Advanced System Command Reference for Cisco ASR 9000 Series Routers

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CONTENTS

Preface

From Release 6.1.2 onwards, Cisco introduces support for the 64-bit Linux-based IOS XR operating system. Extensive feature parity is maintained between the 32-bit and 64-bit environments. Unless explicitly marked otherwise, the contents of this document are applicable for both the environments. For more details on Cisco IOS XR 64 bit, refer to the Release Notes for Cisco ASR 9000 Series Routers, Release 6.1.2 document.

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

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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.

clear controller fabric

To clear the fabric ASIC statistics for the specified fabric plane or all planes, use the **clear controller fabric** command in EXEC mode or Admin EXEC mode.

clear controller fabric {**fia** | **crossbar-counters**} **location** *node-id*

Syntax Description

fia	clears fabric counter details.
crossbar-counters	clears crossbar counters for a slot.
location *node-id*	Node ID.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

Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	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 use the **clear controller fabric** command:

```
RP/0/RSP0/CPU0:router# clear controllers fabric fia location cpu/1/0
```

```
RP/0/RSP0/CPU0:router# clear controller fabric crossbar-counters spine 0
```

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 3.5.0	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/RSP0/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 2: 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.

show controller fabric

To display the fabric ASIC statistics for the specified fabric plane or for all planes, use the **show controller fabric** command in EXEC mode or Admin EXEC mode.

Note ASIC-defined protocol is used to train an Arbiter link. If this procedure fails, the Arbiter link is declared as down.

show controller fabric {**arbiter** | **fia link-status** | **crossbar**} {**readreg** *asic-offset* **instance** *module-instance* | **serdes location** *node-id* **instance** *module-instance* | **configstatus location** *node-id* **instance** *module-instance*}

Syntax Description

arbiter	Displays arbitration ASIC show screens.
crossbar	Displays crossbar ASIC show screens.
fia link-status	Displays the fabric interface asic (fia) link status information.
readreg	Displays read fabric ASIC register.
configstatus	Displays fabric ASIC configuration status.
serdes	Displays fabric serializer-deserializer interface status.
asic-offset	Asic offset ; range is 0 to 4294967295.
instance *module-instance*	Module instance; range is from 0 to 4.
location *node-i*	Node ID. The node-id argument is entered in the rack/slot/module notation.

Command Default

No default behavior or values.

Command Modes

EXEC mode

Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

In the **show controllers fabric fia link-status** command output the **arb link-1** indicates the RP to RP communication status. Therefore, the status of **arb link-1** from RSP or RP can be ignored as this will not have any impact on the system behaviour.

Task ID

Task ID	Operations
drivers	read

Examples

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

```
RP/0/RSP0/CPU0:router# show controllers fabric crossbar serdes instance 1 location 0/1/cpu0


  Location: 0/RSP0/CPU0 (physical slot 4)
  Asic Instance: 1
  Asic slot: 1

inst_num       12
usr_data_p     0x50064ce8
state          unused
encoding       EFCP
mode           normal

GLOBAL_CONTROL_0               0006
  ENABLE_NE_ENCODING           enabled
LOOPBACK_CONTROL               0000
  NEAR_LOOPBACK                disabled
RX_CHAN_CONTROL_0              0850
  SERDES_RATE                  20Gbps
  SERDES_ENABLE                enabled
  PARALLEL_BUS_ENABLE          enabled
  SW_RX_RESET                  disabled
RX_CHAN_FEATURE_CONTROL        0528
  ENABLE_SHORT_QUEUE           disabled
  ENABLE_START_TO_RATE         enabled
RX_SOFT_SYNC_CNTL              0600
  RX_SOFT_SYNC_CODE_BYPASS_EN  disabled

CHAN_STATUS                    0003
  RX_SERIAL_CHANNEL_OK         1
  SERIAL_CHANNEL_OK            1
  NE_SYNC_STATUS               00

SERIAL LINK                    0  1  2  3  4  5  6  7
                               -- -- -- -- -- -- -- --
SERDES_RX_PLL_LOCKED           1  1  1  1  1  1  1  1
PRBS_FAIL                      0  0  0  0  0  0  0  0

CHAN_INT_STATUS_0              0000
CHAN_INT_MASK_0                01ff
RX_CHANNEL_REALIGN_STATUS      0
RX_CHANNEL_REALIGN_MASK        1

SERIAL LINK                    0  1  2  3  4  5  6  7
                               -- -- -- -- -- -- -- --
LINK_INTR_STATUS               0  0  0  0  0  0  0  0
LINK_INTR_MASK                 1  1  1  1  1  1  1  1
SOURCE_INTR_MASK               00 00 00 00 00 00 00 00

inst_num     12
usr_data_p   0x50064ce8
state        unused
```

```
stats_p      0x500729c8
intr_stats_p 0x50072a90

inst_num     12
usr_data_p   0x50064cfc
state        unused

auto_sync        supported
reg_read_fn      0x40012174
reg_write_fn     0x40011c60
process_intr_fn  0x40043910
dev_id           70
ser_drv_cntl_a   0x9bffd670


RP/0/RSP0/CPU0:router#  show controllers fabric crossbar link-status instance 0 spine 0

PORT    Remote Slot  Remote Inst    Logical ID  Status
=====================================================
05        04               00             1        Up
10        04               00             0        Up
15        11               00             0        Up
17        11               00             1        Up
18        01               00             0        Up
19        00               00             0        Up
20        06               00             1        Up
24        06               00             0        Up
```

Examples

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

```
RP/0/RSP0/CPU0:router# show controllers fabric crossbar serdes instance 1 location 0/1/cpu0


  Location: 0/RSP0/CPU0 (physical slot 4)
  Asic Instance: 1
  Asic slot: 1

inst_num       12
usr_data_p     0x50064ce8
state          unused
encoding       EFCP
mode           normal

GLOBAL_CONTROL_0                0006
  ENABLE_NE_ENCODING            enabled
LOOPBACK_CONTROL                0000
  NEAR_LOOPBACK                 disabled
RX_CHAN_CONTROL_0               0850
  SERDES_RATE                   20Gbps
  SERDES_ENABLE                 enabled
  PARALLEL_BUS_ENABLE           enabled
  SW_RX_RESET                   disabled
RX_CHAN_FEATURE_CONTROL         0528
  ENABLE_SHORT_QUEUE            disabled
  ENABLE_START_TO_RATE          enabled
RX_SOFT_SYNC_CNTL               0600
  RX_SOFT_SYNC_CODE_BYPASS_EN   disabled
```

```
CHAN_STATUS                     0003
  RX_SERIAL_CHANNEL_OK          1
  SERIAL_CHANNEL_OK             1
  NE_SYNC_STATUS                00

SERIAL LINK                     0  1  2  3  4  5  6  7
                               -- -- -- -- -- -- -- --
SERDES_RX_PLL_LOCKED            1  1  1  1  1  1  1  1
PRBS_FAIL                       0  0  0  0  0  0  0  0

CHAN_INT_STATUS_0               0000
CHAN_INT_MASK_0                 01ff
RX_CHANNEL_REALIGN_STATUS       0
RX_CHANNEL_REALIGN_MASK         1

SERIAL LINK                     0  1  2  3  4  5  6  7
                               -- -- -- -- -- -- -- --
LINK_INTR_STATUS                0  0  0  0  0  0  0  0
LINK_INTR_MASK                  1  1  1  1  1  1  1  1
SOURCE_INTR_MASK               00 00 00 00 00 00 00 00

inst_num     12
usr_data_p   0x50064ce8
state        unused
stats_p      0x500729c8
intr_stats_p 0x50072a90

inst_num     12
usr_data_p   0x50064cfc
state        unused

auto_sync        supported
reg_read_fn      0x40012174
reg_write_fn     0x40011c60
process_intr_fn  0x40043910
dev_id           70
ser_drv_cntl_a   0x9bffd670
```

```
RP/0/RSP0/CPU0:router#  show controllers fabric fia link-status location 0/RP0/CPU0
********** FIA-0 **********
Category: link-0
                                spaui link-0                      Up
                                spaui link-1                      Up
                                 arb  link-0                      Up
                                 xbar link-1                      Up
                                 xbar link-3                      Up
                                 arb  link-1                    Down
```

show controllers np counters

To display a network processor's counter statistics, use the **show controllers np counters** command in EXEC mode.

show controllers np counters { all | np*n* **}**[**location** *node-id*] [**file** *send-to*]

Syntax Description

all	Specifies all network processor (NP) instances.
np*n*	Specifies NP counter instance. Replace the argument *n* with the NP instance number.
location *node-id*	(Optional) Specifies a fully-qualified line card location. The *node-id* argument is entered in the *rack/slot/module* notation.
file *send-to*	(Optional) Specifies that the command output is saved in a specified file. These are the valid options for the *send-to* argument : • *filename* • bootflash: • disk0: • disk0a: • disk1: • disk1a: • ftp: • harddisk: • harddiska: • harddiskb: • lcdisk0: • lcdisk0a: • nvram: • rcp: • tftp:

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

Use the **show controller np ports all location** *node-id* command to check NP-to-interface mapping.

The output of the **show controllers np counters** command displays the names of internal NP counters. These names appear in the format <stage>_<direction>_<action>_CNT. For example, PARSE_INGRESS_DROP_CNT, PARSE_EGRESS_PUNT_CNT and RESOLVE_EGRESS_DROP_CNT.

To view a complete list of NP counters, use the **show controllers np description** command in EXEC mode.

Task ID

Task ID	Operation
interface	read
drivers	read

This example shows statistics for the NP counter instance 1 (np1) at the specified location:

```
RP/0/RSP0/CPU0:router# show controllers np counters np1 location 0/7/cpu0

                              Node: 0/7/CPU0:
----------------------------------------------------------------

Show global stats counters for NP1, revision v3

Read 30 non-zero NP counters:
Offset  Counter                                         FrameValue   Rate (pps)
--------------------------------------------------------------------------------
  22  PARSE_ENET_RECEIVE_CNT                               51047           1
  23  PARSE_FABRIC_RECEIVE_CNT                             35826           0
  30  MODIFY_ENET_TRANSMIT_CNT                             36677           0
  31  PARSE_INGRESS_DROP_CNT                                   1           0
  34  RESOLVE_EGRESS_DROP_CNT                                628           0
  40  PARSE_INGRESS_PUNT_CNT                                3015           0
  41  PARSE_EGRESS_PUNT_CNT                                  222           0
```

show controllers plim asic SPAQFPBridgeCtrl

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

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

Syntax Description

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

Command Default

No default behavior or values

Command Modes

EXEC 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
root-system	read

Examples

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

```
RP/0/RP00/CPU0router# show controllers plim asic SPAQFPBridgeCtr
l
```

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/RSP0/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 15	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/RSP0/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 13	Display ACL class group ID which is used to dump TCAM entries.

show controllers pse qfp statistics

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

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

Syntax Description

drop	(Optional) Displays the global drop statistics for the PSE QFP device. **Note** Follow the **drop** keyword with the **location** *node-id* keyword and argument to restrict the command to a specific node.
summary	(Optional) Displays the global statistics summary for the PSE QFP device. **Note** Follow the **summary** keyword with the **location** *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.

Command Default

None.

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
cisco-support	read

Examples

This command shows how to display PSE QFP drop statistics of node location 0/4/CPU0:

```
RP/0/RSP0/CPU0:router# show controllers pse qfp statistics drop location 0/4/CPU0

Global Drop Statistics for QFP 0
-----------------------------------------------------------------
Global Drop Stats                          Packets         Octets
-----------------------------------------------------------------
  AttnInvalidSpid                                0              0
  BadAdj                                         0              0
```

```
 BadBhdr                                0                0
 BadDistFifo                            0                0
 BadIpChecksum                          0                0
 BadLen                                 0                0
 BadPpindex                             0                0
 BadUidbIdx                             0                0
 BadUidbSubIdx                          0                0
 BqsOor                                 0                0
 ChoiceOce                              0                0
 Disabled                               0                0
 Discard                                0                0
 EmptyMcReplicationTreeNode             0                0
 Erspan                                 0                0
 EsfDrlDrop                             0                0
 EsfL4rBadConfig                        0                0
 EsfL4rTransUnavail                     0                0
 EsfPbhkBadConfig                       0                0
 EsfPbhkPortNotfound                    0                0
 EsfPbhkPortRemoved                     0                0
 EsfPbhkPortUnavail                     0                0
 EsfPbhkUnalloc                         0                0
 EsfTcDrop                              0                0
 EssBadSessUidb                         0                0
 EssInjectBadHdr                        0                0
 EssInvSwitchMode                       0                0
 EssIpsubClassifierDrop                 0                0
 EssIpsubDrop                           0                0
 EssIpsubFsolDrop                       0                0
 EssIpsubKaDrop                         0                0
 EssL2HdrTooBig                         0                0
 EssNoEncapInfo                         0                0
 EssPiInvSubtype                        0                0
 EssPiStateErr                          0                0
 EssPktsbMissed                         0                0
 EssUnboundSession                      0                0
 EssUnprovSession                       0                0
 EssUnsupPktType                        0                0
 ExtDropPath                            0                0
 FabUnsupportedLinktype                 0                0
 FirewallBackpressure                   0                0
 FirewallInvalidZone                    0                0
 FirewallL4                             0                0
 FirewallL4Insp                         0                0
 FirewallL7                             0                0
 FirewallNoForwarding                   0                0
 FirewallNoNewSessions                  0                0
 FirewallNonsession                     0                0
 FirewallNotFromInit                    0                0
 FirewallNotInitiator                   0                0
 FirewallPolicy                         0                0
 ForUs                                  0                0
 FragTailDrop                           0                0
 FrfabWredDrop                          0                0
 FrrOceInvalidState                     0                0
 FrrOceNoBackup                         0                0
 GenPktReplication                      0                0
 GleanAdjUnsupportLinktype              0                0
 GreBadOptions                          0                0
Icmp                                   0                0
 IllegalObj                             0                0
 InjectErr                              0                0
 InternalCtl                            0                0
 InternalIntfErr                        0                0
 InvalidEncap                           0                0
```

```
InvalidPitInject                          0               0
InvCommonPreamble                         0               0
InvHdrErr                                 0               0
InvL2Hdr                                 22             289
InvPppCpPkt                               0               0
InvSpaHdr                                 0               0
IpAclErr                                  0               0
IpBadOptions                              0               0
IpFormatErr                               0               0
IpFragErr                                 0               0
Iphc                                      0               0
IpsecDenyDrop                             0               0
IpsecIkeIndicate                          0               0
IpsecInput                                0               0
IpsecInvalidSa                            0               0
IpsecOutput                               0               0
IpsecTailDrop                             0               0
IpsecTedIndicate                          0               0
IpSiaHdrErr                               0               0
IpSiaHopLimitExceeded                     0               0
IpSiaProcessingErr                        0               0
IpTtlExceeded                       2198127       174323665
Ipv4Acl                                   0               0
Ipv4AclLookupMiss                         0               0
Ipv4AdjDrop                               0               0
Ipv4Fpm                                   0               0
Ipv4Martian                           29579         1894329
Ipv4mcExtraReplicae                       0               0
Ipv4mcInvalidReplicaRecord                0               0
Ipv4mcInvalidReplicaRecordEncap           0               0
Ipv4mcNoRoute                             0               0
Ipv4mcRpfFailed                           0               0
Ipv4mcTtlThresholdChkFailed               0               0
Ipv4Mtr                                   0               0
Ipv4NoAdj                                 0               0
Ipv4NoRoute                               0               0
Ipv4Null0                                 0               0
Ipv4Pbr                                   0               0
Ipv4PopPipePhpTtlExpire                   0               0
Ipv4PopPipeUhpTtlExpire                   0               0
Ipv4PopUnfPhpTtlExpire                    0               0
Ipv4PopUnfUhpTtlExpire                    0               0
Ipv4RoutingErr                            0               0
Ipv4Unclassified                          0               0
Ipv4UrpfNullPathList                      0               0
Ipv6Acl                                   0               0
Ipv6AclLookupMiss                         0               0
Ipv6AdjDrop                               0               0
Ipv6Badhop                                0               0
Ipv6Badsource                             0               0
Ipv6Formaterr                             0               0
Ipv6mcExtraReplica                        0               0
Ipv6mcInvalidReplicaRecord                0               0
Ipv6mcInvalidReplicaRecordEncap           0               0
Ipv6mcNoRoute                             0               0
Ipv6mcRpfFailed                           0               0
Ipv6mcTtlThresholdChkFailed               0               0
Ipv6NoAdj                                 0               0
Ipv6NoRoute                               0               0
Ipv6Null0                                 0               0
Ipv6RoutingErr                            0               0
Ipv6Toobigpacket                          0               0
Ipv6Truncatedpkts                         0               0
Ipv6Unclassified                          0               0
```

```
IrbUnsupported                          0               0
L2tpBadUdpChksum                        0               0
L2tpCxtMissed                           0               0
L2tpExceedTxMtu                         0               0
L2tpNoSession                           0               0
L2tpOooRxPkt                            0               0
L2tpPktBadLen                           0               0
L2tpPktInvHdr                           0               0
L2tpPktsbMissed                         0               0
L2tpSecurityCheck                       0               0
L2tpTxSeqMissed                         0               0
L2tpUnconfigured                        0               0
L2v4mcInvalidReplicaRecord              0               0
L2v4mcNoRoute                           0               0
L2v6mcInvalidReplicaRecord              0               0
L2v6mcNoRoute                           0               0
LabelPopUnsupportLinktype               0               0
Layer2NoRoute                           0               0
Layer2Switching                         0               0
LookupOceShouldDrop                     0               0
LookupOceUnsupportLinktype              0               0
MacNotifyCreateFailed                   0               0
MacNotifyUpdateFailed                   0               0
MaxTu                                   0               0
MinTu                                   0               0
Mlp                                     0               0
MpassErr                                0               0
MpassInvalidFsVector                    0               0
Mpls                                    0               0
MplsAdjDrop                             0               0
MplsCscDrop                             0               0
MplsEosInvalid                          0               0
MplsFragReq                             0               0
MplsIcmpInvalidHdr                      0               0
MplsLabelDrop                           0               0
MplsLabelOceInvalidLabel                0               0
MplsLabelOcePtrNull                     0               0
MplsLabelOceUnsupportLinktype           0               0
MplsLsmDecapFail                        0               0
MplsMismatchLinktype                    0               0
MplsNoAdj                               0               0
MplsNoRoute                             0               0
MplsPopPipeTtlExpire                    0               0
MplsPopUnfPhpTtlExpire                  0               0
MplsPopUnfUhpTtlExpire                  0               0
MplsSanityDrop                          0               0
MplsSanityEchoReq                       0               0
MplsUnclassified                        0               0
MultilinkCfg                            0               0
Mvpnv6ExceedMtu                         0               0
NatIn2out                               0               0
NatOut2in                               0               0
NoGpmMemoryErr                          0               0
NoMem                                   0               0
NotEnabled                              0               0
NullIpv4McastOutputMask                 0               0
NullIpv6McastOutputMask                 0               0
OamLoopback                             0               0
OceDropAdj                              0               0
PaWalkErr                               0               0
PppCxtMissed                            0               0
PppoeInvEncapInfo                       0               0
PppoeNoSession                          0               0
PppoePktBadLen                          0               0
```

```
  PppoePktInvHdr                          0                0
  PppoeUnconfigured                       0                0
  PuntErr                                 0                0
  PuntGlobalPolicerDrop                   0                0
  PuntPolicerDrop                         0                0
  PwStandbyNotFwd                         0                0
  QosActions                              0                0
  QosPolicing                             0                0
  ReassBadLen                             0                0
  ReassDrop                               0                0
  ReassFragTooBig                         0                0
  ReassNoFragInfo                         0                0
  ReassNoFragsLeft                        0                0
  ReassOverlap                            0                0
  ReassTimeout                            0                0
  ReassTooManyFrags                       0                0
  RedirectAdj                             0                0
  SpecialMulticastObj                     0                0
  TailDrop                                0                0
  TcpBadfrag                              0                0
  TunnelBadGreChecksum                    0                0
  TunnelBadPimChecksum                    0                0
  TunnelMisconfiguration                  0                0
  TunnelUnsupportedConfig                 0                0
  UidbNotCfgd                             0                0
  UnconfiguredFia                         0                0
  UnconfiguredIpv4Fia                  1085           275020
  UnconfiguredIpv6Fia                     0                0
  UnconfiguredMidchainLeaf                0                0
  UnconfiguredMplsFia                     0                0
  UnknownEncap                            0                0
  UnknownExtHeader                        0                0
  Unresolved                              0                0
  UnsupportedOce                          0                0
  UnsupportLinktypeNoRoute                0                0
  UnsupportLinktypeNull0                  0                0
  VfrErr                                  0                0
  VfrTailDrop                             0                0
  Wred                                    0                0
  GreUnsupportedProto                     0                0
  GreMultipleGreEncap                     0                0
  GreQualNoMatch                          0                0
  BfdMhIsValidFail                        0                0
  BfdMhInvalidDiscIndex                   0                0
  BfdMhTtlChkFail                         0                0
```

The following command shows how to display PSE QFP statistics:

```
RP/0/RSP0/CPU0:router# show controllers pse qfp statistics summary location 0/1/cpu0

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

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

```
Incoming IPC packets: 0
Outgoing IPC packets: 0
Punted packets: 0
Injected packets: 0
```

show controllers pse qfp system state

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

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

Syntax Description

location *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.

Command Default

None.

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
cisco-support	read

Examples

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

```
RP/0/RSP0/CPU0:router# show controllers pse qfp system state location 0/1/cpu0
```

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 3.7.2	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/RSP0/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 3: 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 ASR 9000 Series Aggregation Services Router Feature Troubleshooting Module* 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 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 3.7.2	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/RSP0/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 4: 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/RSP0/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 3.7.2	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/RSP0/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 5: 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 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 3.7.2	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/RSP0/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 3.7.2	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/RSP0/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 6: 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 3.7.2	This command was introduced.

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/RSP0/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 7: 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 3.7.2	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/RSP0/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 8: 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 3.7.2	This command was introduced.

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

The following example shows the output of the **show uidb data** command:

```
RP/0/RSP0/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 9: 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/RSP0/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 49	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 3.7.2	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/RSP0/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 46	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 3.7.2	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/RSP0/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 10: 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 46	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 3.7.2	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 11: 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

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)
512	102.4	51.2	25.6
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/RSP0/CPU0:router #configure
RP/0/RSP0/CPU0:router(config)# watchdog threshold memory location 0/RP0/CPU0 minor 30 severe
 20 critical 10
```

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 3.7.2	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/RSP0/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/RSP0/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 12: 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
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 3.7.2	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.

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/RSP0/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 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 3.7.2	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 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 [**interface** *type interface-path-id*] | **{ 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.
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.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	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 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 3.7.2	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 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 3.7.2	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 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/RSP0/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 3.7.2	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 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

```
RP/0/RSP0/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/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--
```

The following example shows a sample output of the **show tech-support control-ethernet** command on the ASR 9000 Series Router:

```
RP/0/RSP0/CPU0:router(admin)# show tech-support control-ethernet terminal

------------------------------------------------------------------------------

                      show tech-support control-ethernet

------------------------------------------------------------------------------


--------------------------------- show version ---------------------------------

Cisco IOS XR Software, Version 3.9.0[SIT_IMAGE]
Copyright (c) 2009 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.2(20090903:202931) [ASR9K ROMMON],

Router uptime is 14 hours, 53 minutes
System image file is
"tftp://202.153.144.25//auto/tftp-blr-users1/thia/image/comp-asr9k-mini.vm-3.9.0.34I.SIT_IMAGE"


cisco ASR9K Series (MPC8641D) processor with 4194304K bytes of memory.
MPC8641D processor at 1333MHz, Revision 2.2

4 Management Ethernet
40 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 0x102
Boot device on node 0/RSP0/CPU0 is mem:
Package active on node 0/RSP0/CPU0:
asr9k-scfclient, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-scfclient-3.9.0.34I
    Built on Tue Dec  8 09:46:13 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-diags, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-diags-3.9.0.34I
    Built on Tue Dec  8 09:46:16 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-mcast, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-mcast-3.9.0.34I
    Built on Tue Dec  8 11:11:06 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
```

```
c4.2.1-p0

asr9k-rout, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-rout-3.9.0.34I
    Built on Tue Dec  8 09:46:26 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-lc, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-lc-3.9.0.34I
    Built on Tue Dec  8 10:57:43 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-fwdg, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-fwdg-3.9.0.34I
    Built on Tue Dec  8 09:36:23 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-admin, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-admin-3.9.0.34I
    Built on Tue Dec  8 09:25:42 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-base, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-base-3.9.0.34I
    Built on Tue Dec  8 09:29:48 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-os-mbi, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-os-mbi-3.9.0.34I
    Built on Tue Dec  8 08:35:56 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

Configuration register on node 0/RSP1/CPU0 is 0x1922
Boot device on node 0/RSP1/CPU0 is mem:
Package active on node 0/RSP1/CPU0:
asr9k-scfclient, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-scfclient-3.9.0.34I
    Built on Tue Dec  8 09:46:13 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-diags, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-diags-3.9.0.34I
    Built on Tue Dec  8 09:46:16 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-mcast, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-mcast-3.9.0.34I
    Built on Tue Dec  8 11:11:06 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-rout, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-rout-3.9.0.34I
    Built on Tue Dec  8 09:46:26 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-lc, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-lc-3.9.0.34I
    Built on Tue Dec  8 10:57:43 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-fwdg, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-fwdg-3.9.0.34I
    Built on Tue Dec  8 09:36:23 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0
```

```
asr9k-admin, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-admin-3.9.0.34I
    Built on Tue Dec  8 09:25:42 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-base, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-base-3.9.0.34I
    Built on Tue Dec  8 09:29:48 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-os-mbi, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-os-mbi-3.9.0.34I
    Built on Tue Dec  8 08:35:56 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/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 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-scfclient-3.9.0.34I
    Built on Tue Dec  8 09:46:13 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-diags, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-diags-3.9.0.34I
    Built on Tue Dec  8 09:46:16 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-mcast, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-mcast-3.9.0.34I
    Built on Tue Dec  8 11:11:06 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-lc, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-lc-3.9.0.34I
    Built on Tue Dec  8 10:57:43 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-fwdg, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-fwdg-3.9.0.34I
    Built on Tue Dec  8 09:36:23 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-admin, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-admin-3.9.0.34I
    Built on Tue Dec  8 09:25:42 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-base, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-base-3.9.0.34I
    Built on Tue Dec  8 09:29:48 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0

asr9k-os-mbi, V 3.9.0.34I[SIT_IMAGE], Cisco Systems, at mem:asr9k-os-mbi-3.9.0.34I
    Built on Tue Dec  8 08:35:56 UTC 2009
    By sjc-lds-511 in /auto/ioxbuild6/production/3.9.0.34I.SIT_IMAGE/asr9k/workspace for
c4.2.1-p0


-------------------------------- show platform --------------------------------
Node            Type                      State            Config State
-------------------------------------------------------------------------------
0/RSP0/CPU0     A9K-RSP-4G(Active)        IOS XR RUN       PWR,NSHUT,MON
0/RSP1/CPU0     A9K-RSP-4G(Standby)       IOS XR RUN       PWR,NSHUT,MON
```

```
0/1/CPU0        A9K-40GE-B                IOS XR RUN       PWR,NSHUT,MON

Location: *CPU*

------------------------------------------------------------------------------

                  show tech-support control-ethernet complete

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

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 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 3.7.2	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 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 [**file** *sent-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* • **disk0:** *filename* • **disk1:** *filename* • **harddisk:** *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) Specifies a list of rack.

Command Default

The command output is not compressed.

Command Modes

Admin EXEC mode

Command History

Release	Modification
Release 3.7.2	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 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
cisco-support	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.
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 3.7.2	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 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/RSP0/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 3.7.2	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 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 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 3.7.2	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.

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

```
RP/0/RSP0/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
    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/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 3.7.2	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 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/RSP0/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 3.7.2	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.

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 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 3.7.2	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/RSP0/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.
standby	(Optional) Specifies standby node specific information.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	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.

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/RSP0/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 3.7.2	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
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 3.7.2	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 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 3.7.2	This command was introduced.
Release 5.0.0	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 performance-traffic

To automatically run **show** commands that display information specific to video monitoring, use the **show tech-support performance-traffic** command in EXEC mode.

show tech-support performance-traffic file *send-to* [{**background** | **compressed** | **uncompressed**}] [**location** {*node-id* | **rack** *rack-id*}]

Syntax Description

performance-traffic	Specifies that the keyword to collect video monitoring support information. This is mandatory.
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*
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.
rack	(Optional) Specifies a list of racks.
rack-id	(Optional) Specifies the rack id.

Command Default

If the location is not specified, the tech-support information is collected from all the nodes by default. If file is specified, the command is run in the back ground and the output is compressed by default..

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

The following show commands run automatically when you run the **show tech-support performance-traffic** command:

- **show install package all detail**
- **show logging**
- show interfaces summary
- show interfaces brief
- **show running-config**
- show policymap targets type performance-traffic
- show policymgr process trace all location all
- show policy-lib trace all location all
- show afmon-lib trace client afmon_ea both location all
- show afmon-ma trace location all
- show app-obj trace location all
- show im database brief location
- show app-obj db afmon_ma_intf_db proc afmon_ma location
- show process blocked location
- show processes afmon_ma
- show processes afmon_ma location
- show app-obj db policy_map_afmon_db proc afmon_ea location
- show app-obj db class_map_afmon_db proc afmon_ea location
- show processes afmon_ea location
- show performance traffic platform flow all-entries detail location
- show performance traffic platform flow summary location
- show performance traffic platform resource-counters location
- show performance traffic platform ha chkpt all info location
- show performance traffic platform ha state location
- show performance traffic platform trace 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
cisco-support	read

Examples

The following example shows how to run the **show tech-support performance-traffic** command on the router:

```
RP/0/RSP0/CPU0:router# show tech-support performance-traffic location 0/1/cpu0
```

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 3.7.2	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 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 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 {**cpu-infra** | **file** *send-to* | **terminal** [**page**] | **redundancy**}

Syntax Description

cpu-infra	Displays the show platform CPU infra related diagnostics.
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*
redundancy	(Optional) Displays platform redundancy related diagnostics for tech-support.
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

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	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 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/RSP0/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 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/RSP0/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 dependent and platform independent Quality of Service (QoS) debugging information, use the **show tech-support qos** command in EXEC mode.

show tech-support qos {**pd** | **pi**} [**file** *send-to* [**background**] [{**compressed** | **uncompressed**}]] [{**location** *node-id*}] [**rack**]

Syntax Description

pd	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 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 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/RSP0/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 [{**file** *send-to* [**background**] [{**compressed** | **uncompressed**}] | **location** *node-id* | **ipv4** | **ipv6** | **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.
ipv4	(Optional) Displays the IPv4 command output.
ipv6	(Optional) Displays the IPv6 command output.
location *node-id*	(Optional) Specifies a node. 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 3.7.2	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.

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 3.7.2	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 3.7.2	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 3.7.2	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 3.7.2	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 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 3.7.2	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 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 3.7.2	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 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 3.7.2	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.

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 svi [**file** *send-to* [**background**] [{**compressed**|**uncompressed**}]] [**location** *node-id*] [**rack**]

Syntax Description

svi	Collets information about Service Virtual Interfaces.
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 3.7.2	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 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 3.7.2	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.

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/RSP0/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 3.7.2	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.

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 vsm

To automatically run **show** commands that display debugging information related to VSM, use the **show tech-support vsm** command in the EXEC mode.

show tech-support vsm location *node-id*{**file** *send-to* [**background**] [{**compressed**|**uncompressed**}]}

Syntax Description

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

Command Default

The command output is not compressed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 5.1.1	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 vsm** command to run **show** commands that display VSM 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.

The following show commands run automatically when you run the **show tech-support vsm** command:

- show controllers np crashinfo all
- show controllers np drvlog
- show controller np fabric-counters all
- show controllers fabric fia stats
- show controllers np ports all
- show controllers np counters all
- show controllers switch data-path summary hardware
- show controllers switch data-path statistics mac
- show controllers switch data-path trace
- show controllers punt-switch port-status
- show controllers punt-switch switch-stats
- show controllers punt-switch trace
- show drops
- show controllers np counters all
- show controllers np punt-path-counters all HoST-SGMII-0 all
- show controllers np punt-path-counters all HoST-SGMII-1 all
- show spp sid stats

- show spp node-counters
- show netio drops
- show lpts pifib hardware entry statistics
- show process blocked
- show platform
- show install active
- show version
- show ipv4 interface brief
- show memory summary
- show inventory
- show process blocked
- show process boot
- show running-config
- show log
- show controllers np summary all
- show hw-module fpd location all
- show diag
- show virtual-service list
- show virtual-service global

Task ID

Task ID	Operations
basic-services	read

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/RSP0/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/RSP0/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/RSP0/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 3.7.2	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/RSP0/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 13: 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 218	Displays information about deadline monitoring.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 234	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/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 14: 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 214	Displays information about the context for the wd-critical-mon process.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 234	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/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 15: 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
Frequency	Frequency for ticker or watcher punch count.

Field	Description
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 214	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 218	Displays information about deadline monitoring.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 234	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/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 214	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 218	Displays information about deadline monitoring.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 234	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/CPU0:router# show critmon trace error
```

Related Commands

Command	Description
show critmon context, on page 214	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 218	Displays information about deadline monitoring.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 234	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/CPU0:router# show critmon trace info
```

Related Commands

Command	Description
show critmon context, on page 214	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 218	Displays information about deadline monitoring.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace lib-error, on page 234	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/CPU0:router# show critmon trace lib-error
```

Related Commands

Command	Description
show critmon context, on page 214	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 218	Displays information about deadline monitoring.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-info, on page 236	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 3.7.2	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/RSP0/CPU0:router# show critmon trace lib-info
```

Related Commands

Command	Description
show critmon context, on page 214	Displays information about the context for the wd-critical-mon process.
show critmon deadline, on page 218	Displays information about deadline monitoring.
show critmon statistics, on page 220	Displays information about the critical monitor statistics.
show critmon trace all, on page 228	Displays information about all traces for a critical monitor.
show critmon trace error, on page 230	Displays information about error traces for a critical monitor.
show critmon trace info, on page 232	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error, on page 234	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 3.7.2	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/RSP0/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 241	Displays reboot information for the last graceful reboot for a node.
show reboot history, on page 242	Displays reboot information for the last graceful reboot.
show reboot last, on page 244	Displays the latest crash information.
show reboot pcds, on page 247	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 3.7.2	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/RSP0/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 238	Displays reboot information for a node first.
show reboot history, on page 242	Displays reboot information for the last graceful reboot.
show reboot last, on page 244	Displays the latest crash information.
show reboot pcds, on page 247	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 3.7.2	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/RSP0/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 238	Displays reboot information for a node first.
show reboot graceful, on page 241	Displays reboot information for the last graceful reboot for a node.
show reboot last, on page 244	Displays the latest crash information.
show reboot pcds, on page 247	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 3.7.2	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/RSP0/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 238	Displays reboot information for a node first.
show reboot graceful, on page 241	Displays reboot information for the last graceful reboot for a node.
show reboot history, on page 242	Displays reboot information for the last graceful reboot.
show reboot pcds, on page 247	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 3.7.2	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/RSP0/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 238	Displays reboot information for a node first.
show reboot graceful, on page 241	Displays reboot information for the last graceful reboot for a node.
show reboot history, on page 242	Displays reboot information for the last graceful reboot.
show reboot last, on page 244	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 3.7.2	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/RSP0/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.