++++++++++ show ltrd-trace server [17:21:39.548 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/sreg -TP1

29 wrapping entries (64 possible, 0 filtered, 29 total)
                                                                    Client New Registrations:
                                                 jid     pid     Msg-op
Event-flags   Card-flags

---------------------------------------------------------------------
Dec 14 11:19:47.723 lrd/sreg 0/RSP0/CPU0 t15 : 389     213071  DLRSC
dlrsc-state   Unknwn
Dec 14 11:19:47.725 lrd/sreg 0/RSP0/CPU0 t15 : 406     213090  Node State
card-state   RP DRP
Dec 14 11:19:47.727 lrd/sreg 0/RSP0/CPU0 t15 : 95      163876  Pri LR                Unknwn
      Unknwn
Dec 14 11:19:47.731 lrd/sreg 0/RSP0/CPU0 t15 : 168     176173  Pri LR                Unknwn
      Unknwn
Dec 14 11:19:47.739 lrd/sreg 0/RSP0/CPU0 t15 : 404     184381  Node State
card-state   RP
Dec 14 11:19:47.746 lrd/sreg 0/RSP0/CPU0 t15 : 283    213089  LR Crt/Del            Unknwn
      Unknwn
Dec 14 11:19:47.755 lrd/sreg 0/RSP0/CPU0 t15 : 225     208966  Node State
card-state   RP
Dec 14 11:19:55.671 lrd/sreg 0/RSP0/CPU0 t15 : 226     229494  Node State
card-state   RP
Dec 14 11:19:56.522 lrd/sreg 0/RSP0/CPU0 t15 : 335     221289  Node State
card-state   RP DRP LC Other
Dec 14 11:20:00.929 lrd/sreg 0/RSP0/CPU0 t15 : 348     241796  DLRSC
dlrsc-state   Unknwn
Dec 14 11:20:02.842 lrd/sreg 0/RSP0/CPU0 t15 : 245     245905  DLRSC
dlrsc-state   Unknwn
Dec 14 11:20:04.054 lrd/sreg 0/RSP0/CPU0 t15 : 256     245902  Node State
card-state sw-state   RP DRP LC
Dec 14 11:20:04.054 lrd/sreg 0/RSP0/CPU0 t15 : 241     245901  Node State
card-state sw-state   RP DRP LC
Dec 14 11:20:04.699 lrd/sreg 0/RSP0/CPU0 t15 : 219     237682  Node State
card-state   RP DRP LC
```

```
Dec 14 11:20:09.686 lrd/sreg 0/RSP0/CPU0 t15 : 289     237695  Node State
card-state   RP DRP
Dec 14 11:20:09.904 lrd/sreg 0/RSP0/CPU0 t15 : 246     245908  DLRSC
dlrsc-state   Unknwn
Dec 14 11:20:11.607 lrd/sreg 0/RSP0/CPU0 t15 : 266     245907  DLRSC
dlrsc-state   Unknwn
Dec 14 11:20:15.748 lrd/sreg 0/RSP0/CPU0 t15 : 155     213092  Node State
card-state sw-state   RP DRP
Dec 14 11:20:20.401 lrd/sreg 0/RSP0/CPU0 t15 : 341     254123  Node State
card-state sw-state   RP DRP
Dec 14 11:20:24.754 lrd/sreg 0/RSP0/CPU0 t15 : 278     254124  Node State
card-state   LC
Dec 14 11:20:29.079 lrd/sreg 0/RSP0/CPU0 t15 : 144     262347  Node State
card-state   LC
Dec 14 11:20:33.883 lrd/sreg 0/RSP0/CPU0 t15 : 342     262351  Node State
card-state sw-state   LC
Dec 14 11:20:34.194 lrd/sreg 0/RSP0/CPU0 t15 : 181     270550  Node State
card-state   RP DRP LC
Dec 14 11:20:36.280 lrd/sreg 0/RSP0/CPU0 t15 : 312     254139  DLRSC
dlrsc-state   LC
Dec 14 11:20:53.951 lrd/sreg 0/RSP0/CPU0 t15 : 398     270596  DLRSC
dlrsc-state   Unknwn


---------- show ltrd-trace server [17:21:40.125 UTC Fri Dec 18 2009] ----------


++++++++++ show ltrd-trace server [17:21:40.326 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/sreg -TP2

29 wrapping entries (64 possible, 0 filtered, 29 total)
                                                                 Client re-Registrations:
                                          jid     pid     Curr-msg-op          New-Msg-op
       Event-flags     Card-flags

--------------------------------------------------------------------------------
Dec 14 11:19:47.757 lrd/sreg 0/RSP0/CPU0 t15 : 95      163876  Pri LR               Node
State         Unknwn      Unknwn
Dec 14 11:20:00.940 lrd/sreg 0/RSP0/CPU0 t15 : 348     241796  DLRSC                Node
State         dlrsc-state   Unknwn
Dec 14 11:20:46.317 lrd/sreg 0/RSP0/CPU0 t15 : 225     208966  Node State           LR
Crt/Del         card-state   RP
Dec 14 11:20:46.317 lrd/sreg 0/RSP0/CPU0 t15 : 225     208966  unknwn               DLSRC
Down         card-state   RP


---------- show ltrd-trace server [17:21:40.774 UTC Fri Dec 18 2009] ----------


++++++++++ show ltrd-trace server [17:21:40.994 UTC Fri Dec 18 2009] ++++++++++

No messages to display
lrd_show_ltrace -F lrd/sdwn -TP1


---------- show ltrd-trace server [17:21:41.511 UTC Fri Dec 18 2009] ----------


++++++++++ show ltrd-trace server [17:21:41.653 UTC Fri Dec 18 2009] ++++++++++
```

```
No messages to display
lrd_show_ltrace -F lrd/sdwn -TP2


---------- show ltrd-trace server [17:21:42.014 UTC Fri Dec 18 2009] ----------


++++++++++ show ltrd-trace server [17:21:42.150 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/supd -TP1

20 wrapping entries (1024 possible, 0 filtered, 20 total)
                                                                    SW updates sent:
                                                 nodeid              o-state       n-state
 red-role      partner    pi-ctype   LRid

-------------------------------------------------------------------------------------
Dec 14 11:19:47.645 lrd/supd 0/RSP0/CPU0 t3  : 0/RSP0/CPU0(0x1  )  NO STATE     ARB BAND
   Active        0x11        RP    0
Dec 14 11:19:56.368 lrd/supd 0/RSP0/CPU0 t4  : 0/RSP0/CPU0(0x1  )  ARB BAND     ADMIN BAND
   Active        0x11        RP    0
Dec 14 11:20:18.381 lrd/supd 0/RSP0/CPU0 t1  : 0/RSP0/CPU0(0x1  )  ADMIN BAND   INFRA BAND
   Active        0x11        RP    0
Dec 14 11:20:54.823 lrd/supd 0/RSP0/CPU0 t4  : 0/RSP0/CPU0(0x1  )  INFRA BAND   FINAL BAND
   Active        0x11        RP    0
```

show tech-support mpls ldp

To automatically run **show** commands that display information specific to Multiprotocol Label Switching (MPLS) Label Distribution Protocol (LDP) debugging, use the **show tech-support mpls ldp** command in EXEC mode.

show tech-support mpls ldp {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **verbosity** *value* | **vrf** *name* | **rack** | **location** *node-id*}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack *rack-id*	(Optional) Specifies a list of racks or a specifc rack with *rack-id* argument.

verbosity*value*	Specifies the verbosity. The *value* argument is expressed in number and has valid range from 1 through 4. • 1: brief • 2: detail • 3: detail+trace (dflt) • 4: extended
vrf*name*	(Optional) Specifies a VPN routing and forwarding (VRF) instance.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates LDP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read
mpls-ldp	read

show tech-support mpls optical-uni

To automatically run **show** commands that display information specific to Multiprotocol Label Switching (MPLS) Optical User Network Interface (O-UNI) debugging, use the **show tech-support mpls optical-uni** command in EXEC mode.

show tech-support mpls optical-uni {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **terminal** [**page**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a

file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates O-UNI debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read
ouni	read

show tech-support mpls rsvp

To automatically run **show** commands that display information specific to Multiprotocol Label Switching (MPLS) Resource Reservation Protocol (RSVP) debugging, use the **show tech-support mpls rsvp** command in EXEC mode.

show tech-support mpls rsvp {**terminal** [**page**] | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **standby** }

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
standby	Displays standby node specific information.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support mpls** command to run **show** commands that display information specific to MPLS RSVP debugging. This command generates RSVP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support mpls rsvp** command:

- **show rsvp interface detail**
- **show rsvp counters pak**
- **show rsvp counters handles**
- **show rsvp counters database private**
- **show rsvp counters messages private**
- **show rsvp counters memory**
- **show rsvp counters events**
- **show rsvp counters notifications-client**
- **show rsvp counters request**
- **show rsvp counters destroy-reasons**
- **show rsvp counters policy**
- **show rsvp graceful-restart**
- **show rsvp fast-reroute summary**
- **show rsvp graceful-restart neighbors detail**
- **show rsvp hello instance detail**
- show rsvp sender detail
- **show rsvp reservation detail**
- **show rsvp request detail**
- **show rsvp session detail**
- **show rsvp authentication**
- **show rsvp sender private**
- **show rsvp reservation private**
- **show rsvp request private**
- **show rsvp interface private**
- **show rsvp installed private**
- **show rsvp trace events**

- **show rsvp trace default**
- **show rsvp trace buffer**
- **show rsvp trace interface**
- **show rsvp trace errors**
- **show rsvp trace client**
- **show rsvp debug-error**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read
mpls-te or ouni	read

Examples

The following example shows some of the **show tech-support mpls rsvp** command output:

```
RP/0/RP0/CPU0:router# show tech-support mpls rsvp terminal page

------------------------------------------------------------------------------

            show tech-support mpls rsvp (Detail with Event traces)

------------------------------------------------------------------------------


------------------------- show rsvp interface detail --------------------------
INTERFACE: GigE0/1/0/0 (ifh=0x1180060).
 VRF ID: 0x0 (Default).
 BW (bits/sec): Max=1230M. MaxFlow=1230M.
                Allocated=0 (0%). MaxSub=0.
 Signalling: No DSCP marking. No rate limiting.
 States in: 0. Max missed msgs: 4.
 Expiry timer: Not running. Refresh interval: 45s.
 Normal Refresh timer: Not running. Summary refresh timer: Not running.
 Refresh reduction local: Enabled. Summary Refresh: Enabled (4096 bytes max).

 Reliable summary refresh: Disabled. Bundling: Enabled. (4096 bytes max).
 Ack hold: 400 ms, Ack max size: 4096 bytes. Retransmit: 900ms.


-------------------------- show rsvp counters pak ----------------------------
Number of pak TX=0
Number of pak events received from raw=1
Number of spurious events received from raw=1
Number of packets received from raw=0
Number of errored drops=0
Authentication queue:
    Number of enqueues=0
    Number of drops due to max q size=0
    High water mark=0
    Current queue size=0
High priority queue:
    Number of enqueues=0
```

```
    Number of drops due to max q size=0
    High water mark=0
    Current queue size=0
Low priority queue:
    Number of enqueues=0
    Number of drops due to max q size=0
    High water mark=0
    Current queue size=0


------------------------ show rsvp counters handles --------------------------

         All allocated handles:     5
    Unallocated cached handles:  1019
                                -------
                  LXSB handles:     1
                   ISB handles:     2
                    KI handles:     1
                                -------
  Total handles ever allocated:     5
      Total handles ever freed:     0


--------------------- show rsvp counters database private ---------------------

                                Sessions: 0
       Locally created and incoming Paths: 0
                           Outgoing Paths: 0
Locally created and incoming Reservations: 0
                     Outgoing Reservations: 0
                                Interfaces: 2
                                 Installed: 0
                            New LSP count: 0
                      Refreshed LSP count: 0
      LSP count recovered from checkpoint: 0
                             Proxy Senders: 0
                         Proxy Reservations: 0
                            Proxy Listeners: 1
                             TMB allocation: 0
                               Local Routes: 22


---------------------- show rsvp counters messages private ----------------------
 Routed                  Recv     Xmit                        Recv     Xmit
    Path                                0    Resv                           0
    PathError                           0    ResvError                      0
    PathTear                            0    ResvTear                       0
    ResvConfirm                         0    Hello                          0
    Ack                                 0    SRefresh                       0
    Challenge                           0    ChallengeRsp                   0
    Retransmit                          0    Rate Limited                   0
    OutOfOrder
    Bundle                              0    AckSubmsg                      0
    PathSubmsg                          0    ResvSubmsg                     0
    PathTearSubmsg                      0    ResvTearSubmsg                 0
    PathErrorSubmsg                     0    ResvErrorSubmsg                0
    PathQuery                           0

 POS0/1/0/0              Recv     Xmit                        Recv     Xmit
    Path                    0        0    Resv                      0        0
    PathError               0        0    ResvError                 0        0
    PathTear                0        0    ResvTear                  0        0
    ResvConfirm             0        0    Hello                     0        0
    Ack                     0        0    SRefresh                  0        0
```

```
    Challenge               0         0    ChallengeRsp            0         0
    Retransmit                        0    Rate Limited                      0
    OutOfOrder              0
    Bundle                  0         0    AckSubmsg               0         0
    PathSubmsg              0         0    ResvSubmsg              0         0
    PathTearSubmsg          0         0    ResvTearSubmsg          0         0
    PathErrorSubmsg         0         0    ResvErrorSubmsg         0         0
    PathQuery               0         0

 All RSVP Interfaces    Recv     Xmit                          Recv     Xmit
    Path                    0         0    Resv                    0         0
    PathError               0         0    ResvError               0         0
    PathTear                0         0    ResvTear                0         0
    ResvConfirm             0         0    Hello                   0         0
    Ack                     0         0    SRefresh                0         0
    Challenge               0         0    ChallengeRsp            0         0
    Retransmit                        0    Rate Limited                      0
    OutOfOrder              0
    Bundle                  0         0    AckSubmsg               0         0
    PathSubmsg              0         0    ResvSubmsg              0         0
    PathTearSubmsg          0         0    ResvTearSubmsg          0         0
    PathErrorSubmsg         0         0    ResvErrorSubmsg         0         0
    PathQuery               0         0


-------------------------- show rsvp counters memory --------------------------
Pool size  Count
---------- ----------
32                  0
48                  0
96                  0
128                 0
192                 0
256                 0
Dynamic             0

-------------------------- show rsvp counters events --------------------------
POS0/1/0/0                            All RSVP Interfaces
 Expired Path states           0         Expired Path states           0
 Expired Resv states           0         Expired Resv states           0
 NACKs received                0         NACKs received                0

------------------- show rsvp counters notifications-client --------------------
Total notifications                    Total filtered notifications
 Path delete                        0  Path delete                            0
 Path error                         0  Path error                             0
 Path change                        0  Path change                            0
 Matching Resv create               0  Matching Resv create                   0
 Matching Resv change               0  Matching Resv change                   0
 Matching Resv delete               0  Matching Resv delete                   0
 Async Path create                  0  Async Path create                      0
 Resv delete                        0  Resv delete                            0
 Resv error                         0  Resv error                             0
 Resv confirm                       0  Resv confirm                           0
 Async Resv create                  0  Async Resv create                      0
 Listener Path create               0  Listener Path create                   0
 Listener Path change               0  Listener Path change                   0
 Listener Path delete               0  Listener Path delete                   0
 Listener Path FRR                  0  Listener Path FRR                      0
 Listener Assign Backup err         0  Listener Assign Backup err             0
 Listener Resv create               0  Listener Resv create                   0
 Listener Resv change               0  Listener Resv change                   0
 Listener Resv delete               0  Listener Resv delete                   0
 Restart Time                       0  Restart Time                           0
```

```
                Recovery Done                       0  Recovery Done                       0
```

show tech-support mpls traffic-eng

To automatically run **show** commands that display information specific to Multiprotocol Label Switching (MPLS) Traffic Engineering (TE) debugging, use the **show tech-support mpls traffic-eng** command in EXEC mode.

show tech-support mpls traffic-eng {**terminal** [**page**] | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | [**forwarding** { **tunnel-name** *tunnel name* | **tunnel-number** *number*}] | **tp** | **standby**}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
tp	Displays Transport Profile Information.
forwarding	(Optional) Displays forwarding information for a tunnel.
tunnel-name	Specifies the tunnel name that is used by the RSVP process.
tunnel name	Name for the tunnel.
tunnel-number	(Optional) Specifies the tunnel number that is used by the RSVP process.
number	(Optional) Number for the tunnel. The range is from 0 to 65535.
terminal	Specifies that the command output is displayed on the terminal.

page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates MPLS-TE information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read
mpls-te	read

Examples

The following example shows some of the **show tech-support mpls traffic-eng** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support mpls traffic-eng terminal page

------------------------------------------------------------------------------

                     show tech-support mpls traffic-eng

------------------------------------------------------------------------------


-------------------- show mpls traffic-eng tunnels summary --------------------
Signalling Summary:
```

```
            LSP Tunnels Process:  running
                   RSVP Process:  running
                     Forwarding:  enabled
    Head: 0 interfaces, 0 active signalling attempts, 0 established
          0 explicit, 0 dynamic
          0 activations, 0 deactivations
          0 recovering, 0 recovered
    Mids: 2
    Tails: 0
          Periodic reoptimization:  every 3600 seconds, next in 2703 seconds
           Periodic FRR Promotion:  every 300 seconds, next in 106 seconds
      Periodic auto-bw collection:  disabled

Fast ReRoute Summary:
    Head:     0 FRR tunnels, 0 protected, 0 rerouted
    Mid:      0 FRR tunnels, 0 protected, 0 rerouted
    Summary:  0 protected, 0 link protected, 0 node protected, 0 bw protected
    Backup:   0 tunnels, 0 assigned
    Interface: 0 protected, 0 rerouted

--------------- show mpls traffic-eng counters tunnels summary ----------------
 Head:                     Mid:                       Tail:
  Total:                 0 Total:                   8 Total:                   0
  Sender Create:         0 Path Create:             2 Path Create:             0
  Sender Modify:         0 Path Change:             0 Path Change:             0
  Sender Delete:         0 Path Delete:             0 Path Delete:             0
  RESV Create:           0 Receiver Create:         2 Receiver Create:         0
  RESV Change:           0 Receiver Modify:         0 Receiver Modify:         0
  RESV Delete:           0 Receiver Delete:         0 Receiver Delete:         0
  Path Delete:           0 RESV Create:             2 RESV Create:             0
  Path Error:            0 RESV Delete:             0 RESV Delete:             0
  Path Change:           0 RESV Change:             0 RESV Change:             0
  Path Create:           0 Sender Create:           2 RESV Error:              0
  RESV Confirm:          0 Sender Modify:           0
                           Sender Delete            0
  Other:                 0 Other:                   0 Other:                   0

-------------------- show mpls traffic-eng counters batch ---------------------
Messages   Batches   MinSize   MaxSize   AverageSize   Description
--------   -------   -------   -------   -----------   -----------
0          0         0         0         0             IF CREATE
0          0         0         0         0             CAPS ADD
0          0         0         0         0             MTU UPDATE
0          0         0         0         0             STATE UPDATE
0          0         0         0         0             IF REPLICATE
0          0         0         0         0             IF DEL CONFIRM
0          0         0         0         0             IF DELETE
25         23        1         2         1             NOTFN from IM
4          2         2         2         2             MESSAGE to RSVP
9          6         1         2         1             MESSAGES from RSVP
0          0         0         0         0             MESSAGES to IGP
0          0         0         0         0             SYSDB VRFNs
0          0         0         0         0             SYSDB APPLYs
2          1         2         2         2             MESSAGE to LSD
2          2         2         2         1             MESSAGES from LSD
12         6         1         6         2             MESSAGES to IPARM

---------- show mpls traffic-eng link-management statistics summary -----------

  LSP Admission Statistics::

         Setup    Setup    Setup    Setup    Tear     Tear     Tear
         Requests Admits   Rejects  Errors   Requests Preempts Errors
         -------- -------- -------- -------- -------- -------- --------
```

```
    Path        2        2        0        0        0        0        0
    Resv        2        2        0        0        0        0        0


---------------- show mpls traffic-eng link-management summary ----------------

  System Information::
      Links Count         : 6 (Maximum Links Supported 100)
      Flooding System     : enabled
      IGP Areas Count     : 1

  IGP Areas
  ----------

  IGP Area[1]:: OSPF 100 area 0
      Flooding Protocol   : OSPF
      Flooding Status     : flooded
 --More--  Zero Nodes Found.
      Periodic Flooding   : enabled (every 180 seconds)
      Flooded Links       : 6
      IGP System ID       : 10.1.1.1
      MPLS TE Router ID   : 10.1.1.1
      IGP Neighbors       : 6


------------- show mpls traffic-eng fast-reroute database summary -------------
Status     Count
---------- ----------
Active     0
Ready      0
Partial    0

------------------------ show mpls forwarding summary -------------------------
Forwarding entries:
   Label switching: 60
   MPLS TE tunnel head: 0
   MPLS TE fast-reroute: 0 via 0 protected next-hops
   MPLS TE internal: 0
Forwarding updates:
   392 updates, 37 messages
Labels in use:
   Reserved: 3
   Lowest: 0
   Highest: 16059
   Deleted stale label entries: 0

Pkt drops=0, fragm=0, fail_look=0

Pkts dropped:    0
Pkts fragmented: 0
Failed lookups:  0

----------------------- show cef drop location 0/0/cpu0 -----------------------
CEF Drop Statistics

----------------------- show cef drop location 0/1/cpu0 -----------------------
CEF Drop Statistics
Node: 0/1/CPU0
  Unresolved drops     packets :               0
  Unsupported drops    packets :               0
  Null0 drops          packets :               0
  No route drops       packets :               0
  No Adjacency drops   packets :               0
```

```
        Checksum error drops packets :              0
```

show tech-support multicast

To automatically run **show** commands that display information specific to multicast-related information, use the **show tech-support multicast** command in EXEC mode.

show tech-support multicast [{**address-family** | **classic** | **group** *group-address* | **hardware** | **source** *source address* | **location** *node-id* | **vrf** *vrf-name* | **rack** *rack-id* | {**file** *send-to*[{**background** | **compressed** | **uncompressed**}]}}]

Syntax Description

address-family	Collects address family specific information. It can be either ipv4 or ipv6.
classic	(Optional) Retrieves multicast related information using the non-fast method.
group	(Optional) Specifies the multicast group address.
group-address	(Optional) Address or name of the multicast group. An address is a multicast IP address in four-part dotted-decimal notation. A name is as defined in the Domain Name System (DNS) hosts table.
file	(Optional) Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
source	(Optional) Displays the multicast source address.
source address	(Optional) Source address for multicast.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
hardware	(Optional) Displays the hardware platform information.

rack	(Optional) Displays the list of racks.
vrf	(Optional) Specifies a VPN routing and forwarding (VRF) instance.
vrf-name	Name of VRF.

Command Default

Output is logged to the terminal screen.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.
Release 6.4.1	From this release onwards **address-family** is a mandatory keyword.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support multicast** command to run **show** commands that display information specific to multicast-related information for PIM, IGMP, and mcast. This command generates multicast information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support multicast** command:

- **show version**
- **show running-config**
- **show ip interface brief**
- **show install**
- **show processes aborts location all**
- **show processes blocked location all**
- **show context location all**
- **show memory summary location all**
- **show ip access-lists show ip mhost default-interface**

- **show msdp summary**
- **show msdp globals**
- **show msdp sa-cache summary**
- **show msdp statistics peer**
- **show pim group-map**
- **show pim topology route-count**
- **show pim topology** *ip-address*
- **show pim rpf count**
- **show pim rpf**
- **show pim traffic**
- **show pim join-prune statistic**
- **show pim interface state-on**
- **show pim tunnel info all**
- **show pim neighbor**
- **show pim nsf**
- **show pim summary**
- **show igmp groups summary**
- **show igmp groups** *group-address*
- **show igmp interface**
- **show igmp traffic**
- **show igmp nsf**
- **show igmp summary**
- **show mrib client filter**
- **show mrib route summary**
- **show mrib route** *source-address*
- **show mrib nsf**
- **show cef ipv4** *prefix* **location** *node-id*
- **show mfib route summary location** *node-id*
- **show mfib route** *source-address* **location** *node-id*
- **show mfib counter location** *node-id*
- **show mfib nsf location** *node-id*
- **show mfib hardware route mofrr location** *node-id*
- **show mfib hardware route olist detail** *source-address* **location** *node-id*
- **show mfib hardware interface detail location** *node-id*
- **show mfib hardware route statistics** *source-address* **location** *node-id*
- **show mfib hardware resource-counter location** *node-id*
- **show mfib hardware adjacency detail location** *node-id*
- **show mfib hardware route accept-bitmap detail** *source-address* **location** *node-id*

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read

Task ID	Operations
multicast	read

show tech-support netflow

To automatically run **show** commands that display information specific to netflow debugging, use the **show tech-support netflow** command in EXEC mode.

show tech-support netflow [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [**location** *node-id*] [**rack**]

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates netflow debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support nrs

To automatically run **show** commands that display information specific to the name registration service (NRS) information, use the **show tech-support nrs** command in EXEC mode.

show tech-support nrs [{**file** *send-to* [{**background** | **compressed** | **uncompressed**}] | **location** *node-id* | **rack**}]

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
rack	(Optional) Displays the list of racks.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support nrs** command to collect data for the NRS. The NRS is a central registration authority and is used by the Replication Data Services (RDS) and the Event Notification Services (ENS). This command generates NRS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support password

To automatically run **show** commands that display information to include the password in the output for debugging, use the **show tech-support password** command in EXEC mode.

show tech-support password {[**file** *send-to* [**background**] [{**compressed**|**uncompressed**}]]|**location** *node-id* | **rack**}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates output to include the password for debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support pfi

To automatically run **show** commands that display information specific to Packet Forwarding Infrastructure (PFI) debugging for all components, use the **show tech-support pfi** command in EXEC mode.

show tech-support pfi {**file** *send-to* [{**background** | **compressed** | **uncompressed**}]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp:**//*server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support pfi** command to collect information for the PFI, which consists of interface-related date with regards to netio and interface manager. This command generates output PFI debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read
cisco-support	read

show tech-support placement

To automatically run **show** commands that display information specific to process placement, use the **show tech-support placement** command in EXEC mode.

show tech-support placement {**terminal** [**page**] | **file** *send-to* [{**background** | **compressed** | **uncompressed**}]}

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates process placement debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read
sysmgr	read

Examples

The following example shows some of the **show tech-support placement** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support placement terminal page

------------------------------------------------------------------------------

                          show tech-support placement

------------------------------------------------------------------------------

------------------------------ run lrd_show -I ------------------------------
Success: node_count=6, ready=1
node=0x11, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_0
node=0x41, type=1, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr_f
node=0x42, type=1, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr_f
node=0x61, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_0
node=0x201, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr1
node=0x211, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2, lr1

------------------------- show placement trace all --------------------------
Oct 11 19:23:59.949 main      bag_register_all_placed_mgmnt_defs_bags rc = No er
Oct 11 19:23:59.980 main      bag_register_all_placed_mgmnt_bags rc = No error
Oct 11 19:24:06.420 main      Checkpoint initialization succeeded
Oct 11 19:24:06.665 main      Starting for the first time in this LR
Oct 11 19:24:06.725 nodes     registered nodes bags, rc = 0 (No error)
Oct 11 19:24:06.728 nodes     We are running on node 0/RP0/CPU0
Oct 11 19:24:06.734 nodes     lrd_register_card_state ok
Oct 11 19:24:06.734 nodes     Setting timer for 70 seconds, thread 1
Oct 11 19:24:06.748 nodes     Successfully got inventory (attempt 1 of 30)
```

```
Oct 11 19:24:06.748 nodes     Stopping timer
Oct 11 19:24:06.748 nodes     LR inventory has 4 RP/DRP nodes
Oct 11 19:24:06.850 nodes     update_node: nodeid 0/4/CPU0, pnodeid [NODEID_INV0
Oct 11 19:24:06.850 nodes     Creating new node
Oct 11 19:24:06.877 nodes     update_node: nodeid 0/4/CPU1, pnodeid [NODEID_INV0
Oct 11 19:24:06.877 nodes     Creating new node
Oct 11 19:24:06.877 nodes     update_node: nodeid 0/RP0/CPU0, pnodeid 0/RP1/CPU1
Oct 11 19:24:06.877 nodes     Creating new node
Oct 11 19:24:06.877 nodes     node::_get_active_nodeid(Placed_node (482c1088) (0
Oct 11 19:24:06.917 nodes     update_node: nodeid 0/RP1/CPU0, pnodeid 0/RP0/CPU2
Oct 11 19:24:06.917 nodes     Nodeid 0/RP1/CPU0 is already in node object Place)
Oct 11 19:24:06.917 nodes     Information differs
Oct 11 19:24:06.917 nodes     node 0/RP0/CPU0 is active
Oct 11 19:24:06.917 nodes     node::_get_active_nodeid(Placed_node (482c1088) (0
Oct 11 19:24:06.917 nodes     rescan_lrd_inventory rc = 0 (No error)
Oct 11 19:24:06.917 nodes     apply_startup_type: no action required (0)
Oct 11 19:24:06.978 properties registered properties bags, rc = 0 (No error)
Oct 11 19:24:06.978 properties Inserting Nodetypeaffinity (48283504) (value 100)
Oct 11 19:24:06.985 edm       placed_edm_init succeeded
Oct 11 19:24:07.086 properties Inserting Classaffinity (482827b8) (value 250.00g
Oct 11 19:24:07.086 properties Inserting Classaffinity (48282830) (value 250.00i
Oct 11 19:24:07.086 properties Inserting Classaffinity (4828286c) (value 250.00g
Oct 11 19:24:07.086 properties Inserting Classaffinity (482828a8) (value 250.00i
Oct 11 19:24:07.086 properties Inserting Selfaffinity (483297ac) (value -160.00)
Oct 11 19:24:07.086 properties Inserting Nodetypeaffinity (483297e0) (value -50)
Oct 11 19:24:07.086 properties Inserting Nodetypeaffinity (48329814) (value 50.)
Oct 11 19:24:07.086 properties Inserting Nodetypeaffinity (48329848) (value 600)
Oct 11 19:24:07.131 properties Inserting Classaffinity (482828e4) (value 70.00)i
Oct 11 19:24:07.131 properties Inserting Classaffinity (48282920) (value 70.00)i
Oct 11 19:24:07.131 properties Inserting Classaffinity (4828295c) (value 70.00)i
Oct 11 19:24:07.132 properties Inserting Classaffinity (4832b048) (value 70.00)i
Oct 11 19:24:07.132 properties Inserting Nodetypeaffinity (483298b0) (value -15)
Oct 11 19:24:07.132 properties Inserting Nodetypeaffinity (483298e4) (value 200)
Oct 11 19:24:07.132 properties Inserting Nodetypeaffinity (48329918) (value 600)
Oct 11 19:24:07.193 properties Inserting Nodetypeaffinity (4832994c) (value -20)
Oct 11 19:24:07.194 properties Inserting Nodetypeaffinity (4832b818) (value 250)
Oct 11 19:24:07.226 properties Inserting Nodetypeaffinity (4832b880) (value -402
Oct 11 19:24:07.275 properties Inserting Nodetypeaffinity (4832b8b4) (value -20)
Oct 11 19:24:07.275 properties Inserting Nodetypeaffinity (4832b8e8) (value 250)
Oct 11 19:24:07.350 properties Inserting Nodetypeaffinity (4832b950) (value -402
Oct 11 19:24:07.402 properties Inserting Nodetypeaffinity (4832b9b8) (value -40)
Oct 11 19:24:07.562 properties Inserting Nodetypeaffinity (4832baf0) (value 100)
```

show tech-support platform

To automatically run **show** commands that display information specific to platforms, use the **show tech-support platform** command in EXEC mode.

show tech-support platform {**file** *send-to* | **location** *node-id* | **rack**}

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
location *node-id*	(Optional) Specifies a node. (Optional). Node ID. The node-id argument is entered in the rack/slot/module notation.
rack	(Optional) Displays the list of racks.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support platform** command to run **show** commands that display information specific to platforms. This command generates platform debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support platform** command:

- **show controller squid summary**
- **show controller plim asic statistics summary location** *node-id*

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

Examples

The following example shows some of the **show tech-support platform** command output:

```
RP/0/RP0/CPU0:router# show tech-support platform

------------------------ show controller squid summary ------------------------
Cpuctrl discovered 14 device on node 0/1/CPU0:

Cpuctrl HW version string for this node is:
Squid FPGA v2.07 Fri Jan 23 16:21:01 2004 userb

-------------------------------------------------------------
device_name:         Fabricq    device instance:    0
Cpuctrl net port:    3          pci_base:            0x8c000000

-------------------------------------------------------------
device_name:         Fabricq    device instance:    1
Cpuctrl net port:    4          pci_base:            0x90000000

-------------------------------------------------------------
device_name:         Ingressq   device instance:    0
Cpuctrl net port:    8          pci_base:            0xa0000000

-------------------------------------------------------------
device_name:         Egressq    device instance:    0
Cpuctrl net port:    7          pci_base:            0x9c000000

-------------------------------------------------------------
device_name:         FIA        device instance:    0
Cpuctrl net port:    1          pci_base:            0x84000000

-------------------------------------------------------------
device_name:         FIA        device instance:    1
Cpuctrl net port:    2          pci_base:            0x88000000
```

```
------------------------------------------------------------
device_name:         Cpuctrl    device instance:    0
Cpuctrl net port:    0          pci_base:            0x80000000

------------------------------------------------------------
device_name:         PSE        device instance:    1
Cpuctrl net port:    6          pci_base:            0x98000000

------------------------------------------------------------
device_name:         PSE        device instance:    0
Cpuctrl net port:    5          pci_base:            0x94000000

------------------------------------------------------------
device_name:         PlimAsic for SPA   device instance:    0
Cpuctrl net port:    9          pci_base:            0xa4000000
.
.
.
------- show controller plim asic statistics summary location 0/1/CPU0 --------
             Node: 0/1/CPU0
--------------------------------------
Instance# 0 Statistics
------------------------------------------------------------------------
To PSE       : 1034176             BP count   : 2615809697
RMC Runt     : 0                   RMC Giant  : 0
RMC Tail Drop: 1                   L2P Drop   : 0
From Egressq : 924513              SIF Drop   : 0
TLK Drop     : 0

Port 0
To SPA       : 0                   From SPA  : 0
RSI FIFO Drop: 0                   QPM  Drop : 0
QPM OVFL     : 0                   RPB  Drop : 0

Port 1
To SPA       : 0                   From SPA  : 0
RSI FIFO Drop: 0                   QPM  Drop : 0
QPM OVFL     : 0                   RPB  Drop : 0

Port 2
To SPA       : 924513              From SPA  : 1034177
RSI FIFO Drop: 0                   QPM  Drop : 0
QPM OVFL     : 0                   RPB  Drop : 0

Instance# 1 Statistics
------------------------------------------------------------------------
To PSE       : 9217833             BP count   : 2323530765
RMC Runt     : 0                   RMC Giant  : 0
RMC Tail Drop: 2590                L2P Drop   : 0
From Egressq : 9317309             SIF Drop   : 0
TLK Drop     : 0

Port 0
To SPA       : 0                   From SPA  : 0
RSI FIFO Drop: 0                   QPM  Drop : 0
QPM OVFL     : 0                   RPB  Drop : 0

Port 1
To SPA       : 537745              From SPA  : 546867
RSI FIFO Drop: 0                   QPM  Drop : 0
QPM OVFL     : 0                   RPB  Drop : 0

Port 2
To SPA       : 8779564             From SPA  : 8673556
```

```
RSI FIFO Drop: 0                    QPM  Drop : 0
QPM OVFL     : 0                    RPB  Drop : 0
```

show tech-support pos

To automatically run **show** commands that display information specific to Packet over SONET /SDH (POS) debugging, use the **show tech-support pos** command in EXEC mode.

show tech-support pos {**terminal** [**page**] | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}]} **interface** *type instance* [**show-only**] [**trace-only**] [{**location** *node-id* | **all**}] [**rack**]

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
interface	Collects information about a specific interface.
type	Interface type. For more information, use the question mark (?) online help function.

instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

show-only	(Optional) Collects only show command information.
terminal	Specifies that the command output is displayed on the terminal.
trace-only	(Optional) Collects only trace information.
location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
rack	(Optional) Displays the list of racks.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates POS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support routing pos** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support pos

------------------------------------------------------------------------------

                            show tech-support pos

------------------------------------------------------------------------------


----------------------------- show running-config -----------------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
```

```
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
```

```
 dot1q vlan 31
!
interface Bundle-POS24
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
```

show tech-support ppp

To automatically run **show** commands that display information specific to Point to Point Protocol (PPP) debugging, use the **show tech-support ppp** command in EXEC modeEXEC mode.

show tech-support ppp [{**file send-to** | [**interface** *type instance*] | **location** *node-id* | **rack** | **slow**}]

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
interface	Collects information about a specific interface.
type	Interface type. For more information, use the question mark (?) online help function.

instance	Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

location	(Optional) Specifies a node.

node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
rack	(Optional) Displays the list of racks.
slow	(Optional) Displays the list show commands of interest for ppp debugging

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates PPP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See Obtaining Documentation and Submitting a Service Request section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support routing ppp** command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support ppp

------------------------------------------------------------------------------

                            show tech-support ppp

------------------------------------------------------------------------------
```

```
------------------------------ show running-config -------------------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
```

show tech-support qos

To automatically run **show** commands that display platform independent Quality of Service (QoS) debugging information, use the **show tech-support qos** command in EXEC mode.

show tech-support qos {**platform** | **pi**} [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [{**location** *node-id*}] [**rack**]

Syntax Description

platform	Collects platform dependent QOS related information and saves to disk.
pi	Collects platform independent QOS related information and saves to disk.
file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location	(Optional) Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates QoS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

Task ID

Task ID	Operations
basic-services	read
cisco-support	read

show tech-support rdsfs

To automatically run **show** commands that display information specific to Replication Data Services File System (RDSFS) debugging, use the **show tech-support rdsfs** command in EXEC mode.

show tech-support rdsfs [{**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **location** *node-id* | **rack**}]

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support rdsfs** command to run **show** commands that display information specific to RDSFS debugging and is relevant to bring to a ready state. This command generates RDSFS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows how to run **show tech-support rdsfs** command:

```
RP/0/RP0/CPU0:router# show tech-support rdsfs
```

show tech-support rib

To automatically run **show** commands that display information specific to Routing Information Base (RIB) debugging, use the **show tech-support rib** command in EXEC mode.

show tech-support rib level *number*

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
level *number*	Displays verbosity details. *number* argument is either 1 or 2. Verbosity: 1-brief is default. Verbosity: 2-details with all VRF routes.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

The RIB data stores the best path information for the routing protocol that is sent to FIB to help build the data structures. This command generates RIB debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support routing bfd

To automatically run **show** commands that display information specific to Bidirectional Forwarding Detection (BFD) debugging, use the **show tech-support routing bfd** command in EXEC mode.

show tech-support routing bfd[**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [**location** *node-id*]**[rack]**

Syntax Description

file	(Optional) Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a

file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support routing bfd** command to run **show** commands that display information specific to BFD debugging. This command generates BFD debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support routing bfd** command:

- **show bfd session**
- **show bfd**
- **show memory heap fail all**
- **show memory summary location all**
- **show process blocked location all**
- **show adjacency**
- **show bfd location**
- **show bfd session detail location** *node-id*
- **show bfd session agent detail location**
- **show bfd timer-groups location***node-id*
- **show bfd index-mgrs location** *node-id*
- **show bfd session-array location** *node-id*
- **show bfd interfaces location** *node-id*
- **show bfd bundles detail location** *node-id*
- **show bfd counters packet invalid** location *node-id*
- **show bfd counters packet private location** *node-id*
- **show bfd client private**
- **show bfd trace all-cards**
- **show controllers cpuctrl summary**
- **show controllers cpuctrl client pdma bfd active location all**
- **show controllers cpuctrl ports ingressq pdma all active location** *node-id*
- **show controllers cpuctrl ports egressq pdma all active location** *node-id*
- **show controllers pse statistics location** *node-id*

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support routing isis

To automatically run **show** commands that display information specific to Intermediate System-to-Intermediate System (IS-IS) debugging, use the **show tech-support routing isis** command in EXEC mode.

show tech-support routing isis [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [**location** *node-id*][**rack]**

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support isis** command to run **show** commands that display information specific to IS-IS debugging. This command generates IS-IS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support routing isis** command:

- show isis trace all location all
- **show isis all**
- **show clns statistics**
- **show imds interface all**
- **show ipv4 int brief**
- **show ipv6 int brief**
- **show route ipv4**
- **show route ipv6**
- **show inst which comp clns-isis**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support routing ospf

To automatically run **show** commands that display information specific to Open Shortest Path First (OSPF) debugging, use the **show tech-support routing ospf** command in EXEC mode.

show tech-support routing ospf [process*process-id*] [**no-trace**] [{**active** | **standby**}] {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]}[**location** *node-id*][**rack]**

Syntax Description

process *process-id*	(Optional) Colletcs show tech-support information for particular OSPF process. *process-id* argument is the name of the OSPF process.
no-trace	(Optional) Excludes trace information from the command output.
active	(Optional) Displays information from active route processor only.
standby	(Optional) Displays information from standby route processor only.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.2	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support routing ospf** command to run **show** commands that display information specific to OSPF debugging. This command generates OSPF debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support routing ospf** command:

- show ospf
- **show ospf vrf all**
- **show ospf summary**
- **show ospf vrf all summary**
- **show ospf interface**
- **show ospf vrf all interface**
- **show ospf virtual-links**
- **show ospf vrf all virtual-links**
- **show ospf neighbor detail**
- **show ospf vrf all neighbor detail**
- **show ospf database database-summary**
- **show ospf vrf all database database-summary**
- **show ospf database router self-originate**
- **show ospf vrf all database router self-originate**
- **show ospf statistics prot**
- **show ospf statistics raw-io**
- **show ospf statistics te**
- **show ospf statistics spf**

- **show ospf statistics rib-thread**
- **show ospf statistics rib-batch**
- **show ospf message-queue**
- **show ospf border-routers**
- **show ospf vrf all border-routers**
- **show ospf retransmission-list**
- **show ospf vrf all retransmission-list**
- **show ospf request-list**
- **show ospf vrf all request-list**
- **show ospf flood-list**
- **show ospf vrf all flood-list**
- **show ospf maxage-list**
- **show ospf vrf all maxage-list**
- **show ospf bad-checksum**
- **show ospf vrf all bad-checksum**
- **show ospf standby**
- **show ospf vrf all standby**
- **show ip interface brief**
- **show route ipv4 summary**
- **show route vrf all ipv4 summary**
- **show ospf trace all**
- **show logging process ospf**

Note

- If you do not specify any options, all information is collected by default.
- Active and standby options are exclusive and only one of them can be used. When neither active or standby is used, the information is collected from both RPs.
- The **no-trace** option can be used with or without specifying the **active** or **standby** options.
- When **standby** option is specified, only ospf- related information from the standby RP is included in the output. The common non-ospf information such as version, placement info, logging and so on are not included.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support routing ospfv3

To automatically run **show** commands that display information specific to Open Shortest Path First Version 3 (OSPFv3) debugging, use the **show tech-support routing ospfv3** command in EXEC mode.

show tech-support routing ospfv3 [*instance*] [**detail**] {**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]}[**location** *node-id*][**rack]**

Syntax Description

instance	(Optional) Name of the OSPFv3 instance.
detail	(Optional) Displays all available OSPFv3 information.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.3.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support routing ospfv3** command to run **show** commands that display information specific to OSPFv3 debugging. This command generates OSPFv3 debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support routing ospfv3** command:

- **show version**
- **show run router ospfv3**
- **show route ipv6 ospf**
- **show ospfv3**
- **show ospfv3 interface**
- **show ospfv3 virtual-links**
- **show ospfv3 neighbor**
- **show ospfv3 message-queue**
- **show ospfv3 request-list**
- **show ospfv3 retransmission-list**
- **show ospfv3 flood-list**
- **show ospfv3 border-routers**
- **show ospfv3 database database-summary**
- **show ospfv3 database**
- **show ospfv3 route**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support routing rpl

To automatically run **show** commands that display information specific to Routing Policy Language (RPL) debugging, use the **show tech-support routing rpl** command in EXEC mode.

show tech-support routing rpl [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] | [**location** *node-id*] | [**rack**]

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack	(Optional) Displays the list of racks.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.5.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a

file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support routing rpl** command to run **show** commands that display information specific to RPL debugging. This command generates RPL debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

The following **show** commands run automatically when you run the **show tech-support routing rpl** command:

- **show running-config rpl**
- **show process policy_repository**
- **show rpl route-policy** *policy-name* **pxl**
- **show sysdb reg notif path /ipc/gl/policy_lang/policies/routing/** *policy-name* **/pxl s**

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support serial

To automatically run **show** commands that display information specific to serial debugging, use the **show tech-support serial** command in EXEC mode.

show tech-support serial [{**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]}] [**interface** *type instance*] [**show-only**] [**trace-only**] [{**location** *node-id*}][**rack]**

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
interface	(Optional) Collects information about a specific interface.
type	Interface type. For more information, use the question mark (?) online help function.

instance	Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. • *rack*: Chassis number of the rack. • *slot*: Physical slot number of the modular services card or line card. • *module*: Module number. A physical layer interface module (PLIM) is always 0. • *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (?) online help function.
show-only	(Optional) Collects only show command information.
rack	(Optional) Displays the list of racks.
trace-only	(Optional) Collects only trace information.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support serial** command for serial-related data, such as T1/E1. This command generates serial debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support sanitized

To automatically run **show** commands that display information specific to sanitized configuration output, use the **show tech-support sanitized** command in EXEC mode.

show tech-support sanitized [{**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]}] [{**location** *node-id* | **all**}] [**rack**]

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates sanitized configuration output for debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

show tech-support services

To automatically run **show** commands that display information specific to tech-support information that relates to services, use the **show tech-support services** command in EXEC mode.

show tech-support services { cgn | svi | sesh } [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [**location** *node-id*] [**rack**]

Syntax Description

cgn	Collects PD (platform dependent) information about Service Virtual Interfaces and CGN service
svi	Collets information about Service Virtual Interfaces.
sesh	Collects PD information about SVI and Service Hosting Framework(SESH)
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk1:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
rack	(Optional) Displays the list of racks.
location*node-id*	Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support services** command to run **show** commands that display information specific to the services diversion infrastructure, which is used with the service blade offerings for the Cisco IOS XR platforms. This command generates tech-support information that relates to services debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support snmp

To automatically run **show** commands that display information specific to tech-support information related to Simple Network Management Protocol (SNMP) agent, use the **show tech-support snmp** command in EXEC mode.

show tech-support snmp [{**entitymib** | **ifmib** | **rack** | **location** [*node-id* | *all*] | [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]]}]

Syntax Description

entitymib	(Optional) Displays the entitymib debugging information.
ifmib	(Optional) Displays the ifmib debugging information.
file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **compactflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **flash:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **slot0:** *filename* • **slot1:** *filename* • **tftp:** *filename*
location*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
rack	(Optional) Displays the list of racks.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Note This command is not required during normal use of the router.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read
cisco-support	read

show tech-support spaipc

To automatically run **show** commands that display information specific to SPA Inter Process Communication (SPAIPC) debugging, use the **show tech-support spaipc** command inEXEC mode.

show tech-support spaipc {**terminal** [**page**] | **file** *send-to* [**background**] [{**compressed** | **uncompressed**}]} [**interface** *type interface-path-id*] [**show-only**] [**trace-only**] [{**location** *node-id* | **all**}]

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
interface	(Optional) Collects information about a specific interface.
type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
show-only	(Optional) Collects only show command information.
terminal	Displays the command output on the terminal.
trace-only	(Optional) Collects only trace information.

location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates SPAIPC debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example how to run the **show tech-support spaipc** command:

```
RP/0/RP0/CPU0:router# show tech-support spaipc terminal page

------------------------------------------------------------------------------
                            show tech-support spaipc

------------------------------------------------------------------------------
```

```
----------------------------- show running-config -----------------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
```

```
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 encapsulation dot1q 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 encapsulation dot1q 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
 encapsulation dot1q 31
!
interface Bundle-POS24
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
interface MgmtEth0/RP1/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.71 255.255.255.0
!
interface GigabitEthernet0/1/5/0
 description Connected to P2_CRS-8 GE 0/1/5/0
 ipv4 address 10.12.16.1 255.255.255.0
!
interface GigabitEthernet0/1/5/1
 description Connected to P4_C12810 GE 5/2
 ipv4 address 10.14.8.1 255.255.255.0
!
interface GigabitEthernet0/1/5/2
 description Connected to PE6_C12406 GE 0/4/0/1
 ipv4 address 10.16.4.1 255.255.255.0
!
interface GigabitEthernet0/1/5/3
 shutdown
!
interface GigabitEthernet0/1/5/4
 shutdown
```

```
!
interface GigabitEthernet0/1/5/5
```

show tech-support sysdb

To automatically run **show** commands that display information specific to the System Database (SysDB), use the **show tech-support sysdb** command in EXEC mode.

show tech-support sysdb [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [**rack**] [**location** *node-id*]

Syntax Description

file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
rack	(Optional) Displays the list of racks.
location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with *.tgz* extension. You can share this file with Cisco Technical Support. To share, use the **copy** command to copy the *.tgz* file to a server or local machine. For example, **copy harddisk:/showtech/***name.tgz* **tftp://***server_path*.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

The SysDB is the memory database that is used to store configuration and statistical data with some IPC data. This command generates SysDB information that relates to debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

show tech-support terminal

To automatically run **show** commands that display information specific to the terminal, use the **show tech-support terminal** command in EXEC mode.

show tech-support terminal [{**location** {*node-id* | **all**} | **page**}]

Syntax Description

location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates terminal information that relates to debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

Examples

The following example shows some of the **show tech-support terminal** command output:

```
RP/0/RP0/CPU0:router# show tech-support terminal page

------------------------------------------------------------------------------

                                show tech-support

------------------------------------------------------------------------------


---------------------- show running-config (no password) ----------------------

Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 <removed>
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
```

```
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
 dot1q vlan 31
!
interface Bundle-POS24
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
interface MgmtEth0/RP1/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.71 255.255.255.0
!
interface GigabitEthernet0/1/5/0
 description Connected to P2_CRS-8 GE 0/1/5/0
 ipv4 address 10.12.16.1 255.255.255.0
!
```

```
interface GigabitEthernet0/1/5/1
 description Connected to P4_C12810 GE 5/2
 ipv4 address 10.14.8.1 255.255.255.0
!
interface GigabitEthernet0/1/5/2
 description Connected to PE6_C12406 GE 0/4/0/1
 ipv4 address 10.16.4.1 255.255.255.0
!
interface GigabitEthernet0/1/5/3
 shutdown
!
interface GigabitEthernet0/1/5/4
 shutdown
!
interface GigabitEthernet0/1/5/5
 shutdown
!
interface GigabitEthernet0/1/5/6
 description Connected to P2_CRS-8 GE 0/1/5/6
 bundle id 28 mode active
!
interface GigabitEthernet0/1/5/7
 description Connected to P2_CRS-8 GE 0/1/5/7
 bundle id 28 mode active
!
interface GigabitEthernet0/6/5/0
 shutdown
!
interface GigabitEthernet0/6/5/1
 description Connected to P2_CRS-8 GE 0/6/5/1
 ipv4 address 10.12.20.1 255.255.255.0
!
interface GigabitEthernet0/6/5/2
 description Connected to PE6_C12406 GE 0/4/0/2
 ipv4 address 10.16.8.1 255.255.255.0
!
interface GigabitEthernet0/6/5/3
 shutdown
!
interface GigabitEthernet0/6/5/4
 shutdown
!
interface GigabitEthernet0/6/5/5
 shutdown
!
interface GigabitEthernet0/6/5/6
 shutdown
!
interface GigabitEthernet0/6/5/7
 description Connected to P2_CRS-8 GE 0/6/5/7
 ipv4 address 10.12.40.1 255.255.255.0
!
interface POS0/1/0/0
 shutdown
!
interface POS0/1/0/1
 description Connected to P2_CRS-8 POS 0/1/0/1
 ipv4 address 10.12.8.1 255.255.255.0
!
interface POS0/1/0/2
 shutdown
!
interface POS0/1/0/3
 shutdown
```

```
!
interface POS0/1/4/0
 description Connected to P2_CRS-8 POS 0/1/4/0
 bundle id 24 mode active
!
interface POS0/1/4/1
 description Connected to P2_CRS-8 POS 0/1/4/1
 bundle id 24 mode active
!
interface POS0/1/4/2
 description Connected to P2_CRS-8 POS 0/1/4/2
 ipv4 address 10.12.32.1 255.255.255.0
 encapsulation ppp
 ppp pap sent-username P1_CRS-8 password encrypted <removed>
 ppp authentication chap pap
 ppp chap password encrypted <removed>
!
interface POS0/1/4/3
```

show tech-support tty

To automatically run **show** commands that display information specific to tech-support information related to TTY, use the **show tech-support tty** command in EXEC mode.

show tech-support tty [{**file** *sent-to* [{**background** | **compressed** | **uncompressed** }] | **location** *node-id* | **rack** *rack-id*}]

Syntax Description

file	(Optional) Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:** *filename* • **disk0:** *filename* • **disk0a:** *filename* • **disk1:** *filename* • **disk1a:** *filename* • **disk2:** *filename* • **ftp:** *filename* • **harddisk:** *filename* • **harddiska:** *filename* • **harddiskb:** *filename* • **lcdisk0:** *filename* • **lcdisk0a:** *filename* • **nvram:** *filename* • **rcp:** *filename* • **tftp:** *filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
rack *rack-id*	(Optional) Specifies a list of racks. The *rack-id* denotes a rack number.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the **show tech-support tty** command to run **show** commands that display information specific to tty debugging. This command generates tty debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

Task ID

Task ID	Operation
cisco-support	read

Example

The following example shows the output of the **show tech-support tty** command:

```
RP/0/RP0/CPU0:router# show tech-support tty
Tue Sep  4 09:41:21.414 UTC
++ Show tech start time: 2012-Sep-04.094121.UTC ++
Tue Sep 04 09:41:22 UTC 2012 Waiting for gathering to complete
.............................
Tue Sep 04 09:44:31 UTC 2012 Compressing show tech output
Show tech output available at 0/RP0/CPU0 :
harddisk:/showtech/showtech-tty-2012-Sep-04.094121.UTC.tgz
++ Show tech end time: 2012-Sep-04.094432.UTC ++
```

show tty details

To display TTY session information, use the **show tty details** command in the EXEC mode.

show tty details [{**location** *node-id*}]

Syntax Description

location	*node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.3.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
tty-access	read

Example

The following example shows output of the **show tty details** command:

```
RP/0/RP0/CPU0:router# show tty details
Mon Sep  3 08:18:19.057 UTC

   Session Id     Exec Pid      Master Pid       PTY Count       Net Count      IBuf Count
Con         0     39280825            ----            ----            ----            ----

Aux         0         8201            ----            ----            ----            ----

   Session Id     Exec Pid      Master Pid       PTY Count       Net Count      IBuf Count
VTY         0      1077467         1077452             642           40582             655
```

The following example shows output of the **show tty details location 0/RP0/CPU0** command:

```
RP/0/RP0/CPU0:router# show tty details location 0/RP0/CPU0
Mon Sep  3 08:20:29.469 UTC

   Session Id     Exec Pid      Master Pid       PTY Count       Net Count      IBuf Count
Con         0     39280825            ----            ----            ----            ----

Aux         0         8201            ----            ----            ----            ----

   Session Id     Exec Pid      Master Pid       PTY Count       Net Count      IBuf Count
VTY         0      1077467         1077452             642           40582             655
```

Watchdog Commands

This module describes commands used to monitor the memory states and thresholds of routers running Cisco IOS XR software.

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

show critmon context

To display information about the context for the wd-critical-mon process, use the **show critmon context** command in EXEC mode.

show critmon context {**all** | **deadline** [**client** *client-name*] | **ticker** | **watcher**} **location** {*node-id* | **all**}

Syntax Description

all	Displays all context information for the wd-critical-mon process.
deadline	Displays the context information for the deadline monitoring client application.
client	(Optional) Displays information only for the specified client.
client-name	Name of the client.
ticker	Displays information for the ticker context for the wd-critical-mon process.
watcher	Displays information for the watcher context for the wd-critical-mon process.
location	Specifies a node to filter.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

Use the **show critmon context** command to display information about the context for the wd-critical-mon process.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following sample output is from the **show critmon context** command:

```
RP/0/RP0/CPU0:router# show critmon context all location all

------------------------------------------------------------------------------
Ticker context info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 CPU#                      : 0
 Ticker counter            : 2245
 Ticker last ran timestamp : 02/10/2008 01:11:10
```

```
------------------------------------------------------------------------------
Watcher context info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 Watcher counter  : 751
 Watcher last ran : 02/10/2008 01:11:10


------------------------------------------------------------------------------
Deadline monitoring context info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 Client         : wdsysmon
 PunchTimestamp : 02/10/2008 01:11:09
 PunchCounter   : 226



------------------------------------------------------------------------------
Ticker context info (Node: 0/4/CPU0)
------------------------------------------------------------------------------
 CPU#                      : 0
 Ticker counter            : 74
 Ticker last ran timestamp : 02/10/2008 01:11:10



------------------------------------------------------------------------------
Watcher context info (Node: 0/4/CPU0)
------------------------------------------------------------------------------
 Watcher counter  : 24
 Watcher last ran : 02/10/2008 01:11:09


------------------------------------------------------------------------------
Deadline monitoring context info (Node: 0/4/CPU0)
------------------------------------------------------------------------------
 Client         : wdsysmon
 PunchTimestamp : 02/10/2008 01:11:10
 PunchCounter   : 8



------------------------------------------------------------------------------
Ticker context info (Node: 0/2/CPU0)
------------------------------------------------------------------------------
 CPU#                      : 0
 Ticker counter            : 61
 Ticker last ran timestamp : 02/10/2008 01:11:10



------------------------------------------------------------------------------
Watcher context info (Node: 0/2/CPU0)
------------------------------------------------------------------------------
 Watcher counter  : 21
 Watcher last ran : 02/10/2008 01:11:10


------------------------------------------------------------------------------
Deadline monitoring context info (Node: 0/2/CPU0)
------------------------------------------------------------------------------
 Client         : wdsysmon
```

```
 PunchTimestamp : 02/10/2008 01:11:09
 PunchCounter   : 6


------------------------------------------------------------------------------
Ticker context info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 CPU#                      : 0
 Ticker counter            : 2093
 Ticker last ran timestamp : 02/10/2008 01:11:10


------------------------------------------------------------------------------
Watcher context info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 Watcher counter  : 703
 Watcher last ran : 02/10/2008 01:11:10


------------------------------------------------------------------------------
Deadline monitoring context info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 Client         : wdsysmon
 PunchTimestamp : 02/10/2008 01:11:09
 PunchCounter   : 211
```

This table describes the significant fields shown in the display.

Table 39: show critmon context Field Descriptions

Field	Description
Ticker context info	wd-critical-mon process ticker context information for the node.
CPU	CPU number.
Ticker counter	Current counter for the wd-critical-mon ticker thread. The ticker counter field specifies the number of times the ticker thread was run.
Ticker last ran timestamp	Timestamp for the last time the wd-critical-mon ticker thread was run.
Watcher context info	wd-critical-mon watcher thread context information that is used for the node.
Watcher counter	Current counter for the wd-critical-mon watcher thread. The watcher counter field specifies the number of times the watcher thread was run
Watcher last ran	Timestamp that is used for the last run of the wd-critical-mon watcher thread.
Deadline monitoring context info	wd-critical-mon deadline monitoring information that is used for the node.
Client	Client name for deadline monitoring.
PunchTimestamp	Timestamp that is used for the last run of the client application.

Field	Description
PunchCounter	Current counter for the deadline monitoring client. This field specifies the number of times that the client application can punch the counter.

Related Commands

Command	Description
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon deadline

To display information about deadline monitoring, use the **show critmon deadline** command in EXEC mode.

show critmon deadline registration [**client** *client-name*] **location** {*node-id* | **all**}

Syntax Description

registration	Displays the deadline monitoring registration information.
client	(Optional) Displays information only for the specified client.
client-name	Name of the client.
location	Specifies a node to filter.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

Use the **show critmon deadline** command to display information about the deadline monitoring.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following sample output is from the **show critmon deadline** command:

```
RP/0/RP0/CPU0:router# show critmon deadline registration location all

------------------------------------------------------------------------------
Deadline monitoring registration info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 ID ClientName               Activated  tick address  timeout vale(sec)
 -- -----------------------  ---------  ------------  ----------------
 0  wdsysmon                 Yes        0x6023d000    60


------------------------------------------------------------------------------
Deadline monitoring registration info (Node: 0/4/CPU0)
------------------------------------------------------------------------------
 ID ClientName               Activated  tick address  timeout vale(sec)
 -- -----------------------  ---------  ------------  ----------------
 0  wdsysmon                 Yes        0x38146000    60
```

```
------------------------------------------------------------------------------
Deadline monitoring registration info (Node: 0/2/CPU0)
------------------------------------------------------------------------------
 ID ClientName               Activated  tick address  timeout vale(sec)
 -- -----------------------  ---------  ------------  ----------------
 0  wdsysmon                 Yes        0x38146000    60


------------------------------------------------------------------------------
Deadline monitoring registration info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 ID ClientName               Activated  tick address  timeout vale(sec)
 -- -----------------------  ---------  ------------  ----------------
 0  wdsysmon                 Yes        0x38101000    60
```

This table describes the significant fields shown in the display.

Table 40: show critmon deadline Field Descriptions

Field	Description
Deadline monitoring registration info	Deadline monitoring registration information that is used for the node.
ID	Client ID that is internally managed by the wd-critical-mon process.
ClientName	Name of the client.
Activated	Field specifies that deadline monitoring is activated or not.
tick address	Tick memory address for the client application.
timeout vale(sec)	Deadline timeout value.

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon statistics

To display information about the critical monitor statistics, use the **show critmon statistics** command in EXEC mode.

show critmon statistics {**all** | **congestion** | **deadline client** *client-name* | **ticker** | **watcher**} **last** *hours* **location** {*node-id* | **all**}

Syntax Description

all	Displays all the information for the critical monitor.
congestion	Displays all the CPU congestion information for the critical monitor.
deadline	Displays all the statistics information for the deadline monitor.
client	Displays information only for the specified client.
client-name	Name of the client.
ticker	Displays the ticker statistics for the wd-critical-mon process.
watcher	Displays the watcher statistics for the wd-critical-mon process.
last	Displays only the last number of hours.
hours	Number of last hours. The range is from 1 to 24.
location	Specifies a node to filter.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced .

Usage Guidelines

Use the**show critmon statistics** command to display information about the critical monitor statistics.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following sample output is from the **show critmon statistics** command:

```
RP/0/RP0/CPU0:router# show critmon statistics all last 5 location all

------------------------------------------------------------------------------
Ticker statistics info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 Period        SnapShotTimestamp                Frequency
 (min)  CPU#   MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ------ ------ -------------------  ----------  ------------
 15     cpu:0  10/22/2007 14:33:39  4478        298
 15     cpu:0  10/22/2007 14:48:39  4477        298
 15     cpu:0  10/22/2007 15:03:39  4478        298
 15     cpu:0  10/22/2007 15:18:39  4477        298
 15     cpu:0  10/22/2007 15:33:39  4478        298
 15     cpu:0  10/22/2007 15:48:39  4478        298
 15     cpu:0  10/22/2007 16:03:39  4477        298
 15     cpu:0  10/22/2007 16:18:39  4478        298
 15     cpu:0  10/22/2007 16:33:39  4477        298
 15     cpu:0  10/22/2007 16:48:39  4478        298
 15     cpu:0  10/22/2007 17:03:39  4477        298
 15     cpu:0  10/22/2007 17:18:39  4478        298
 15     cpu:0  10/22/2007 17:33:39  4477        298
 15     cpu:0  10/22/2007 17:48:39  4478        298
 15     cpu:0  10/22/2007 18:03:39  4477        298
 15     cpu:0  10/22/2007 18:18:39  4478        298
 15     cpu:0  10/22/2007 18:33:39  4478        298
 15     cpu:0  10/22/2007 18:48:39  4477        298
 15     cpu:0  10/22/2007 19:03:39  4477        298
 15     cpu:0  10/22/2007 19:18:39  4478        298


------------------------------------------------------------------------------
Watcher statistics info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 Period SnapShotTimestamp                 Frequency
 (min)  MM/DD/YYYY hh:mm:ss  watch count  (count/min)
 ------ -------------------  -----------  ------------
 15     10/22/2007 14:33:39  1498         99
 15     10/22/2007 14:48:39  1497         99
 15     10/22/2007 15:03:39  1498         99
 15     10/22/2007 15:18:39  1497         99
 15     10/22/2007 15:33:39  1498         99
 15     10/22/2007 15:48:39  1497         99
 15     10/22/2007 16:03:39  1498         99
 15     10/22/2007 16:18:39  1497         99
 15     10/22/2007 16:33:39  1498         99
 15     10/22/2007 16:48:39  1497         99
 15     10/22/2007 17:03:39  1498         99
 15     10/22/2007 17:18:39  1497         99
 15     10/22/2007 17:33:39  1498         99
 15     10/22/2007 17:48:39  1497         99
 15     10/22/2007 18:03:39  1498         99
 15     10/22/2007 18:18:39  1497         99
 15     10/22/2007 18:33:39  1498         99
 15     10/22/2007 18:48:39  1497         99
 15     10/22/2007 19:03:39  1498         99
 15     10/22/2007 19:18:39  1497         99


------------------------------------------------------------------------------
CPU congestion history (Node: 0/5/CPU0)
------------------------------------------------------------------------------

 No congestion history
```

```
------------------------------------------------------------------------------
Deadline monitoring statistics info (Node: 0/5/CPU0)
------------------------------------------------------------------------------
 client                   SnapShotTimestamp                Frequency
 (name)                   MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ------------------------ -------------------  ----------  ------------
 wdsysmon                 10/22/2007 14:33:39  450         30
 wdsysmon                 10/22/2007 14:48:39  450         30
 wdsysmon                 10/22/2007 15:03:39  450         30
 wdsysmon                 10/22/2007 15:18:39  449         29
 wdsysmon                 10/22/2007 15:33:39  450         30
 wdsysmon                 10/22/2007 15:48:39  450         30
 wdsysmon                 10/22/2007 16:03:39  450         30
 wdsysmon                 10/22/2007 16:18:39  449         29
 wdsysmon                 10/22/2007 16:33:39  450         30
 wdsysmon                 10/22/2007 16:48:39  450         30
 wdsysmon                 10/22/2007 17:03:39  450         30
 wdsysmon                 10/22/2007 17:18:39  450         30
 wdsysmon                 10/22/2007 17:33:39  449         29
 wdsysmon                 10/22/2007 17:48:39  450         30
 wdsysmon                 10/22/2007 18:03:39  450         30
 wdsysmon                 10/22/2007 18:18:39  450         30
 wdsysmon                 10/22/2007 18:33:39  449         29
 wdsysmon                 10/22/2007 18:48:39  450         30
 wdsysmon                 10/22/2007 19:03:39  450         30
 wdsysmon                 10/22/2007 19:18:39  450         30


------------------------------------------------------------------------------
Ticker statistics info (Node: 0/4/CPU0)
------------------------------------------------------------------------------
 Period        SnapShotTimestamp                Frequency
 (min)  CPU#   MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ------ ------ -------------------  ----------  ------------
 15     cpu:0  10/22/2007 14:25:38  4454        296
 15     cpu:0  10/22/2007 14:40:38  4455        297
 15     cpu:0  10/22/2007 14:55:38  4454        296
 15     cpu:0  10/22/2007 15:10:37  4455        297
 15     cpu:0  10/22/2007 15:25:37  4454        296
 15     cpu:0  10/22/2007 15:40:37  4455        297
 15     cpu:0  10/22/2007 15:55:37  4454        296
 15     cpu:0  10/22/2007 16:10:37  4455        297
 15     cpu:0  10/22/2007 16:25:37  4455        297
 15     cpu:0  10/22/2007 16:40:37  4454        296
 15     cpu:0  10/22/2007 16:55:37  4455        297
 15     cpu:0  10/22/2007 17:10:37  4455        297
 15     cpu:0  10/22/2007 17:25:37  4455        297
 15     cpu:0  10/22/2007 17:40:37  4454        296
 15     cpu:0  10/22/2007 17:55:37  4455        297
 15     cpu:0  10/22/2007 18:10:37  4454        296
 15     cpu:0  10/22/2007 18:25:37  4454        296
 15     cpu:0  10/22/2007 18:40:37  4455        297
 15     cpu:0  10/22/2007 18:55:36  4455        297
 15     cpu:0  10/22/2007 19:10:36  4455        297


------------------------------------------------------------------------------
Watcher statistics info (Node: 0/4/CPU0)
------------------------------------------------------------------------------
 Period SnapShotTimestamp                 Frequency
 (min)  MM/DD/YYYY hh:mm:ss  watch count  (count/min)
 ------ -------------------  -----------  ------------
```

```
 15     10/22/2007 14:25:38  1496         99
 15     10/22/2007 14:40:38  1495         99
 15     10/22/2007 14:55:38  1495         99
 15     10/22/2007 15:10:37  1495         99
 15     10/22/2007 15:25:37  1495         99
 15     10/22/2007 15:40:37  1495         99
 15     10/22/2007 15:55:37  1495         99
 15     10/22/2007 16:10:37  1495         99
 15     10/22/2007 16:25:37  1495         99
 15     10/22/2007 16:40:37  1495         99
 15     10/22/2007 16:55:37  1495         99
 15     10/22/2007 17:10:37  1495         99
 15     10/22/2007 17:25:37  1495         99
 15     10/22/2007 17:40:37  1495         99
 15     10/22/2007 17:55:37  1495         99
 15     10/22/2007 18:10:37  1495         99
 15     10/22/2007 18:25:37  1495         99
 15     10/22/2007 18:40:37  1495         99
 15     10/22/2007 18:55:36  1495         99
 15     10/22/2007 19:10:36  1495         99


--------------------------------------------------------------------------------
CPU congestion history (Node: 0/4/CPU0)
--------------------------------------------------------------------------------

 No congestion history


--------------------------------------------------------------------------------
Deadline monitoring statistics info (Node: 0/4/CPU0)
--------------------------------------------------------------------------------
 client                  SnapShotTimestamp               Frequency
 (name)                  MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ----------------------- -------------------  ----------  ------------
 wdsysmon                10/22/2007 14:25:38  449         29
 wdsysmon                10/22/2007 14:40:38  450         30
 wdsysmon                10/22/2007 14:55:38  449         29
 wdsysmon                10/22/2007 15:10:37  450         30
 wdsysmon                10/22/2007 15:25:37  449         29
 wdsysmon                10/22/2007 15:40:37  450         30
 wdsysmon                10/22/2007 15:55:37  449         29
 wdsysmon                10/22/2007 16:10:37  450         30
 wdsysmon                10/22/2007 16:25:37  449         29
 wdsysmon                10/22/2007 16:40:37  450         30
 wdsysmon                10/22/2007 16:55:37  449         29
 wdsysmon                10/22/2007 17:10:37  450         30
 wdsysmon                10/22/2007 17:25:37  449         29
 wdsysmon                10/22/2007 17:40:37  450         30
 wdsysmon                10/22/2007 17:55:37  449         29
 wdsysmon                10/22/2007 18:10:37  450         30
 wdsysmon                10/22/2007 18:25:37  449         29
 wdsysmon                10/22/2007 18:40:37  450         30
 wdsysmon                10/22/2007 18:55:36  449         29
 wdsysmon                10/22/2007 19:10:36  450         30


--------------------------------------------------------------------------------
Ticker statistics info (Node: 0/2/CPU0)
--------------------------------------------------------------------------------
 Period        SnapShotTimestamp               Frequency
 (min)  CPU#   MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ------ ------ -------------------  ----------  ------------
 15     cpu:0  10/22/2007 14:25:41  4454        296
```

```
 15      cpu:0  10/22/2007 14:40:41  4455         297
 15      cpu:0  10/22/2007 14:55:41  4454         296
 15      cpu:0  10/22/2007 15:10:41  4455         297
 15      cpu:0  10/22/2007 15:25:41  4455         297
 15      cpu:0  10/22/2007 15:40:41  4454         296
 15      cpu:0  10/22/2007 15:55:41  4455         297
 15      cpu:0  10/22/2007 16:10:41  4454         296
 15      cpu:0  10/22/2007 16:25:41  4455         297
 15      cpu:0  10/22/2007 16:40:41  4454         296
 15      cpu:0  10/22/2007 16:55:40  4455         297
 15      cpu:0  10/22/2007 17:10:40  4455         297
 15      cpu:0  10/22/2007 17:25:40  4455         297
 15      cpu:0  10/22/2007 17:40:40  4454         296
 15      cpu:0  10/22/2007 17:55:40  4455         297
 15      cpu:0  10/22/2007 18:10:40  4454         296
 15      cpu:0  10/22/2007 18:25:40  4455         297
 15      cpu:0  10/22/2007 18:40:40  4454         296
 15      cpu:0  10/22/2007 18:55:40  4455         297
 15      cpu:0  10/22/2007 19:10:40  4455         297


------------------------------------------------------------------------------
Watcher statistics info (Node: 0/2/CPU0)
------------------------------------------------------------------------------
 Period SnapShotTimestamp                  Frequency
 (min)  MM/DD/YYYY hh:mm:ss  watch count  (count/min)
 ------ -------------------  -----------  ------------
 15     10/22/2007 14:25:41  1495         99
 15     10/22/2007 14:40:41  1495         99
 15     10/22/2007 14:55:41  1495         99
 15     10/22/2007 15:10:41  1495         99
 15     10/22/2007 15:25:41  1495         99
 15     10/22/2007 15:40:41  1495         99
 15     10/22/2007 15:55:41  1495         99
 15     10/22/2007 16:10:41  1495         99
 15     10/22/2007 16:25:41  1495         99
 15     10/22/2007 16:40:41  1496         99
 15     10/22/2007 16:55:40  1495         99
 15     10/22/2007 17:10:40  1495         99
 15     10/22/2007 17:25:40  1495         99
 15     10/22/2007 17:40:40  1495         99
 15     10/22/2007 17:55:40  1495         99
 15     10/22/2007 18:10:40  1495         99
 15     10/22/2007 18:25:40  1495         99
 15     10/22/2007 18:40:40  1495         99
 15     10/22/2007 18:55:40  1495         99
 15     10/22/2007 19:10:40  1495         99


------------------------------------------------------------------------------
CPU congestion history (Node: 0/2/CPU0)
------------------------------------------------------------------------------

 No congestion history


------------------------------------------------------------------------------
Deadline monitoring statistics info (Node: 0/2/CPU0)
------------------------------------------------------------------------------
 client                  SnapShotTimestamp                Frequency
 (name)                  MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ----------------------- -------------------  ----------  ------------
 wdsysmon                10/22/2007 14:25:41  449         29
 wdsysmon                10/22/2007 14:40:41  450         30
```

```
 wdsysmon                 10/22/2007 14:55:41  449         29
 wdsysmon                 10/22/2007 15:10:41  450         30
 wdsysmon                 10/22/2007 15:25:41  449         29
 wdsysmon                 10/22/2007 15:40:41  450         30
 wdsysmon                 10/22/2007 15:55:41  449         29
 wdsysmon                 10/22/2007 16:10:41  450         30
 wdsysmon                 10/22/2007 16:25:41  449         29
 wdsysmon                 10/22/2007 16:40:41  450         30
 wdsysmon                 10/22/2007 16:55:40  449         29
 wdsysmon                 10/22/2007 17:10:40  450         30
 wdsysmon                 10/22/2007 17:25:40  449         29
 wdsysmon                 10/22/2007 17:40:40  450         30
 wdsysmon                 10/22/2007 17:55:40  449         29
 wdsysmon                 10/22/2007 18:10:40  450         30
 wdsysmon                 10/22/2007 18:25:40  449         29
 wdsysmon                 10/22/2007 18:40:40  450         30
 wdsysmon                 10/22/2007 18:55:40  449         29
 wdsysmon                 10/22/2007 19:10:40  450         30

------------------------------------------------------------------------------
Ticker statistics info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 Period        SnapShotTimestamp               Frequency
 (min)  CPU#   MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ------ ------ ------------------  ----------  ------------
 15     cpu:0  10/22/2007 14:33:53  4456        297
 15     cpu:0  10/22/2007 14:48:53  4455        297
 15     cpu:0  10/22/2007 15:03:53  4456        297
 15     cpu:0  10/22/2007 15:18:53  4455        297
 15     cpu:0  10/22/2007 15:33:53  4455        297
 15     cpu:0  10/22/2007 15:48:53  4456        297
 15     cpu:0  10/22/2007 16:03:53  4455        297
 15     cpu:0  10/22/2007 16:18:52  4456        297
 15     cpu:0  10/22/2007 16:33:52  4455        297
 15     cpu:0  10/22/2007 16:48:52  4456        297
 15     cpu:0  10/22/2007 17:03:52  4455        297
 15     cpu:0  10/22/2007 17:18:52  4456        297
 15     cpu:0  10/22/2007 17:33:52  4455        297
 15     cpu:0  10/22/2007 17:48:52  4455        297
 15     cpu:0  10/22/2007 18:03:52  4456        297
 15     cpu:0  10/22/2007 18:18:52  4455        297
 15     cpu:0  10/22/2007 18:33:52  4456        297
 15     cpu:0  10/22/2007 18:48:52  4455        297
 15     cpu:0  10/22/2007 19:03:52  4456        297
 15     cpu:0  10/22/2007 19:18:52  4455        297


------------------------------------------------------------------------------
Watcher statistics info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 Period SnapShotTimestamp                Frequency
 (min)  MM/DD/YYYY hh:mm:ss  watch count  (count/min)
 ------ ------------------  -----------  ------------
 15     10/22/2007 14:33:53  1495         99
 15     10/22/2007 14:48:53  1495         99
 15     10/22/2007 15:03:53  1495         99
 15     10/22/2007 15:18:53  1495         99
 15     10/22/2007 15:33:53  1495         99
 15     10/22/2007 15:48:53  1495         99
 15     10/22/2007 16:03:53  1495         99
 15     10/22/2007 16:18:52  1495         99
 15     10/22/2007 16:33:52  1496         99
 15     10/22/2007 16:48:52  1495         99
```

```
 15     10/22/2007 17:03:52  1495         99
 15     10/22/2007 17:18:52  1495         99
 15     10/22/2007 17:33:52  1495         99
 15     10/22/2007 17:48:52  1495         99
 15     10/22/2007 18:03:52  1495         99
 15     10/22/2007 18:18:52  1495         99
 15     10/22/2007 18:33:52  1495         99
 15     10/22/2007 18:48:52  1495         99
 15     10/22/2007 19:03:52  1495         99
 15     10/22/2007 19:18:52  1495         99


------------------------------------------------------------------------------
CPU congestion history (Node: 0/1/CPU0)
------------------------------------------------------------------------------

 No congestion history


------------------------------------------------------------------------------
Deadline monitoring statistics info (Node: 0/1/CPU0)
------------------------------------------------------------------------------
 client                  SnapShotTimestamp               Frequency
 (name)                  MM/DD/YYYY hh:mm:ss  tick count  (count/min)
 ----------------------- -------------------  ----------  ------------
 wdsysmon                10/22/2007 14:33:53  449         29
 wdsysmon                10/22/2007 14:48:53  450         30
 wdsysmon                10/22/2007 15:03:53  449         29
 wdsysmon                10/22/2007 15:18:53  450         30
 wdsysmon                10/22/2007 15:33:53  449         29
 wdsysmon                10/22/2007 15:48:53  450         30
 wdsysmon                10/22/2007 16:03:53  450         30
 wdsysmon                10/22/2007 16:18:52  449         29
 wdsysmon                10/22/2007 16:33:52  450         30
 wdsysmon                10/22/2007 16:48:52  449         29
 wdsysmon                10/22/2007 17:03:52  450         30
 wdsysmon                10/22/2007 17:18:52  449         29
 wdsysmon                10/22/2007 17:33:52  450         30
 wdsysmon                10/22/2007 17:48:52  449         29
 wdsysmon                10/22/2007 18:03:52  450         30
 wdsysmon                10/22/2007 18:18:52  450         30
 wdsysmon                10/22/2007 18:33:52  449         29
 wdsysmon                10/22/2007 18:48:52  450         30
 wdsysmon                10/22/2007 19:03:52  449         29
 wdsysmon                10/22/2007 19:18:52  450         30
```

This table describes the significant fields shown in the display.

Table 41: show critmon statistics Field Descriptions

Field	Description
Ticker statistics info	Ticker thread statistics information that is used for the node.
Period	Statistics sampling period.
CPU	CPU number.
SnapShotTimestamp	Timestamp that the statistics is saved.
tick count	Ticker counter for the sampling period

Field	Description
Frequency	Frequency for ticker or watcher punch count.
Watcher statistics info	Watcher thread statistics information that is used for the node.
watch count	Watcher count that is used for the sampling period.
CPU congestion history	History of CPU congestion.
Deadline monitoring statistics info	Deadline monitoring statistics information that is used for the node.
client	Name of deadline monitoring client.

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon trace all

To display information about all traces for a critical monitor, use the **show critmon trace all** command in EXEC mode.

show critmon trace all [**file** *filename* **original**] [**hexdump**] [**last** *entries*] [**reverse**] [**stats**] [**tailf**] [**unique**] [**verbose**] [**wrapping**] [**location** {*node-id* | **all**}]

Syntax Description

file	(Optional) Displays a specific file.
filename	Name of a specific file.
original	Specifies the original location of the file.
hexdump	(Optional) Displays traces in hexadecimal format.
last	(Optional) Displays trace information for a specific number of entries
entries	Number of entries. Replace entries 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. The range is from 1 to 4294967295.
reverse	(Optional) Displays the latest traces first.
stats	(Optional) Displays the statistics in the command output.
tailf	(Optional) Displays the new traces as they are added in the command output.
unique	(Optional) Displays the unique entries with counts in the command output.
verbose	(Optional) Displays the information for internal debugging in the command output.
wrapping	(Optional) Displays the wrapping entries in the command output.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following sample output is from the **show critmon trace all** command:

```
RP/0/RP0/CPU0:router# show critmon trace all hexdump

1 wrapping entries (768 possible, 0 filtered, 1 total)
Oct 11 03:18:11.584 wd-critical-mon/lib/info 0/5/CPU0 t10 tp0x00000302000000a0

Oct 11 03:18:11.584 wd-critical-mon/lib/info 0/5/CPU0 t10 critmon_deadline_regin
```

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon trace error

To display information about error traces for a critical monitor, use the **show critmon trace error** command in EXEC mode.

show critmon trace error [**file** *filename* **original**] [**hexdump**] [**last** *entries*] [**reverse**] [**stats**] [**tailf**] [**unique**] [**verbose**] [**wrapping**] [**location** {*node-id* | **all**}]

Syntax Description

file	(Optional) Displays a specific file.
filename	Name of a specific file.
original	Specifies the original location of the file.
hexdump	(Optional) Displays traces in hexadecimal format.
last	(Optional) Displays the last numbered entries.
entries	Number of entries. The range is from 1 to 4294967295.
reverse	(Optional) Displays the latest traces first.
stats	(Optional) Displays the statistics.
tailf	(Optional) Displays the new traces as they are added.
unique	(Optional) Displays the unique entries with counts.
verbose	(Optional) Displays the information for internal debugging.
wrapping	(Optional) Displays the wrapping entries in the command output.
location	(Optional) Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows how to use the **show critmon trace error** command:

```
RP/0/RP0/CPU0:router# show critmon trace error
```

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon trace info

To display trace data for an information type for the critical monitor, use the **show critmon trace info** command in EXEC mode.

show critmon trace info [**file** *filename* **original**] [**hexdump**] [**last** *entries*] [**reverse**] [**stats**] [**tailf**] [**unique**] [**verbose**] [**wrapping**] [**location** {*node-id* | **all**}]

Syntax Description

file	(Optional) Displays a specific file.
filename	Name of a specific file.
original	Specifies the original location of the file.
hexdump	(Optional) Displays traces in hexadecimal format.
last	(Optional) Displays the last numbered entries.
entries	Number of entries. The range is from 1 to 4294967295.
reverse	(Optional) Displays the latest traces first.
stats	(Optional) Displays the statistics.
tailf	(Optional) Displays the new traces as they are added.
unique	(Optional) Displays the unique entries with counts.
verbose	(Optional) Displays the information for internal debugging.
wrapping	(Optional) Displays the wrapping entries in the command output.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
location all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following shows how to use the **show critmon trace info** command:

```
RP/0/RP0/CPU0:router# show critmon trace info
```

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon trace lib-error

To display information about the trace data for the library error for the critical monitor, use the **show critmon trace lib-error** command in EXEC mode.

show critmon trace lib-error [**file** *filename* **original**] [**hexdump**] [**last** *entries*] [**reverse**] [**stats**] [**tailf**] [**unique**] [**verbose**] [**wrapping**] [**location** {*node-id* | **all**}]

Syntax Description

file	(Optional) Displays a specific file.
filename	Name of a specific file.
original	Specifies the original location of the file.
hexdump	(Optional) Displays traces in hexadecimal format.
last	(Optional) Displays the last numbered entries.
entries	Number of entries. The range is from 1 to 4294967295.
reverse	(Optional) Displays the latest traces first.
stats	(Optional) Displays the statistics.
tailf	(Optional) Displays the new traces as they are added.
unique	(Optional) Displays the unique entries with counts.
verbose	(Optional) Displays the information for internal debugging.
wrapping	(Optional) Displays the wrapping entries in the command output.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
location all	Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following shows how to use the **show critmon trace lib-error** command:

```
RP/0/RP0/CPU0:router# show critmon trace lib-error
```

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-info, on page 462	Displays trace data for the library information for the critical monitor.

show critmon trace lib-info

To display trace data for the library information for the critical monitor, use the **show critmon trace lib-info** command in EXEC mode.

show critmon trace lib-info [**file** *filename* **original**] [**hexdump**] [**last** *entries*] [**reverse**] [**stats**] [**tailf**] [**unique**] [**verbose**] [**wrapping**] [**location** {*node-id* | **all**}]

Syntax Description

file	(Optional) Displays a specific file.
filename	Name of a specific file.
original	Specifies the original location of the file.
hexdump	(Optional) Displays traces in hexadecimal format.
last	(Optional) Displays the last numbered entries.
entries	Number of entries. The range is from 1 to 4294967295.
reverse	(Optional) Displays the latest traces first.
stats	(Optional) Displays the statistics.
tailf	(Optional) Displays the new traces as they are added.
unique	(Optional) Displays the unique entries with counts.
verbose	(Optional) Displays the information for internal debugging.
wrapping	(Optional) Displays the wrapping entries in the command output.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.
location all	(Optional) Specifies all locations.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows how to use the **show critmon trace lib-info** command:

```
RP/0/RP0/CPU0:router# show critmon trace lib-info
```

Related Commands

Command	Description
show critmon context, on page 440	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 444	Displays information about deadline monitoring.
show critmon statistics, on page 446	Displays information about the critical monitor statistics.
show critmon trace all, on page 454	Displays information about all traces for a critical monitor.
show critmon trace error, on page 456	Displays information about error traces for a critical monitor.
show critmon trace info, on page 458	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 460	Displays information about the trace data for the library error for the critical monitor.

show reboot first

To display reboot information for a node first, use the **show reboot first** command in EXEC mode.

show reboot first {**crashinfo** | **syslog** | **trace**} **location** *node-id*

Syntax Description

crashinfo	Displays crash information.
syslog	Displays information for the system logs.
trace	Displays the log for the reboot trace.
location	Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
system	read

Examples

The following example shows a sample output from the **show reboot first** command:

```
RP/0/RP0/CPU0:router# show reboot first syslog location 0/4/cpu0

Syslog Timestamp: Mon Jul 28 14:27:26 2008

DRP/0/4/CPU0:Jan  1 00:00:00.000 : wd-critical-mon[79]: HW Watchdog: disabled o.
DRP/0/4/CPU0:Jan  1 00:00:00.000 : wd-critical-mon[79]: HW Watchdog: registratir
DRP/0/4/CPU0:Jun 10 11:24:12.258 : init[65540]: %OS-INIT-7-MBI_STARTED : total
DRP/0/4/CPU0:Jun 10 11:24:28.088 : insthelper[59]: %INSTALL-INSTHELPER-7-START_
DRP/0/4/CPU0:Jun 10 11:24:38.547 : insthelper[59]: %INSTALL-INSTHELPER-7-PKG_DO
DRP/0/4/CPU0:Jun 10 11:25:40.345 : sysmgr[78]: %OS-SYSMGR-5-NOTICE : Card is CO
DRP/0/4/CPU0:Jun 10 11:25:41.449 : init[65540]: %OS-INIT-7-INSTALL_READY : tota
DRP/0/4/CPU0:Jun 10 11:25:42.360 : dsc[151]: Memory Sanity Check Enabled
DRP/0/4/CPU0:Jun 10 11:25:44.790 : reddrv[297]: %PLATFORM-REDDRV-5-GO_BID : Car
DRP/0/4/CPU0:Jun 10 11:25:44.628 : syslog_dev[76]: reddrv[297]:

DRP/0/4/CPU0:Jun 10 11:25:44.631 : syslog_dev[76]: reddrv[297]: reddrv: BID - D.

DRP/0/4/CPU0:Jun 10 11:25:49.100 : reddrv[297]: %PLATFORM-REDDRV-5-GO_ACTIVE :
DRP/0/4/CPU0:Jun 10 11:25:49.099 : syslog_dev[76]: reddrv[297]:
```

```
DRP/0/4/CPU0:Jun 10 11:25:49.099 : syslog_dev[76]: reddrv[297]: reddrv: ACTIVE e

DRP/0/4/CPU0:Jun 10 11:25:49.554 : syslog_dev[76]: reddrv[297]: reddrv: transitn

DRP/0/4/CPU0:Jun 10 11:25:49.555 : syslog_dev[76]: reddrv[297]: Reddrv: msg_sen0

DRP/0/4/CPU0:Jun 10 11:26:03.403 : gsp[178]: cci_pdma_queue_cltn_find: returnin
DRP/0/4/CPU0:Jun 10 11:26:03.413 : gsp[178]: cci_pdma_queue_cltn_find: returnin
DRP/0/4/CPU0:Jun 10 11:26:03.414 : gsp[178]: cci_pdma_queue_cltn_find: returnin
DRP/0/4/CPU0:Jun 10 11:26:03.414 : gsp[178]: cci_pdma_queue_cltn_find: returnin
DRP/0/4/CPU0:Jun 10 11:26:03.416 : gsp[178]: cci_pdma_queue_cltn_find: returnin
DRP/0/4/CPU0:Jun 10 11:26:03.416 : gsp[178]: cci_pdma_queue_cltn_find: returnin
DRP/0/4/CPU0:Jun 10 11:26:11.438 : tty_session_startup[339]: %MGBL-TTY-7-SESSIO
DRP/0/4/CPU0:Jun 10 11:26:19.464 : ingressq_spiller[228]: cci_interrupt_source_
DRP/0/4/CPU0:Jun 10 11:27:34.271 : fab_svr[180]: cci_pdma_queue_cltn_find: retu
DRP/0/4/CPU0:Jun 10 11:27:34.273 : fab_svr[180]: cci_pdma_queue_cltn_find: retu
DRP/0/4/CPU0:Jun 10 11:27:34.273 : fab_svr[180]: cci_pdma_queue_cltn_find: retu
DRP/0/4/CPU0:Jun 10 11:27:42.764 : ntpd[207]: %ROUTING-NTPD-5-PEER_CLEAR : NTP
DRP/0/4/CPU0:Jun 10 11:28:09.784 : upgrade_daemon[344]: %PLATFORM-UPGRADE_FPD-4
DRP/0/4/CPU0:Jun 10 20:29:41.288 : cfgmgr-rp[131]: %MGBL-CONFIG-6-OIR_RESTORE :
DRP/0/4/CPU0:Jun 10 20:29:41.315 : ifmgr[186]: %PKT_INFRA-LINK-3-UPDOWN : Inter
DRP/0/4/CPU0:Jun 10 20:29:41.318 : ifmgr[186]: %PKT_INFRA-LINEPROTO-5-UPDOWN :
DRP/0/4/CPU0:Jun 10 20:29:41.322 : ifmgr[186]: %PKT_INFRA-LINK-3-UPDOWN : Inter
DRP/0/4/CPU0:Jun 10 20:29:41.346 : ifmgr[186]: %PKT_INFRA-LINEPROTO-5-UPDOWN :
DRP/0/4/CPU0:Jun 10 20:31:14.945 : ntpd[207]: %ROUTING-NTPD-5-PEER_CLEAR : NTP
DRP/0/4/CPU0:Jun 10 20:31:14.945 : ntpd[207]: %ROUTING-NTPD-5-SYNC_LOSS : Synch
DRP/0/4/CPU0:Jun 10 20:31:14.945 : ntpd[207]: %ROUTING-NTPD-5-SYNC_LOSS : Synch
DRP/0/4/CPU0:Jun 10 21:07:53.108 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:07:53.831 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:08:57.338 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:08:59.532 : ipsec_pp[370]: %SECURITY-IPP-3-ERR_GENERAL :
DRP/0/4/CPU0:Jun 10 21:09:02.595 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:10:05.382 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:10:05.617 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:11:13.092 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:11:13.264 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:12:13.803 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:12:14.087 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:12:59.508 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:13:01.213 : sbc[376]: %SERVICES-SBC_PROC-6-INFO : SBC_IN
DRP/0/4/CPU0:Jun 10 21:13:01.380 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:14:06.104 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:14:06.278 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:15:10.415 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:15:11.174 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:16:30.297 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jun 10 21:16:35.848 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
DRP/0/4/CPU0:Jun 10 21:34:13.005 : sbc[376]: %SERVICES-SBCSVI_BILLING-5-PATHSTA
DRP/0/4/CPU0:Jun 10 21:34:13.091 : sbc[376]: %SERVICES-SBCSVI_BILLING-5-PATHSTA
DRP/0/4/CPU0:Jun 10 21:34:13.351 : squid_sbcmpf[379]: %SERVICES-SBC_MPF-6-INFO
DRP/0/4/CPU0:Jun 10 21:34:13.966 : sbcsvi_ea[377]: %SERVICES-SBCSVI_EA-3-LINK_F
DRP/0/4/CPU0:Jun 10 21:58:04.777 : syslog_dev[76]: debug_d[143]: sysdb_find fai'

DRP/0/4/CPU0:Jun 10 21:58:04.892 : sysmgr[78]: debug_d(1) (jid 143) (pid 86082)d

DRP/0/4/CPU0:Jun 10 21:58:05.537 : syslog_dev[76]: debug_d[143]: sysdb_find fai'

DRP/0/4/CPU0:Jun 10 21:58:05.646 : sysmgr[78]: debug_d(1) (jid 143) (pid 147522d

DRP/0/4/CPU0:Jun 13 16:40:50.173 : exec[65690]: %SECURITY-login-6-AUTHEN_SUCCES
DRP/0/4/CPU0:Jun 13 16:41:45.619 : syslog_dev[76]: debug_d[143]: sysdb_find fai'

DRP/0/4/CPU0:Jun 13 16:41:45.745 : sysmgr[78]: debug_d(1) (jid 143) (pid 151618d
```

```
DRP/0/4/CPU0:Jun 13 16:41:46.114 : syslog_dev[76]: debug_d[143]: sysdb_find fai'

DRP/0/4/CPU0:Jun 13 16:41:46.254 : sysmgr[78]: debug_d(1) (jid 143) (pid 458818d

DRP/0/4/CPU0:Jun 13 16:41:51.266 : devc-conaux[54]: %MGBL-RS232-6-DCD_LOST : Lo
DRP/0/4/CPU0:Jun 13 16:42:01.265 : devc-conaux[54]: %MGBL-RS232-6-DCD_DISCOVERE
DRP/0/4/CPU0:Jun 17 13:01:10.557 : pfilter_ma[200]: Entering : timer_msg_hndlr
DRP/0/4/CPU0:Jun 17 13:01:10.559 : pfilter_ma[200]: Entering : acl_es_get_log_i
DRP/0/4/CPU0:Jun 17 13:01:10.559 : pfilter_ma[200]: In acl_es_get_log_info coun0
DRP/0/4/CPU0:Jun 17 13:02:10.555 : pfilter_ma[200]: Entering : timer_msg_hndlr
DRP/0/4/CPU0:Jun 17 13:02:10.555 : pfilter_ma[200]: Entering : acl_es_get_log_i
DRP/0/4/CPU0:Jun 17 13:02:10.555 : pfilter_ma[200]: In acl_es_get_log_info coun0
DRP/0/4/CPU0:Jun 17 13:03:10.555 : pfilter_ma[200]: Entering : timer_msg_hndlr
DRP/0/4/CPU0:Jun 17 13:03:10.555 : pfilter_ma[200]: Entering : acl_es_get_log_i
DRP/0/4/CPU0:Jun 17 13:03:10.555 : pfilter_ma[200]: In acl_es_get_log_info coun0
DRP/0/4/CPU0:Jun 17 13:04:10.555 : pfilter_ma[200]: Entering : timer_msg_hndlr
DRP/0/4/CPU0:Jun 17 13:04:10.555 : pfilter_ma[200]: Entering : acl_es_get_log_i
DRP/0/4/CPU0:Jun 17 13:04:10.555 : pfilter_ma[200]: In acl_es_get_log_info coun0
DRP/0/4/CPU0:Jul 12 16:12:05.932 : ifmgr[186]: %PKT_INFRA-LINK-3-UPDOWN : Inter
DRP/0/4/CPU0:Jul 12 16:12:05.932 : ifmgr[186]: %PKT_INFRA-LINEPROTO-5-UPDOWN :
DRP/0/4/CPU0:Jul 12 16:12:07.703 : ifmgr[186]: %PKT_INFRA-LINK-3-UPDOWN : Inter
DRP/0/4/CPU0:Jul 12 16:12:07.708 : ifmgr[186]: %PKT_INFRA-LINEPROTO-5-UPDOWN :
DRP/0/4/CPU0:Jul 28 10:21:49.239 : sbc[376]: %SERVICES-SBC_PROC-6-INFO : SBC_IN
DRP/0/4/CPU0:Jul 28 10:21:56.836 : squid_sbcmpf[379]: zmpf_heartbeat_work: Peer
DRP/0/4/CPU0:Jul 28 14:22:26.643 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_NOTIFICATIO
DRP/0/4/CPU0:Jul 28 14:22:31.778 : sysmgr[78]: %OS-SYSMGR-7-INSTALL_FINISHED :
```

Related Commands

Command	Description
show reboot graceful, on page 467	Displays reboot information for the last graceful reboot for a node.
show reboot history, on page 468	Displays reboot information for the last graceful reboot.
show reboot last, on page 470	Displays the latest crash information.
show reboot pcds, on page 473	Displays Persistent Critical Data Store critical information for the last ungraceful reboot.

show reboot graceful

To display reboot information for the last graceful reboot for a node, use the **show reboot graceful** command in EXEC mode.

show reboot graceful location *node-id*

Syntax Description

location	Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
system	read

Examples

The following sample output is from the **show reboot graceful** command:

```
RP/0/RP0/CPU0:router# show reboot graceful location 0/1/CPU0

Reboot Time  : Thu Oct 11 19:15:55 2007
Reboot Cause : 0x4f
Reboot Reason: Cause: HBAgent reloading node on receiving reload notification  0
Trace log    :

[0x46ad85b7b5] Map ingressq PCI base address.ingressq_phy_base = 0xa0000000, in0
[0x46ad8af9ba] Perform Node isolation from Fabric. ingressq_phy_base = 0xa000008
[0x46ad8afe88] Complete Kernel dumper platform task without dumping. rc: 0
```

Related Commands

Command	Description
show reboot first, on page 464	Displays reboot information for a node first.
show reboot history, on page 468	Displays reboot information for the last graceful reboot.
show reboot last, on page 470	Displays the latest crash information.
show reboot pcds, on page 473	Displays Persistent Critical Data Store critical information for the last ungraceful reboot.

show reboot history

To display reboot information for the last graceful reboot, use the show reboot history command in EXEC mode.

show reboot history [**reverse**] **location** *node-id*

Syntax Description

reverse	(Optional) Displays the reverse in chronological order.
location	Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

The reboot history shows all reboot causes that is stored for the previous node resets.

Task ID

Task ID	Operations
system	read

Examples

The following sample output is from the **show reboot history** command:

```
RP/0/RP0/CPU0:router# show reboot history location 0/1/CPU0

No  Time                        Cause Code  Reason
--------------------------------------------------------------------------------
01  Mon Jul 30 19:27:05 2007  0x2000004f  Cause: MBI-HELLO reloading node on rec
                                          eiving reload notification
                                            Process: mbi-hello

                                               Traceback: fc15b1a0 fc15b290 482
                                          0020c fc1d5fb0 0 0
02  Thu Aug 16 16:32:35 2007  0x21000106  Cause: All fabric links down on Fabric
                                          q
                                            Process: fabricq_mgr

                                               Traceback: fc15b1a0 fc15b290 fc9
                                          9ded4 fc99ae00 fc99affc fc99affc
03  Thu Aug 16 17:05:20 2007  0x2000004f  Cause: MBI-HELLO reloading node on rec
                                          eiving reload notification
                                            Process: mbi-hello

                                               Traceback: fc15b1a0 fc15b290 482
                                          0020c fc1d5fb0 0 0
04  Mon Sep 10 21:01:34 2007  0x21000106  Cause: All fabric links down on Fabric
                                          q
```

```
                                          Process: fabricq_mgr

                                               Traceback: fc15b1a0 fc15b290 fc9
                                          a3f00 fc9a0e10 fc9a100c fc9a100c
05  Mon Sep 10 21:36:10 2007  0x2000004f  Cause: MBI-HELLO reloading node on rec
                                          eiving reload notification
                                          Process: mbi-hello

                                               Traceback: fc1601a0 fc160290 482
                                          0020c fc1dcfb0 0 0
06  Wed Oct 10 18:28:53 2007  0x21000106  Cause: All fabric links down on Fabric
                                          q
                                          Process: fabricq_mgr

                                               Traceback: fc1601a0 fc160290 fc9
                                          d9f48 fc9d6e58 fc9d7054 fc9d7054
07  Wed Oct 10 19:04:02 2007  0x2000004f  Cause: MBI-HELLO reloading node on rec
                                          eiving reload notification
                                          Process: mbi-hello

                                               Traceback: fc160c38 fc160d34 482
                                          0020c fc1ddfb0 0 0
08  Wed Oct 10 20:19:39 2007  0x0000004f  Cause: HBAgent reloading node on recei
                                          ving reload notification
                                          Process: hbagent

                                               Traceback: fc160c38 fc160d34 482
                                          00228 fc1ddfb0 0 0
09  Wed Oct 10 20:45:53 2007  0x0000004f  Cause: HBAgent reloading node on recei
                                          ving reload notification
                                          Process: hbagent

                                               Traceback: fc160c38 fc160d34 482
                                          00228 fc1ddfb0 0 0
10  Thu Oct 11 19:15:55 2007  0x0000004f  Cause: HBAgent reloading node on recei
                                          ving reload notification
                                          Process: hbagent

                                               Traceback: fc160c38 fc160d34 482
                                          00228 fc1ddfb0 0 0
```

Related Commands

Command	Description
show reboot first, on page 464	Displays reboot information for a node first.
show reboot graceful, on page 467	Displays reboot information for the last graceful reboot for a node.
show reboot last, on page 470	Displays the latest crash information.
show reboot pcds, on page 473	Displays Persistent Critical Data Store critical information for the last ungraceful reboot.

show reboot last

To display the latest crash information, use the **show reboot last** command in EXEC mode.

show reboot last {**crashinfo** | **syslog** | **trace**} **location** *node-id*

Syntax Description

crashinfo	Displays crash information.
syslog	Displays information for the system logs.
trace	Displays the log for the reboot trace.
location	Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
system	read

Examples

The following sample output is from the **show reboot last** command:

```
RP/0/RP0/CPU0:router# show reboot last crashinfo location 0/1/CPU0

Crashinfo Timestamp: Wed Oct 10 19:04:02 2007


20071010 10:04:03

Crash Reason: Cause code 0x2000004f Cause: MBI-HELLO reloading node on receivin0

Exception at 0xfc160f60 signal 5 c=1 f=3

Active process(s):
        pkg/bin/mbi-hello Thread ID 2 on cpu 0

       REGISTER INFO
        r0        r1        r2        r3
  R0   2000004f  4815da60  4820ea44  00000138
        r4        r5        r6        r7
  R4   4815da38  00000002  4815da48  00000001
        r8        r9       r10       r11
```

```
R8   80000000  60277440  4815da28  00000600
     r12       r13       r14       r15
R12  24000094  4820ea00  00000000  00000000
     r16       r17       r18       r19
R16  00000000  00000000  00000000  00000000
     r20       r21       r22       r23
R20  00000000  00000000  00000000  00000000
     r24       r25       r26       r27
R24  00000000  00000000  00000000  482053cc
     r28       r29       r30       r31
R28  4815df7c  4815db68  0000004f  00000009
     cnt        lr       msr        pc
R32  fc1e800c  fc160f38  0002d932  fc160f60
     cnd       xer
R36  48000094  2000000f

             SUPERVISOR REGISTERS


           Memory Management Registers

           Instruction BAT Registers
            Index #               Value
           IBAT0U #             0x1ffe
           IBAT0L #               0x12
           IBAT1U #                  0
           IBAT1L #                  0
           IBAT2U #         0x30000ffe
           IBAT2L #         0xf0000032
           IBAT3U #                  0
           IBAT3L #                  0

           Data BAT Registers
            Index #                Value
           DBAT0U #             0x1ffe
           DBAT0L #               0x12
           DBAT1U #                  0
           DBAT1L #         0x10000012
           DBAT2U #         0x30000ffe
           DBAT2L #         0xf000006a
           DBAT3U #                  0
           DBAT3L #         0xf0000022

           Segment Registers
            Index #             SR-Value
                0 #                   0
                1 #                   0
                2 #                   0
                3 #                   0
                4 #                   0
                5 #                   0
                6 #                   0
                7 #                   0
                8 #                   0
                9 #                   0
               10 #                   0
               11 #                   0
               12 #                   0
               13 #                   0
               14 #                   0
               15 #                   0
```

```
              Exception Handling Registers
       Data Addr Reg #                DSISR
         0x60277440 #          0x42000000
     SPRG0 #       SPRG1 #       SPRG2 #       SPRG3
0x4815db68 #      0x4f #       0x9 #         0
   SaveNRestore SRR0 #     SaveNRestore SRR1
        0xfc160f5c #             0x2d932


              Miscellaneous Registers
    Processor Id Reg #                   0
                HID0 #          0x8410c0bc
                HID1 #          0x90018c80

              MSSCR0 #             0x88000
              MSSSR0 #                   0

 STACK TRACE
#0 0xfc160f38
              0

 STACK TRACE
#0 0xfc160290
#1 0xfc99ded4
#2 0xfc99ae00
#3 0xfc99affc
#4 0xfc99affc
#5 0xfc99bccc
#6 0xfc646548
#7 0xfc63f074
#8 0xfc16a404
#9 0xfc1688d8
#10 0xfc63f3bc
#11 0xfc1d5fb0
```

Related Commands

Command	Description
show reboot first, on page 464	Displays reboot information for a node first.
show reboot graceful, on page 467	Displays reboot information for the last graceful reboot for a node.
show reboot history, on page 468	Displays reboot information for the last graceful reboot.
show reboot pcds, on page 473	Displays Persistent Critical Data Store critical information for the last ungraceful reboot.

show reboot pcds

To display Persistent Critical Data Store (PCDS) critical information for the last ungraceful reboot, use the **show reboot pcds** command in EXEC mode.

show reboot pcds location *node-id*

Syntax Description

location	Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
system	read

Examples

The following example shows some sample output from the **show reboot pcds** command:

```
RP/0/RP0/CPU0:router# show reboot pcds location 0/1/CPU0

PCDS Timestamp: Wed Oct 10 19:04:02 2007
PCDS size: 131072 (bytes)
PCDS Data:

000000  03014352 49544d4f 4e000000 00000000 ..CRITMON.......
000010  02000000 00000008 00000000 30d00000 ............0...
000020  00001a90 00000000 00000000 00000000 ................
000030  0b0f0b0f 13911300 b8000013 b8000017 ................
000040  470ca354 11000300 00001c41 00000000 G..T.......A....
000050  00000974 00000000 30464fe4 ffffff00 ...t....0FO.....
000060  b8000003 b8000007 b8000003 b8000007 ................
000070  0b0f0b0f 13911300 b8000013 b8000017 ................
000080  470ca354 01000300 00001c44 00000000 G..T.......D....
000090  00000975 00000000 30464fe4 ffffff00 ...u....0FO.....
0000a0  b8000003 b8000007 b8000003 b8000007 ................
0000b0  0b0f0b0f 13911300 b8000013 b8000017 ................
0000c0  470ca355 11000300 00001c47 00000000 G..U.......G....
0000d0  00000976 00000000 30464fe4 ffffff00 ...v....0FO.....
0000e0  b8000003 b8000007 b8000003 b8000007 ................
0000f0  0b0f0b0f 13911300 b8000013 b8000017 ................
000100  470ca355 01000300 00001c4a 00000000 G..U.......J....
000110  00000977 00000000 30464fe4 ffffff00 ...w....0FO.....
000120  b8000003 b8000007 b8000003 b8000007 ................
```

```
000130  0b0f0b0f 13911300 b8000013 b8000017 ................
000140  470ca356 11000300 00001c4d 00000000 G..V.......M....
000150  00000978 00000000 30464fe4 ffffff00 ...x....0FO.....
000160  b8000003 b8000007 b8000003 b80000ff ................
000170  0bff0bff 13911300 b8000013 b8000017 ................
000180  470ca357 01000300 00001c50 00000000 G..W.......P....
000190  00000979 00000000 30464fe4 ffffff00 ...y....0FO.....
0001a0  b8000003 b8000007 b80000ff b8000007 ................
0001b0  ff0fff0f ff911300 b8000013 b8000017 ................
0001c0  470ca357 11000300 00001c53 00000000 G..W.......S....
0001d0  0000097a 00000000 30464fe4 ffffff00 ...z....0FO.....
0001e0  b8000003 b8000007 b80000ff b8000007 ................
0001f0  ff0fff0f ff911300 b8000013 b80000ff ................
000200  470ca358 01000300 00001c56 00000000 G..X.......V....
000210  0000097b 00000000 30464fe4 ffffff00 ...{....0FO.....
000220  b8000003 b8000007 b80000ff b8000007 ................
000230  ff0fff0f ff911300 b8000013 b80000ff ................
000240  470ca358 11000300 00001c59 00000000 G..X.......Y....
000250  0000097c 00000000 30464fe4 ffffff00 ...|....0FO.....
000260  b8000003 b8000007 b80000ff b8000007 ................
000270  ff0fff0f ff911300 b8000013 b80000ff ................
000280  470ca359 01000300 00001c5c 00000000 G..Y.......\....
000290  0000097d 00000000 30464fe4 ffffff00 ...}....0FO.....
0002a0  b8000003 b8000007 b8000003 b8000007 ................
0002b0  0b0f0b0f 13911300 b8000013 b8000017 ................
0002c0  470ca35a 11000300 00001c5f 00000000 G..Z......._....
0002d0  0000097e 00000000 30464fe4 ffffff00 ...~....0FO.....
0002e0  b8000003 b8000007 b8000003 b8000007 ................
0002f0  0b0f0b0f 13911300 b8000013 b8000017 ................
000300  470ca35a 01000300 00001c62 00000000 G..Z.......b....
000310  0000097f 00000000 30464fe4 ffffff00 ........0FO.....
000320  b8000003 b8000007 b8000003 b8000007 ................
000330  0b0f0b0f 13911300 b8000013 b8000017 ................
000340  470ca35b 11000300 00001c65 00000000 G..[.......e....
000350  00000980 00000000 30464fe4 ffffff00 ........0FO.....
000360  b8000003 b8000007 b8000003 b8000007 ................
000370  0b0fff0f 13911300 b8000013 b8000017 ................
000380  470ca35b 01000300 00001c68 00000000 G..[.......h....
000390  00000981 00000000 30464fe4 ffffff00 ........0FO.....
0003a0  b80000ff b80000ff b8000003 b80000ff ................
0003b0  0bff0bff 13911300 b80000ff b8000017 ................
0003c0  470ca35c 11000300 00001c6b 00000000 G..\.......k....
0003d0  00000982 00000000 30464fe4 ffffff00 ........0FO.....
0003e0  b8000003 b8000007 b8000003 b8000007 ................
0003f0  0b0f0b0f 13911300 b8000013 b8000017 ................
000400  470ca35d 01000300 00001c6e 00000000 G..].......n....
000410  00000983 00000000 30464fe4 ffffff00 ........0FO.....
000420  b8000003 b8000007 b8000003 b8000007 ................
000430  0b0f0b0f 13911300 b8000013 b8000017 ................
000440  470ca35d 11000300 00001c71 00000000 G..].......q....
000450  00000984 00000000 30464fe4 ffffff00 ........0FO.....
000460  b8000003 b8000007 b8000003 b8000007 ................
000470  0b0f0b0f 13911300 b8000013 b8000017 ................
000480  470ca35e 01000300 00001c74 00000000 G..^.......t....
000490  00000985 00000000 30464fe4 ffffff00 ........0FO.....
0004a0  b8000003 b8000007 b8000003 b8000007 ................
0004b0  0b0f0b0f 13911300 b8000013 b8000017 ................
0004c0  470ca35e 11000300 00001c77 00000000 G..^.......w....
0004d0  00000986 00000000 30464fe4 ffffff00 ........0FO.....
0004e0  b8000003 b8000007 b8000003 b8000007 ................
0004f0  0b0f0b0f 13911300 b8000013 b8000017 ................
000500  470ca35f 01000300 00001c7a 00000000 G.._.......z....
000510  00000987 00000000 30464fe4 ffffff00 ........0FO.....
000520  b8000003 b8000007 b8000003 b8000007 ................
```

```
000530  0b0f0b0f 13911300 b8000013 b8000017 ................
000540  470ca360 11000300 00001c7d 00000000 G..`.......}....
000550  00000988 00000000 30464fe4 ffffff00 ........0FO.....
000560  b8000003 b8000007 b8000003 b8000007 ................
000570  0b0f0b0f 13911300 b8000013 b8000017 ................
000580  470ca360 01000300 00001c80 00000000 G..`............
000590  00000989 00000000 30464fe4 ffffff00 ........0FO.....
0005a0  b8000003 b8000007 b8000003 b8000007 ................
0005b0  0b0f0b0f 13911300 b8000013 b8000017 ................
0005c0  470ca361 11000300 00001c83 00000000 G..a............
0005d0  0000098a 00000000 30464fe4 ffffff00 ........0FO.....
0005e0  b8000003 b8000007 b8000003 b8000007 ................
0005f0  0b0f0b0f 13911300 b8000013 b8000017 ................
000600  470ca361 01000300 00001c86 00000000 G..a............
000610  0000098b 00000000 30464fe4 ffffff00 ........0FO.....
000620  b8000003 b8000007 b8000003 b8000007 ................
000630  0b0f0b0f 13911300 b8000013 b8000017 ................
000640  470ca362 11000300 00001c89 00000000 G..b............
000650  0000098c 00000000 30464fe4 ffffff00 ........0FO.....
000660  b8000003 b8000007 b8000003 b8000007 ................
000670  0b0f0b0f 13911300 b8000013 b8000017 ................
000680  470ca363 01000300 00001c8c 00000000 G..c............
000690  0000098d 00000000 30464fe4 ffffff00 ........0FO.....
0006a0  b8000003 b8000007 b8000003 b8000007 ................
0006b0  0b0f0b0f 13911300 b8000013 b8000017 ................
0006c0  470ca363 11000300 00001c8f 00000000 G..c............
0006d0  0000098e 00000000 30464fe4 ffffff00 ........0FO.....
```

Related Commands

Command	Description
show reboot first, on page 464	Displays reboot information for a node first.
show reboot graceful, on page 467	Displays reboot information for the last graceful reboot for a node.
show reboot history, on page 468	Displays reboot information for the last graceful reboot.
show reboot last, on page 470	Displays the latest crash information.

show watchdog

To display information about the memory state or threshold memory, use the **show watchdog** command in EXEC mode.

show watchdog [{**memory-state** | **threshold memory configured**}] [**location** *node-id*]

Syntax Description

memory-state	(Optional) Displays the memory state.
threshold memory	(Optional) Displays the memory thresholds.
configured	Displays the configured memory thresholds.
location *node-id*	(Optional) Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation. The **location** *node-id* keyword and argument must be specified if the **threshold memory** keywords are selected.

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 2.0	This command was introduced.

Usage Guidelines

Use the **show watchdog** command to display information about the memory states or thresholds for a specified location. You can display the default or configured memory thresholds.

Task ID

Task ID	Operations
basic-services	read

Examples

The following sample output is from the **show watchdog** command:

```
RP/0/RP0/CPU0:router# show watchdog memory-state

Wed Nov  4 00:18:59.575 UTC
Memory information:
    Physical Memory: 4096     MB
    Free Memory:     2623.671 MB
```

```
Memory State:         Normal
```

Related Commands

Command	Description
watchdog threshold memory	Configures the value of memory available for each alarm threshold.