R3.9 Technical Checkpoint Review—Cisco Confidential

Cisco ASR 9000 Series Aggregation Services Router Advanced System Command Reference

Cisco IOS XR Software Release 3.9.0

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Cisco ASR 9000 Series Aggregation Services Router Advanced System Command Reference

Preface

This chapter describes the commands used to troubleshoot a router using Cisco IOS XR software.

This chapter contains the following sections:

Changes to This Document

Table 1 lists the technical changes made to this document since it was first printed.

Table 1 Changes to This Document

Revision	Date	Change Summary
OL-xxxxx-xx	November 2009	Initial release of this document.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html

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ASIC Driver Commands on Cisco ASR 9000 Series Router

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.

Reviewers: Please specify the commands and provide the details, if I have missed any ASIC driver commands for ASR 9000 Series routers.

show controllers pse tcam

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

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

Syntax Description

connections	(Optional) Displays the summary information for the client and server connections.
contents	(Optional)Displays the contents of TCAM entries/registers and range logic block (RLB) entries.
lookup	(Optional) Displays the results of a lookup operation in a specific bank.
prefix-compression	(Optional) Displays the failed prefixes in the IPV6 prefix compression.
region-addrs	(Optional) Displays the CAM addresses used by a specific region.
region-list	(Optional)Displays region handles for a feature in a specific bank.
rlb-range-map	(Optional) Displays the mapping of specified port range to fields in TCAM entries.
rsm	(Optional) Display resource shadow memory (RSM) data.
summary	(Optional) Displays the summary of CAM free space or entries for a region.
trace	(Optional) Displays the TCAM manager trace data.
egress	(Optional) Displays information for the egress PSE device only. **Note** Follow the **egress** argument with the **location** *node-id* keyword and argument to restrict the command to a specific node.

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

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

The optional **egress** or **ingress** and **location** keywords are not mutually exclusive. The **egress** and **ingress** keywords direct the command to specific PSE device, and the **location** keyword directs the command to that device or devices on the specified modular services card. You can specify the **egress** or **ingress** and **location** options together in the same command.

Task ID

Task ID	Operations
acl	read
interface	read
drivers	read

Examples

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

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

TCAM Device Information for Ingress Metro, CAM channel 0:
Device size: 18M (256K array entries of 72-bits), 260014 available
Current mode of operation: Turbo
Software Initialization:
        Memory management state: complete
        Range block state: complete
        IPv6 prefix compression state: complete
Hardware Initialization:
        Device registers: complete
        CAM/SRAM Memory: complete
        Default entries for applications: complete
        Range Logic Block registers: complete
        IPv6 prefix compression region: complete
Feature specific information:
        packet filtering (id 0):
                Owner client id: 3.   Limit 260096 cells
                Total 1 regions using 76 CAM cells
        QoS (id 1):
                Owner client id: 1.   Limit 260096 cells
                Duplication enabled in Turbo mode into CAM channel 1
        Fab QoS (id 2):
                Owner client id: 1.   Limit 260096 cells
                Duplication enabled in Turbo mode into CAM channel 1
        ipv6 prefix compress (id 10):
                Owner client id: 13.   Limit 260096 cells
                Total 1 regions using 2 CAM cells
                Entry duplication enabled in Turbo and Feature modes into CAM c1
        tcam_mgr (id 11):
                Owner client id: 13.   Limit 260096 cells
                Total 1 regions using 4 CAM cells
        L2FIB (id 12):
                Owner client id: 14.   Limit 260096 cells
                Total 1 regions using 2048 CAM cells
        LI (id 13):
                Owner client id: 3.   Limit 262144 cells
                Total 1 regions using 0 CAM cells
                Duplication enabled in Turbo mode into CAM channel 1
TCAM Device Information for Ingress Metro, CAM channel 1:
Device size: 18M (256K array entries of 72-bits), 261760 available
Current mode of operation: Turbo
Software Initialization:
        Memory management state: complete
        Range block state: complete
        IPv6 prefix compression state: complete
Hardware Initialization:
        Device registers: complete
        CAM/SRAM Memory: complete
        Default entries for applications: complete
        Range Logic Block registers: complete
        IPv6 prefix compression region: complete
Feature specific information:
        Pre-IFIB (id 4):
                Owner client id: 10.   Limit 260096 cells
                Total 3 regions using 302 CAM cells
        ipv6 prefix compress (id 10):
                Owner client id: 13.   Limit 260096 cells
                Total 1 regions using 2 CAM cells
        tcam_mgr (id 11):
```

```
        Owner client id: 13.   Limit 260096 cells
        Total 2 regions using 80 CAM cells
L2FIB (id 12):
        Owner client id: 14.   Limit 260096 cells
        Total 1 regions using 0 CAM cells
LI (id 13):
        Owner client id: 3.   Limit 262144 cells
        Total 1 regions using 0 CAM cells
```

show packet-memory

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

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

Syntax Description

clients	(Optional) Displays the packet manager clients.
corrupt	(Optional) Displays the information about corrupted packets.
failures	(Optional) Displays the packet buffer, header, hardware buffer allocation failures.
fsv	(Optional) Displays feature-specific variable information.
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.

Defaults

Displays information about all packet memory.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
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

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 1 describes the significant fields shown in the display.

Table 1 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 on Cisco ASR 9000 Series Router

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

The commands in this chapter with the cisco-support task ID are used in the *Cisco IOS XR Troubleshooting Guide* 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. See "Obtaining Documentation and Submitting a Service Request" section on page iii in the Preface.

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.

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	Displays the detailed client connection information.
job	Specify a Job ID.
path	Specify a path filter.
location	Specify a location.
shared-plane	Displays the shared-plane data

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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             '--'
!
!
!
```

Table 2 describes the significant fields shown in the display.

Table 2 show sysdb trace verification location Field Descriptions

Field	Description
Timestamp	Time of the verification.
jid	Job identifier of the verification.
tid	Thread identifier.

Table 2 show sysdb trace verification location Field Descriptions (continued)

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

Related Commands

Command	Description
show sysdb connection path shared-plane	Displays sysDB 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.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.s.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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'
```

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.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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)
```

Table 3 describes the significant fields shown in the display.

Table 3 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	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 micro-IDB index data information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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# sh 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
```

Table 4 describes the significant fields shown in the display.

Table 4 show uidb data Field Descriptions

Field	Description
Location	Node in system where the interface resides.
Ifname/Ifhandle	Name associated with the interface.
Pse direction	Direction flag for UIDB data.
INDEX STATUS	Status of the interface.
L2 ENCAP	L2 encap type.
SPRAYER QUEUE LSB	Sprayer queue identifier.
ICMP PUNT FLAG	Flag indicating ICMP punts are enabled for the protocol.

Related Commands

Command	Description
show uidb trace	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 }

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.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	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 in EXEC mode.

show uidb index

Syntax Description

This command has no arguments or keywords.

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

Use the **show uidb index** command to display the micro-IDB index assigned by the software.

Task ID

Task ID	Operations
cisco-support	read

Examples

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

```
RP/0/RP0/CPU0:router# show uidb index

--------------------------------------------------------------------------------
  Location Interface-name    Interface-Type       Ingress-index  Egress-index
--------------------------------------------------------------------------------
    0/1/CPU0          0                                   0               0
    0/1/CPU0 GigabitEthernet0_1_5_0          Main interface        1
    1
    0/1/CPU0 GigabitEthernet0_1_5_1          Main interface        2
    2
    0/1/CPU0 GigabitEthernet0_1_5_2          Main interface        3
    3
    0/1/CPU0 GigabitEthernet0_1_5_3          Main interface        4
    4
```

```
0/1/CPU0 GigabitEthernet0_1_5_4          Main interface        5
5
0/1/CPU0 GigabitEthernet0_1_5_5          Main interface        6
6
0/1/CPU0 GigabitEthernet0_1_5_6          Main interface        7
7
0/1/CPU0 GigabitEthernet0_1_5_7          Main interface        8
8
0/1/CPU0 POS0_1_0_0          Main interface        9               9
0/1/CPU0 POS0_1_4_0          Main interface       10              10
0/1/CPU0 POS0_1_0_1          Main interface       11              11
0/1/CPU0 POS0_1_4_1          Main interface       12              12
0/1/CPU0 POS0_1_0_2          Main interface       13              13
0/1/CPU0 POS0_1_4_2          Main interface       14              14
0/1/CPU0 POS0_1_0_3          Main interface       15              15
0/1/CPU0 POS0_1_4_3          Main interface       16              16
0/1/CPU0 Bundle-POS24        Bundle Interface  17              17
0/1/CPU0 Bundle-Ether28  Bundle Interface18 18
0/1/CPU0 Bundle-Ether28.1           Sub-interface 19              19
0/1/CPU0 Bundle-Ether28.2           Sub-interface 20              20
0/1/CPU0 Bundle-Ether28.3           Sub-interface 21              21
0/6/CPU0          0                                0               0
0/6/CPU0 GigabitEthernet0_6_5_0          Main interface        1
1
0/6/CPU0 GigabitEthernet0_6_5_1          Main interface        2
2
0/6/CPU0 GigabitEthernet0_6_5_2          Main interface        3
3
0/6/CPU0 GigabitEthernet0_6_5_3          Main interface        4
4
0/6/CPU0 GigabitEthernet0_6_5_4          Main interface        5
5
0/6/CPU0 GigabitEthernet0_6_5_5          Main interface        6
6
0/6/CPU0 GigabitEthernet0_6_5_6          Main interface        7
7
0/6/CPU0 GigabitEthernet0_6_5_7          Main interface        8
8
0/6/CPU0 POS0_6_0_0          Main interface        9               9
0/6/CPU0 POS0_6_4_0          Main interface       10              10
0/6/CPU0 POS0_6_0_1          Main interface       11              11
0/6/CPU0 POS0_6_4_1          Main interface       12              12
0/6/CPU0 POS0_6_0_2          Main interface       13              13
0/6/CPU0 POS0_6_4_2          Main interface       14              14
0/6/CPU0 POS0_6_0_3          Main interface       15              15
0/6/CPU0 POS0_6_4_3          Main interface       16              16
0/6/CPU0 POS0_6_4_4          Main interface       17              17
0/6/CPU0 POS0_6_4_5          Main interface       18              18
0/6/CPU0 POS0_6_4_6          Main interface       19              19
0/6/CPU0 POS0_6_4_7          Main interface       20              20
```

Table 5 describes the significant fields shown in the display.

Table 5 show uidb index Field Descriptions

Field	Description
Location	Node where index is located.
Interface-name	Name of the interface.
Interface-Type	Type of interface.

Table 5 show uidb index Field Descriptions (continued)

Field	Description
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	Displays IDB index data information.
show uidb data-dump	Displays UIDB 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.

Defaults

Use the **show watchdog threshold memory defaults location all** command to display the default memory thresholds.

Command Modes

Global configuration
Interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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.

Table 6 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 6 Recommended Memory Threshold Values

Total Available Memory (MB)	Minor Threshold (20 percent of available memory)	Severe Threshold (10 percent of available memory)	Critical Threshold (5 percent of available memory)
128	25.6	12.8	6.4
256	51.2	25.6	12.8
512	102.4	51.2	25.6
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/RP0/CPU0:router(config)# watchdog threshold memory location 0/RP0/CPU0 minor 30
severe 20 critical 10
```

Tech-Support Commands on Cisco ASR 9000 Series Router

This module describes commands used for displaying the output of **show** commands using Cisco IOS XR 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.

show tech-support

To automatically run **show** commands that display system information, use the **show tech-support** command in the EXEC and administration EXEC modes.

show tech-support [**password**] {**terminal** [**page**] | **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>".
terminal	Displays 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.
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	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

The command output is not compressed.
Passwords and other security information are not displayed.

Command Modes

EXEC
Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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** command to run **show** commands that display system 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** 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 imds interface brief**
- **show lpts ifib brief**
- **show im chains 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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** command output:

```
RP/0/RSP0/CPU0:router# show tech-support terminal page

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

                                show tech-support

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



----------------------------- show running-config -----------------------------

Building configuration...
!! Last configuration change at Tue Mar 27 15:36:13 2007 by user_A
!
hostname CRS-1
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 172.16.52.72
domain ipv4 host p2 172.16.52.77
domain ipv4 host ce6 172.16.52.73
domain ipv4 host ce7 172.16.52.78
domain ipv4 host pe6 172.16.52.128
domain ipv4 host pe7 172.16.52.182
domain ipv4 host pe11 172.16.52.83
domain lookup disable
username CRS-1_2
 password 7 <removed>
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/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
ipv4 virtual address 172.16.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to CRS-1_2 Bundle-Ether 28
 ipv4 address 10.0.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to CRS-1_2 Bundle-Ether 28.1
 ipv4 address 10.0.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 dot1q vlan 30
 description Connected to CRS-1_2 Bundle-Ether 28.2
 ipv4 address 10.0.30.1 255.255.255.0
!
interface Bundle-Ether28.3
 description Connected to CRS-1_2 Bundle-Ether 28.3
 ipv4 address 10.0.31.1 255.255.255.0
 dot1q vlan 31
!
interface Bundle-POS24
 bundle minimum-active bandwidth 2488320
 bundle minimum-active links 1
 ipv4 address 10.10.24.1 255.255.255.0
.
.
```

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*] {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

bcdl-group	(Optional) Name of the BCDL group.
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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. This command generates BCDL 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 bcdl** command:

- **show bcdl**
- **show bcdl consumers**
- **show bcdl tables**
- **show process bcdl_agent**
- **show bcdl trace location all**

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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

Examples

The following example shows some of the **show tech-support bcdl** command output:

```
RP/0/RSP0/CPU0:router# show tech-support bcdl terminal page

Mon Nov 10 18:29:05.526 PST DST


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

show tech-support bcdl

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


---------------------------------- show bcdl ----------------------------------
grp ipv4_lmrib, gid 2104, sg cnt 1, agent jid 117, node 0/RP0/CPU0, pulse 0, ne0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2105 16    6       no      yes   no        0     0         0         0

grp ipv4_mrib, gid 2102, sg cnt 1, agent jid 116, node 0/RP0/CPU0, pulse 0, new0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2103 16    6       no      yes   no        0     0         0         0

grp ipv4_rib, gid 2049, sg cnt 1, agent jid 111, node 0/RP0/CPU0, pulse 38335, 0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2050 16    6       no       no   no        0 38387     38330         0

grp ipv6_mrib, gid 2100, sg cnt 1, agent jid 115, node 0/RP0/CPU0, pulse 0, new0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2101 16    6       no      yes   no        0     0         0         0

grp ipv6_rib, gid 2051, sg cnt 1, agent jid 112, node 0/RP0/CPU0, pulse 6, new 0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2052 16    6       no       no   no        0     1         1         0

grp mpls_lsd_v4, gid 2060, sg cnt 1, agent jid 113, node 0/RP0/CPU0, pulse 38430
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2061 17    6       no       no   no        0 38431     38432         0

grp mpls_lsd_v6, gid 2062, sg cnt 1, agent jid 114, node 0/RP0/CPU0, pulse 7, n0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2063 17    6       no       no   no        0     1         2         0

grp pa_ff, gid 2021, sg cnt 1, agent jid 110, node 0/RP0/CPU0, pulse 271, new m0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2022 16    6       no       no   no        0   260       259         0

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------------------------------ show bcdl consumers ------------------------------
group ipv4_lmrib, gsp gid 2104, 6 consumers, agent jid 117, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
458887 0/RP0/CPU0   0   0 2105   N         0           0     0 fib_mgr
209032 0/RP1/CPU0   0   0 2105   N         0           0     0 fib_mgr
90198   0/6/CPU0   0   0 2105   N         0           0     0 fib_mgr
106592   0/4/CPU0   0   0 2105   N         0           0     0 fib_mgr
114782   0/4/CPU1   0   0 2105   N         0           0     0 fib_mgr
90198   0/1/CPU0   0   0 2105   N         0           0     0 fib_mgr

group ipv4_mrib, gsp gid 2102, 6 consumers, agent jid 116, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
790787 0/RP0/CPU0   0   0 2103   N         0           0     0 ipv4_mfwd_pare
```

```
262380 0/RP1/CPU0    0    0 2103    N          0            0      0 ipv4_mfwd_pare
127125   0/1/CPU0    0    0 2103    N          0            0      0 ipv4_mfwd_pare
139404   0/4/CPU1    0    0 2103    N          0            0      0 ipv4_mfwd_pare
127114   0/6/CPU0    0    0 2103    N          0            0      0 ipv4_mfwd_pare
131214   0/4/CPU0    0    0 2103    N          0            0      0 ipv4_mfwd_pare

group ipv4_rib, gsp gid 2049, 6 consumers, agent jid 111, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
458887 0/RP0/CPU0    0    0 2050    N     38387     4599212      0 fib_mgr
209032 0/RP1/CPU0    0    0 2050    N     38385     4599156      0 fib_mgr
114782   0/4/CPU1    0    0 2050    N     38330     4574016      0 fib_mgr
90198    0/6/CPU0    0    0 2050    N     38363     4597820      0 fib_mgr
90198    0/1/CPU0    0    0 2050    N     38385     4599156      0 fib_mgr
106592   0/4/CPU0    0    0 2050    N     38333     4580188      0 fib_mgr

group ipv6_mrib, gsp gid 2100, 6 consumers, agent jid 115, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
790788 0/RP0/CPU0    0    0 2101    N          0            0      0 ipv6_mfwd_pare
262381 0/RP1/CPU0    0    0 2101    N          0            0      0 ipv6_mfwd_pare
127126   0/1/CPU0    0    0 2101    N          0            0      0 ipv6_mfwd_pare
127115   0/6/CPU0    0    0 2101    N          0            0      0 ipv6_mfwd_pare
139405   0/4/CPU1    0    0 2101    N          0            0      0 ipv6_mfwd_pare
131215   0/4/CPU0    0    0 2101    N          0            0      0 ipv6_mfwd_pare

group ipv6_rib, gsp gid 2051, 6 consumers, agent jid 112, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
458887 0/RP0/CPU0    0    0 2052    N          1           28      0 fib_mgr
209032 0/RP1/CPU0    0    0 2052    N          2           56      0 fib_mgr
90198    0/1/CPU0    0    0 2052    N          2           56      0 fib_mgr
106592   0/4/CPU0    0    0 2052    N          2           56      0 fib_mgr
90198    0/6/CPU0    0    0 2052    N          2           56      0 fib_mgr
114782   0/4/CPU1    0    0 2052    N          2           56      0 fib_mgr

group mpls_lsd_v4, gsp gid 2060, 6 consumers, agent jid 113, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
458887 0/RP0/CPU0    0    0 2061    N     38431     6895816      0 fib_mgr
209032 0/RP1/CPU0    0    0 2061    N     38431     6895816      0 fib_mgr
90198    0/1/CPU0    0    0 2061    N     38431     6895816      0 fib_mgr
90198    0/6/CPU0    0    0 2061    N     38431     6895816      0 fib_mgr
106592   0/4/CPU0    0    0 2061    N     38431     6895816      0 fib_mgr
114782   0/4/CPU1    0    0 2061    N     38431     6895816      0 fib_mgr

group mpls_lsd_v6, gsp gid 2062, 6 consumers, agent jid 114, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
458887 0/RP0/CPU0    0    0 2063    N          1         228      0 fib_mgr
209032 0/RP1/CPU0    0    0 2063    N          1         228      0 fib_mgr
90198    0/1/CPU0    0    0 2063    N          1         228      0 fib_mgr
90198    0/6/CPU0    0    0 2063    N          1         228      0 fib_mgr
106592   0/4/CPU0    0    0 2063    N          1         228      0 fib_mgr
114782   0/4/CPU1    0    0 2063    N          1         228      0 fib_mgr

group pa_ff, gsp gid 2021, 6 consumers, agent jid 110, node 0/RP0/CPU0
(expected 6 consumers to reply, received 6 replies)
pid       node asg csg  lwg sus  messages       bytes  errs name
471193 0/RP0/CPU0    0    0 2022    N        260       52876      0 pifibm_server
90221    0/6/CPU0    0    0 2022    N         33       18516      0 pifibm_server
90214    0/1/CPU0    0    0 2022    N         33       18516      0 pifibm_server
110695   0/4/CPU0    0    0 2022    N        209       48132      0 pifibm_server
118885   0/4/CPU1    0    0 2022    N        224       50052      0 pifibm_server
```

```
221341 0/RP1/CPU0    0    0 2022    N       251       52796     0 pifibm_server

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------------------------------ show bcdl tables -------------------------------
grp ipv4_lmrib, gid 2104, sg cnt 1, agent jid 117, node 0/RP0/CPU0, pulse 0, ne0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2105 16    6       no      yes   no        0     0         0         0
sgs: 1, table_cnt: 0, table_mid_cnt: 0, buf size: 20
Showing table info for 1 subgroups
sg 0: has 0 tables (messages: 0, bytes: 0)

grp ipv4_mrib, gid 2102, sg cnt 1, agent jid 116, node 0/RP0/CPU0, pulse 0, new0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2103 16    6       no      yes   no        0     0         0         0
sgs: 1, table_cnt: 0, table_mid_cnt: 0, buf size: 20
Showing table info for 1 subgroups
sg 0: has 0 tables (messages: 0, bytes: 0)

grp ipv4_rib, gid 2049, sg cnt 1, agent jid 111, node 0/RP0/CPU0, pulse 38335, 0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2050 16    6       no       no   no        0 38387     38330         0
sgs: 1, table_cnt: 1, table_mid_cnt: 6, buf size: 124
Showing table info for 1 subgroups
sg 0: has 1 tables (messages: 0, bytes: 0)
table 0xe0000000: 6 members, dnld act: 0, messages: 38387, bytes: 4599212
cnsmr 0: pid 458887 on node 0/RP0/CPU0
cnsmr 1: pid 209032 on node 0/RP1/CPU0
cnsmr 2: pid 90198 on node 0/1/CPU0
cnsmr 3: pid 90198 on node 0/6/CPU0
cnsmr 4: pid 106592 on node 0/4/CPU0
cnsmr 5: pid 114782 on node 0/4/CPU1

grp ipv6_mrib, gid 2100, sg cnt 1, agent jid 115, node 0/RP0/CPU0, pulse 0, new0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2101 16    6       no      yes   no        0     0         0         0
sgs: 1, table_cnt: 0, table_mid_cnt: 0, buf size: 20
Showing table info for 1 subgroups
sg 0: has 0 tables (messages: 0, bytes: 0)

grp ipv6_rib, gid 2051, sg cnt 1, agent jid 112, node 0/RP0/CPU0, pulse 6, new 0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2052 16    6       no       no   no        0     1         1         0
sgs: 1, table_cnt: 1, table_mid_cnt: 6, buf size: 124
Showing table info for 1 subgroups
sg 0: has 1 tables (messages: 0, bytes: 0)
table 0xe0800000: 6 members, dnld act: 0, messages: 1, bytes: 28
cnsmr 0: pid 458887 on node 0/RP0/CPU0
cnsmr 1: pid 209032 on node 0/RP1/CPU0
cnsmr 2: pid 90198 on node 0/1/CPU0
cnsmr 3: pid 90198 on node 0/6/CPU0
cnsmr 4: pid 106592 on node 0/4/CPU0
cnsmr 5: pid 114782 on node 0/4/CPU1

grp mpls_lsd_v4, gid 2060, sg cnt 1, agent jid 113, node 0/RP0/CPU0, pulse 38430
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2061 17    6       no       no   no        0 38431     38432         0
sgs: 1, table_cnt: 0, table_mid_cnt: 0, buf size: 20
Showing table info for 1 subgroups
sg 0: has 0 tables (messages: 38431, bytes: 6895816)

grp mpls_lsd_v6, gid 2062, sg cnt 1, agent jid 114, node 0/RP0/CPU0, pulse 7, n0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2063 17    6       no       no   no        0     1         2         0
```

```
sgs: 1, table_cnt: 0, table_mid_cnt: 0, buf size: 20
Showing table info for 1 subgroups
sg 0: has 0 tables (messages: 1, bytes: 228)

grp pa_ff, gid 2021, sg cnt 1, agent jid 110, node 0/RP0/CPU0, pulse 271, new m0
sg  lwg fd csmr hdlr-act dnld-act susp wait-lck   seq pulse-tot pulse-out
0 2022 16    6       no       no    no        0   260       259         0
sgs: 1, table_cnt: 0, table_mid_cnt: 0, buf size: 20
Showing table info for 1 subgroups
sg 0: has 0 tables (messages: 260, bytes: 52876)

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-------------------------- show process bcdl_agent ---------------------------
Job Id: 110
PID: 462997
Executable path: /disk0/hfr-base-3.8.0.20I/sbin/bcdl_agent
Instance #: 1
Args: -p pa_ff -m 0 -b 0 -d libbcdl_pa_ff.dll
Version ID: 00.00.0000
Respawn: ON
Respawn count: 1
Max. spawns per minute: 12
Last started: Tue Nov  4 02:01:52 2008
Process state: Run
Package state: Normal
core: MAINMEM
Max. core: 0
startup_path: /pkg/startup/bcdl_agent.startup
Ready: 2.321s
Process cpu time: 3.115 user, 0.421 kernel, 3.536 total
JID    TID  Stack pri state         TimeInState       HR:MM:SS:MSEC NAME
110    1      44K  10 Receive      160:27:23:0754    0:00:00:0053 bcdl_agent
110    2      44K  10 Condvar       89:29:17:0305    0:00:00:0003 bcdl_agent
110    3      44K  10 Receive         0:00:00:0745    0:00:01:0815 bcdl_agent
110    4      44K  10 Nanosleep       0:00:06:0200    0:00:00:0025 bcdl_agent
110    5      44K  10 Receive         0:00:12:0728    0:00:00:0000 bcdl_agent
------------------------------------------------------------------------------
Job Id: 111
PID: 479442
Executable path: /disk0/hfr-base-3.8.0.20I/sbin/bcdl_agent
Instance #: 2
Args: -p ipv4_rib -m 0 -b 65200
Version ID: 00.00.0000
Respawn: ON
Respawn count: 1
Max. spawns per minute: 12
Last started: Tue Nov  4 02:02:35 2008
Process state: Run
Package state: Normal
core: MAINMEM
Max. core: 0
startup_path: /pkg/startup/bcdl_agent.startup
Ready: 3.682s
Process cpu time: 14.430 user, 1.416 kernel, 15.846 total
111    2      52K  10 Condvar      155:55:15:0696    0:00:00:0012 bcdl_agent
111    3      52K  10 Receive      160:25:30:0729    0:00:00:0000 bcdl_agent
111    4      52K  10 Nanosleep       0:00:01:0628    0:00:00:0026 bcdl_agent
111    5      52K  10 Receive         0:00:01:0441    0:00:08:0542 bcdl_agent
111    6      52K  10 Receive         0:00:13:0163    0:00:00:0000 bcdl_agent
------------------------------------------------------------------------------
Job Id: 112
PID: 479443
Executable path: /disk0/hfr-base-3.8.0.20I/sbin/bcdl_agent
```

```
Instance #: 3
Args: -p ipv6_rib -m 0 -b 65200
Version ID: 00.00.0000
Respawn: ON
Respawn count: 1
Max. spawns per minute: 12
Last started: Tue Nov  4 02:02:36 2008
Process state: Run
Package state: Normal
core: MAINMEM
Max. core: 0
startup_path: /pkg/startup/bcdl_agent.startup
Ready: 3.545s
Process cpu time: 3.695 user, 0.428 kernel, 4.123 total
112    1      48K  10 Receive      160:26:39:0019    0:00:00:0054 bcdl_agent
112    2      48K  10 Condvar      155:55:17:0392    0:00:00:0002 bcdl_agent
112    3      48K  10 Receive        0:00:14:0512    0:00:03:0983 bcdl_agent
112    4      48K  10 Nanosleep      0:00:02:0509    0:00:00:0030 bcdl_agent
112    6      48K  10 Receive        0:00:02:0001    0:00:00:0001 bcdl_agent
--------------------------------------------------------------------------------
Job Id: 113
PID: 483569
Executable path: /disk0/hfr-base-3.8.0.20I/sbin/bcdl_agent
Instance #: 4
Args: -p mpls_lsd_v4 -m 10 -b 32768
Version ID: 00.00.0000
Respawn: ON
Respawn count: 1
Max. spawns per minute: 12
Last started: Tue Nov  4 02:03:06 2008
Process state: Run
Package state: Normal
core: MAINMEM
Max. core: 0
startup_path: /pkg/startup/bcdl_agent.startup
Ready: 1.987s
Process cpu time: 18.238 user, 1.777 kernel, 20.015 total
113    2      48K  10 Condvar      160:22:55:0518    0:00:00:0002 bcdl_agent
113    3      48K  10 Receive      160:26:09:0157    0:00:00:0000 bcdl_agent
113    4      48K  10 Nanosleep      0:00:16:0592    0:00:00:0018 bcdl_agent
113    5      48K  10 Receive        0:00:00:0289    0:00:00:0002 bcdl_agent
113    6      48K  10 Receive        0:00:15:0924    0:00:01:0234 bcdl_agent
--------------------------------------------------------------------------------
Job Id: 114
PID: 487660
Executable path: /disk0/hfr-base-3.8.0.20I/sbin/bcdl_agent
Instance #: 5
Args: -p mpls_lsd_v6 -m 10 -b 32768
Version ID: 00.00.0000
Respawn: ON
Respawn count: 1
Max. spawns per minute: 12
Last started: Tue Nov  4 02:03:06 2008
Process state: Run
Package state: Normal
core: MAINMEM
Max. core: 0
startup_path: /pkg/startup/bcdl_agent.startup
Ready: 2.145s
Process cpu time: 4.206 user, 0.496 kernel, 4.702 total
114    1      52K  10 Receive        0:00:04:0881    0:00:04:0595 bcdl_agent
114    2      52K  10 Condvar      160:22:56:0168    0:00:00:0003 bcdl_agent
114    3      52K  10 Receive      160:26:09:0766    0:00:00:0000 bcdl_agent
114    4      52K  10 Nanosleep      0:00:16:0666    0:00:00:0019 bcdl_agent
```

```
114    5      52K  10 Receive        0:00:16:0589    0:00:00:0001 bcdl_agent

--More--.
.
.
```

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 {**terminal** [**page**] | **file** *send-to* [**background**] **compressed** | **uncompressed**]} [**interface** *type interface-path-id*] [**show-only**] [**trace-only**] [**vrf** *vrf-name*] [**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* • **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.
show-only	(Optional) Collects only show command information.
terminal	Displays the command output on the terminal.
trace-only	(Optional) Collects only trace information.

vrf	(Optional) Specifies a VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of VRF.
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

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 "Obtaining Documentation and Submitting a Service Request" section on page iii in the Preface for Cisco Technical Support contact information.

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 shows some of the **show tech-support bundles** command output that is displayed for the terminal:

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Please provide the modified sample output for this command as this example contains reference to POS interface.

```
RP/0/RSP0/CPU0:router# show tech-support bundles terminal

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

                           show tech-support bundles

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


----------------------------- show running-config -----------------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
```

```
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
 dot1q vlan 31
!
interface Bundle-POS24
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
interface MgmtEth0/RP1/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.71 255.255.255.0
!
interface GigabitEthernet0/1/5/0
 description Connected to P2_CRS-8 GE 0/1/5/0
 ipv4 address 10.12.16.1 255.255.255.0
!
```

```
interface GigabitEthernet0/1/5/1
 description Connected to P4_C12810 GE 5/2
 ipv4 address 10.14.8.1 255.255.255.0
!
interface GigabitEthernet0/1/5/2
 description Connected to PE6_C12406 GE 0/4/0/1
 ipv4 address 10.16.4.1 255.255.255.0
!
interface GigabitEthernet0/1/5/3
 shutdown
!
interface GigabitEthernet0/1/5/4
 shutdown
!
interface GigabitEthernet0/1/5/5
 shutdown
!
interface GigabitEthernet0/1/5/6
 description Connected to P2_CRS-8 GE 0/1/5/6
 bundle id 28 mode active
!
interface GigabitEthernet0/1/5/7
 description Connected to P2_CRS-8 GE 0/1/5/7
 bundle id 28 mode active
!
interface GigabitEthernet0/6/5/0
 shutdown
!
interface GigabitEthernet0/6/5/1
 description Connected to P2_CRS-8 GE 0/6/5/1
 ipv4 address 10.12.20.1 255.255.255.0
!
interface GigabitEthernet0/6/5/2
 description Connected to PE6_C12406 GE 0/4/0/2
 ipv4 address 10.16.8.1 255.255.255.0
!
interface GigabitEthernet0/6/5/3
 shutdown
!
interface GigabitEthernet0/6/5/4
 shutdown
!
interface GigabitEthernet0/6/5/5
 shutdown
!
interface GigabitEthernet0/6/5/6
 shutdown
!
interface GigabitEthernet0/6/5/7
 description Connected to P2_CRS-8 GE 0/6/5/7
 ipv4 address 10.12.40.1 255.255.255.0
!
interface POS0/1/0/0
 shutdown
!
interface POS0/1/0/1
 description Connected to P2_CRS-8 POS 0/1/0/1
 ipv4 address 10.12.8.1 255.255.255.0
!
interface POS0/1/0/2
 shutdown
!
interface POS0/1/0/3
 shutdown
```

```
!
interface POS0/1/4/0
 description Connected to P2_CRS-8 POS 0/1/4/0
 bundle id 24 mode active
!
interface POS0/1/4/1
 description Connected to P2_CRS-8 POS 0/1/4/1
 bundle id 24 mode active
!
interface POS0/1/4/2
 description Connected to P2_CRS-8 POS 0/1/4/2
 ipv4 address 10.12.32.1 255.255.255.0
 encapsulation ppp
 ppp pap sent-username P1_CRS-8 password encrypted 01100F175804
 ppp authentication chap pap
 ppp chap password encrypted 13061E010803
!
interface POS0/1/4/3
 description Connected to P2_CRS-8 POS 0/1/4/3
 ipv4 address 10.12.32.1 255.255.255.0
 encapsulation ppp
 ppp pap sent-username P1_CRS-8 password encrypted 070C285F4D06
 ppp authentication chap pap
 ppp chap password encrypted 1511021F0725
!
interface POS0/6/0/0
 description Connected to P11_CRS-4 POS 0/2/1/0
 ipv4 address 10.111.4.1 255.255.255.0
!
interface POS0/6/0/1
 description Connected to P2_CRS-8 POS 0/6/0/1
 ipv4 address 10.12.12.1 255.255.255.0
!
interface POS0/6/0/2
 shutdown
!
interface POS0/6/0/3
 description Connected to PE21_C12406 POS 0/2/0/3
 ipv4 address 10.121.4.1 255.255.255.0
!
interface POS0/6/4/0
 shutdown
!
interface POS0/6/4/1
 shutdown
!
interface POS0/6/4/2
 shutdown
!
interface POS0/6/4/3
 shutdown
!
interface POS0/6/4/4
 description Connected to P4_C12810 POS 0/3
 ipv4 address 10.14.4.1 255.255.255.0
!
interface POS0/6/4/5
 description Connected to P2_CRS-8 POS 0/6/4/5
 ipv4 address 10.12.4.1 255.255.255.0
!
interface POS0/6/4/6
 description Connected to P3_C12008 POS 5/2
 ipv4 address 10.13.4.1 255.255.255.0
!
```

```
interface POS0/6/4/7
 description Connected to PE7_C12406 POS 0/5/0/1
 ipv4 address 10.71.4.1 255.255.255.0
!
interface Serial0/1/1/0
 shutdown
!
interface Serial0/1/1/1
 shutdown
!
interface Serial0/1/1/2
 shutdown
!
interface Serial0/1/1/3
 shutdown
!
controller SONET0/1/0/1
 clock source internal
!
controller SONET0/1/4/0
 clock source internal
!
controller SONET0/1/4/1
 clock source internal
!
controller SONET0/1/4/2
 clock source internal
!
controller SONET0/1/4/3
 clock source internal
!
controller SONET0/6/0/0
 clock source internal
!
controller SONET0/6/0/1
 clock source internal
!
controller SONET0/6/0/3
 clock source internal
!
controller SONET0/6/4/4
 clock source internal
!
controller SONET0/6/4/5
 clock source internal
!
controller SONET0/6/4/6
 clock source internal
!
controller SONET0/6/4/7
 clock source internal
!
interface SBC1
 description Connected to DRP CPU0 in slot 4
 ipv4 address 10.75.75.1 255.255.255.0
 service-location preferred-active 0/4/CPU0
!
interface SBC2
 description Connected to DRP CPU1 in slot 4
 ipv4 address 10.50.50.1 255.255.255.0
 service-location preferred-active 0/4/CPU1
!
router static
 address-family ipv4 unicast
```

```
  0.0.0.0/0 172.29.52.1 112
 !
!
router ospf 100
 router-id 10.1.1.1
 nsf cisco
 area 0
  mpls traffic-eng
  interface Bundle-POS24
  !
  interface Loopback0
   passive enable
  !
  interface GigabitEthernet0/1/5/1
  !
  interface GigabitEthernet0/1/5/2
  !
  interface GigabitEthernet0/6/5/1
  !
  interface GigabitEthernet0/6/5/2
!
  interface SBC1
   passive enable
  !
  interface SBC2
   passive enable
  !
 !
 mpls traffic-eng router-id Loopback0
!
mpls oam
!
rsvp
bandwidth
 !
 interface GigabitEthernet0/1/5/2
  bandwidth
 !
 interface GigabitEthernet0/6/5/1
  bandwidth
 !
 interface GigabitEthernet0/6/5/2
  bandwidth
 !
!
mpls traffic-eng
 !
 interface GigabitEthernet0/1/5/2
 !
 interface GigabitEthernet0/6/5/1
 !
 interface GigabitEthernet0/6/5/2
 !
!
mpls ldp
 router-id 10.1.1.1
 log
  neighbor
  graceful-restart
 !
 interface Bundle-POS24
 !
 interface GigabitEthernet0/1/5/1
 !
```

```
 interface GigabitEthernet0/1/5/2
 !
 interface GigabitEthernet0/6/5/1
 !
 interface GigabitEthernet0/6/5/2
!
!
ssh server
xml agent tty
xml agent corba
http server
sbc service-1
 service-location preferred-active 0/4/CPU0
!
sbc service-2
 service-location preferred-active 0/4/CPU1
!
end


---------------------- show process blocked location all ----------------------

node:      node0_1_CPU0
------------------------------------------------------------------
  Jid       Pid Tid             Name State   TimeInState    Blocked-on
   55      8202   1              ksh Reply  114:09:58:0143    8199  devc-ser8250
   51     20503   2          attachd Reply  114:10:03:0745   20501  eth_server
   51     20503   3          attachd Reply  114:10:03:0742    8204  mqueue
   72     20504   6             qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   7             qnet Reply    0:00:00:0001   20501  eth_server
   72     20504   8             qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   9             qnet Reply    0:00:00:0000   20501  eth_server
   52     20508   1          ksh-aux Reply  114:09:58:0360    8199  devc-ser8250
   50     20509   2   attach_server Reply  114:10:03:0515    8204  mqueue
  223     24613   1 reddrv_listener Reply    0:00:02:0217   20501  eth_server
  250     73826   8         spa_t3e3 Reply    0:00:09:0606    8204  mqueue

node:      node0_4_CPU0
------------------------------------------------------------------
65546      8202   1              ksh Reply  114:09:31:0294    8200  devc-conaux
   51     36892   2          attachd Reply  114:09:37:0454   36890  eth_server
   51     36892   3          attachd Reply  114:09:37:0453   12300  mqueue
   73     36893   6             qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   7             qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   8             qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   9             qnet Reply    0:00:00:0000   36890  eth_server
   50     36897   2   attach_server Reply  114:09:37:0414   12300  mqueue
  316     41005   3          reddrv Reply    0:00:00:0188   36890  eth_server
  252    102536   2          lpts_fm Reply  114:05:35:0614  381043  node 0/RP0/Ca

node:      node0_4_CPU1
------------------------------------------------------------------
65546      8202   1              ksh Reply  114:08:40:0256    8200  devc-conaux
   51     36892   2          attachd Reply  114:08:46:0362   36890  eth_server
   51     36892   3          attachd Reply  114:08:46:0361   12301  mqueue
   73     36893   6             qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   7             qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   8             qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   9             qnet Reply    0:00:00:0000   36890  eth_server
   50     36897   2   attach_server Reply  114:08:46:0323   12301  mqueue
  316     41005   3          reddrv Reply    0:00:00:0141   36890  eth_server
  252    110726   2          lpts_fm Reply  114:05:43:0881  381043  node 0/RP0/Ca

node:      node0_6_CPU0
```

```
------------------------------------------------------------------
   55      8202   1             ksh Reply  114:10:03:0567    8199  devc-ser8250
   51     20503   2         attachd Reply  114:10:09:0157   20501  eth_server
   51     20503   3         attachd Reply  114:10:09:0154    8204  mqueue
   72     20504   6            qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   7            qnet Reply    0:00:00:0001   20501  eth_server
   72     20504   8            qnet Reply    0:00:00:0001   20501  eth_server
   72     20504   9            qnet Reply    0:00:00:0001   20501  eth_server
   52     20508   1         ksh-aux Reply  114:10:03:0780    8199  devc-ser8250
   50     20509   2   attach_server Reply  114:10:08:0931    8204  mqueue
  223     24613   1 reddrv_listener Reply    0:00:01:0285   20501  eth_server

node:      node0_RP0_CPU0
------------------------------------------------------------------
65546      8202   1             ksh Reply  114:15:21:0545    8200  devc-conaux
   52     40989   2         attachd Reply  114:15:22:0710   36891  eth_server
   52     40989   3         attachd Reply  114:15:22:0708   12301  mqueue
   78     40991   6            qnet Reply    0:00:00:0026   36891  eth_server
   78     40991   7            qnet Reply    0:00:00:0027   36891  eth_server
   78     40991   8            qnet Reply    0:00:00:0026   36891  eth_server
   78     40991   9            qnet Reply    0:00:00:0027   36891  eth_server
   51     40997   2   attach_server Reply  114:15:22:0461   12301  mqueue
  387    155730   1     tftp_server Reply  114:14:10:0402   12301  mqueue
  211    192609   3          invmgr Reply  114:08:02:0826   41005  node 0/4/CPUv
  211    192609   4          invmgr Reply  114:07:59:0038   41005  node 0/4/CPUv
65643    925803   1            exec Reply    0:00:06:0968       1  kernel
  271    397510   2         lpts_fm Reply    2:23:10:0893  381043  lpts_pa
  264    405735   5       l2vpn_mgr Reply  114:03:49:0301  426229  lspv_server
  285    426236   9      te_control Reply  114:03:34:0062  426229  lspv_server
  282    426237   4        mpls_ldp Reply  114:03:33:0325  426229  lspv_server
65796    966916   1 showtech_helper Reply    0:00:05:0243       1  kernel
65801    971017   1  show_processes Reply    0:00:00:0000       1  kernel

node:      node0_RP1_CPU0
------------------------------------------------------------------
65546      8202   1             ksh Reply  114:15:31:0330    8200  devc-conaux
   52     40989   2         attachd Reply  114:15:31:0955   36891  eth_server
   52     40989   3         attachd Reply  114:15:31:0953   12301  mqueue
   78     40991   6            qnet Reply    0:00:00:0000   36891  eth_server
   78     40991   7            qnet Reply    0:00:00:0000   36891  eth_server
   78     40991   8            qnet Reply    0:00:00:0000   36891  eth_server
   78     40991   9            qnet Reply    0:00:00:0000   36891  eth_server
   51     40997   2   attach_server Reply  114:15:31:0765   12301  mqueue
  349    135223   1       sc_reddrv Reply    0:00:00:0025   36891  eth_server
  172    159809   5          envmon Reply    0:00:00:0001   40994  i2c_server
  387    168018   1     tftp_server Reply  114:07:34:0867   12301  mqueue
  271    233674   2         lpts_fm Reply  114:05:45:0442  381043  node 0/RP0/Ca

------------------------- show context location all --------------------------

node:      node0_1_CPU0
------------------------------------------------------------------

node:      node0_4_CPU0
------------------------------------------------------------------

Crashed pid = 41000 (pkg/bin/dsc)
Crashed tid = 5
Crash time: Mon Oct 15, 2007: 04:54:16
Core for process at harddisk:/dumper/dsc.node0_4_CPU0.ppc.Z

    Stack Trace
#0 0xfc1e6d90
#1 0xfc1e6d88
```

```
#2 0xfc1e53a0
#3 0xfc1e826c
#4 0xfc16b0c8
#5 0xfc16a7e4
#6 0xfc16a324
#7 0xfc16e7a8
#8 0xfc16ea08
#9 0x48200e20
                Registers info
            r0       r1       r2       r3
  R0   00000000  4811bc50  48215204  00000000
            r4       r5       r6       r7
  R4   00000000  00000002  00000000  00000000
            r8       r9      r10      r11
  R8   00000000  ffffffff  00000000  00000000
           r12      r13      r14      r15
  R12  ee6b2800  48215170  00000000  00000000
           r16      r17      r18      r19
  R16  00000000  00000000  00000000  00000000
           r20      r21      r22      r23
  R20  fc250000  fc16b0c8  4811be6c  fc250000
           r24      r25      r26      r27
  R24  00000000  fc24a184  00000005  fc22d628
           r28      r29      r30      r31
  R28  fc1e826c  fc24a580  0000a028  00000019
           cnt       lr      msr       pc
  R32  fc1e72b4  fc1e6d88  0000d932  fc1e6d90
           cnd      xer
  R36  28000024  20000001

                      DLL Info
DLL path    Text addr.  Text size   Data addr. Data size   Version
/hfr-os-3.6.0.16I/lib/libinfra.dll  0xfc15a000  0x000397b0  0xfc194000  0x000000
/hfr-os-3.6.0.16I/lib/libc.dll  0xfc1ce000  0x0007b6e0  0xfc24a000  0x00002000 0
```

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 [**vrf** *vrf-name* [**ipv4** | **ipv6** | **mpls**] [**A.B.C.D** | **A.B.C.D/length** | **detail** | **brief** | **interface** | **rack**]] [**file** *send-to*] [**compress**] [**location** *node-id*] {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

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.
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*
compress	(Optional) Specifies compression for the trace file.
interface	(Optional) Specifies CEF interface status and configuration.
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.
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.
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.

Defaults

IPv4 is the default.
The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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

Examples

The following example shows some of the **show tech-support cef** command output:

```
RP/0/RP0/CPU0:router# show tech-support cef terminal page

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

                        show tech-support cef ipv4 brief

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


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


Cisco IOS XR Software, Version 3.8.0
Copyright (c) 2007 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.43(20061109:045749) [CRS-1 ROMMON],

CRS-1 uptime is 1 week, 2 days, 20 hours, 29 minutes
System image file is "disk0:hfr-os-mbi-3.5/mbihfr-rp.vm"
```

```
cisco CRS-1/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2

16 GigabitEthernet/IEEE 802.3 interface(s)
4 Ethernet/IEEE 802.3 interface(s)
20 Packet over SONET/SDH network interface(s)
20 SONET/SDH Port controller(s)
2043k 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 3.8.0, Cisco Systems, at disk0:hfr-sbc-3.8.0
    Built on Thu Mar 15 01:47:29 UTC 2007
    By cisco.com in /file/3.8.0

hfr-pagent, V 3.8.0, Cisco Systems, at disk0:hfr-pagent-3.8.0
    Built on Thu Mar 15 02:27:23 UTC 2007
By cisco.com in /file/3.8.0

hfr-fpd, V 3.8.0, Cisco Systems, at disk0:hfr-fpd-3.8.0
    Built on Thu Mar 15 01:32:22 UTC 2007
By cisco.com in /file/3.8.0
.
.
.
hfr-os-mbi, V 3.8.0, Cisco Systems, at disk0:hfr-os-mbi-3.8.0
    Built on Thu Mar 15 00:18:08 UTC 2007
    By cisco.com in /file/3.8.0


-------------------------------- show running --------------------------------

!! Last configuration change at Fri Mar 23 18:03:27 2007 by user_a
!
hostname CRS-1
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.16.52.72
domain ipv4 host p2 172.16.52.77
domain ipv4 host ce6 172.16.52.73
domain ipv4 host ce7 172.16.52.78
domain ipv4 host pe6 172.16.52.128
domain ipv4 host pe7 172.16.52.182
domain ipv4 host pe11 172.16.52.83
domain lookup disable
vty-pool default 0 25
ipv4 virtual address 172.16.52.72 255.255.255.0
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to aaa LAN
```

```
 ipv4 address 172.16.52.70 255.255.255.0
!
interface MgmtEth0/RP1/CPU0/0
 description Connected to aaa LAN
 ipv4 address 172.16.52.71 255.255.255.0
!
router static
 address-family ipv4 unicast
  0.0.0.0/0 172.29.52.1 200
 !
!
mpls ldp
 router-id 10.1.1.1
 log
  neighbor
  graceful-restart
 !
 interface GigabitEthernet0/1/5/1
 !
 interface GigabitEthernet0/1/5/2
 !
 interface POS0/1/0/1
 !
!
ssh server
xml agent tty
xml agent corba
http server
sbc service-1
 service-location preferred-active 0/4/CPU0
!
sbc service-2
 service-location preferred-active 0/4/CPU1
!
end


--------------------------- show route ipv4 unicast ---------------------------


% No matching routes found


------------------------------ show proc blocked ------------------------------


Location: 0/1/CPU0

  Jid       Pid Tid             Name State   TimeInState    Blocked-on
   55      8202   1              ksh Reply  236:24:17:0421    8199  devc-ser8250
   51     16407   2          attachd Reply  236:24:24:0686   16405  eth_server
   51     16407   3          attachd Reply  236:24:24:0684    8204  mqueue
   72     16408   6             qnet Reply    0:00:00:0001   16405  eth_server
   72     16408   7             qnet Reply    0:00:00:0000   16405  eth_server
    72     16408   8             qnet Reply    0:00:00:0001   16405  eth_server
   72     16408   9             qnet Reply    0:00:00:0000   16405  eth_server
   52     16412   1          ksh-aux Reply  236:24:19:0271    8199  devc-ser8250
   50     16413   2   attach_server Reply  236:24:24:0493    8204  mqueue
  218     20516   1 reddrv_listener Reply    0:00:04:0086   16405  eth_server
```

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 {**file** *send-to* [**background**] [**compressed** | **uncompressed**] | **terminal** [**page**]}

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.
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.

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 "Obtaining Documentation and Submitting a Service Request" section on page iii in the Preface for Cisco Technical Support contact information.

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 cfgmgr** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support cfgmgr terminal
```

Please provide the modified sample output for this command as this example contains reference to POS interface.

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

                          show tech-support cfgmgr

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


-------------------------------- show platform --------------------------------
Node            Type            PLIM            State           Config State
-------------------------------------------------------------------------------
0/1/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/1/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/1/1           MSC(SPA)        4T3E3           OK              PWR,NSHUT,MON
0/1/4           MSC(SPA)        4XOC48-POS      OK              PWR,NSHUT,MON
0/1/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/4/CPU0        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
0/4/CPU1        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
0/6/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/6/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/6/4           MSC(SPA)        8XOC3/OC12-POS  OK              PWR,NSHUT,MON
0/6/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/RP0/CPU0      RP(Active)      N/A             IOS XR RUN      PWR,NSHUT,MON
0/RP1/CPU0      RP(Standby)     N/A             IOS XR RUN      PWR,NSHUT,MON

---------------------------- show running-config -----------------------------
```

```
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
```

```
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
 dot1q vlan 31
!
interface Bundle-POS24
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
interface MgmtEth0/RP1/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.71 255.255.255.0
!
interface GigabitEthernet0/1/5/0
 description Connected to P2_CRS-8 GE 0/1/5/0
 ipv4 address 10.12.16.1 255.255.255.0
!
interface GigabitEthernet0/1/5/1
 description Connected to P4_C12810 GE 5/2
 ipv4 address 10.14.8.1 255.255.255.0
!
interface GigabitEthernet0/1/5/2
 description Connected to PE6_C12406 GE 0/4/0/1
 ipv4 address 10.16.4.1 255.255.255.0
!
interface GigabitEthernet0/1/5/3
 shutdown
!
interface GigabitEthernet0/1/5/4
 shutdown
!
```

```
interface GigabitEthernet0/1/5/5
 shutdown
!
interface GigabitEthernet0/1/5/6
 description Connected to P2_CRS-8 GE 0/1/5/6
 bundle id 28 mode active
!
interface GigabitEthernet0/1/5/7
 description Connected to P2_CRS-8 GE 0/1/5/7
 bundle id 28 mode active
!
interface GigabitEthernet0/6/5/0
 shutdown
!
interface GigabitEthernet0/6/5/1
 description Connected to P2_CRS-8 GE 0/6/5/1
 ipv4 address 10.12.20.1 255.255.255.0
!
interface GigabitEthernet0/6/5/2
 description Connected to PE6_C12406 GE 0/4/0/2
 ipv4 address 10.16.8.1 255.255.255.0
!
interface GigabitEthernet0/6/5/3
 shutdown
!
interface GigabitEthernet0/6/5/4
 shutdown
!
interface GigabitEthernet0/6/5/5
 shutdown
!
interface GigabitEthernet0/6/5/6
 shutdown
!
interface GigabitEthernet0/6/5/7
 description Connected to P2_CRS-8 GE 0/6/5/7
 ipv4 address 10.12.40.1 255.255.255.0
!
interface POS0/1/0/0
 shutdown
!
interface POS0/1/0/1
 description Connected to P2_CRS-8 POS 0/1/0/1
 ipv4 address 10.12.8.1 255.255.255.0
!
interface POS0/1/0/2
 shutdown
!
interface POS0/1/0/3
 shutdown
!
interface POS0/1/4/0
 description Connected to P2_CRS-8 POS 0/1/4/0
 bundle id 24 mode active
!
interface POS0/1/4/1
 description Connected to P2_CRS-8 POS 0/1/4/1
 bundle id 24 mode active
!
interface POS0/1/4/2
 description Connected to P2_CRS-8 POS 0/1/4/2
 ipv4 address 10.12.32.1 255.255.255.0
 encapsulation ppp
 ppp pap sent-username P1_CRS-8 password encrypted 01100F175804
```

```
 ppp authentication chap pap
 ppp chap password encrypted 13061E010803
!
interface POS0/1/4/3
 description Connected to P2_CRS-8 POS 0/1/4/3
 ipv4 address 10.12.32.1 255.255.255.0
 encapsulation ppp
 ppp pap sent-username P1_CRS-8 password encrypted 070C285F4D06
 ppp authentication chap pap
 ppp chap password encrypted 1511021F0725
!
interface POS0/6/0/0
 description Connected to P11_CRS-4 POS 0/2/1/0
 ipv4 address 10.111.4.1 255.255.255.0
!
interface POS0/6/0/1
 description Connected to P2_CRS-8 POS 0/6/0/1
 ipv4 address 10.12.12.1 255.255.255.0
!
interface POS0/6/0/2
 shutdown
!
interface POS0/6/0/3
 description Connected to PE21_C12406 POS 0/2/0/3
 ipv4 address 10.121.4.1 255.255.255.0
!
interface POS0/6/4/0
 shutdown
!
interface POS0/6/4/1
 shutdown
!
interface POS0/6/4/2
 shutdown
!
interface POS0/6/4/3
 shutdown
!
interface POS0/6/4/4
 description Connected to P4_C12810 POS 0/3
 ipv4 address 10.14.4.1 255.255.255.0
!
interface POS0/6/4/5
 description Connected to P2_CRS-8 POS 0/6/4/5
 ipv4 address 10.12.4.1 255.255.255.0
!
interface POS0/6/4/6
 description Connected to P3_C12008 POS 5/2
 ipv4 address 10.13.4.1 255.255.255.0
!
interface POS0/6/4/7
 description Connected to PE7_C12406 POS 0/5/0/1
 ipv4 address 10.71.4.1 255.255.255.0
!
interface Serial0/1/1/0
 shutdown
!
interface Serial0/1/1/1
 shutdown
!
interface Serial0/1/1/2
 shutdown
!
interface Serial0/1/1/3
```

```
 shutdown
!
controller SONET0/1/0/1
 clock source internal
!
controller SONET0/1/4/0
 clock source internal
!
controller SONET0/1/4/1
 clock source internal
!
controller SONET0/1/4/2
 clock source internal
!
controller SONET0/1/4/3
 clock source internal
!
controller SONET0/6/0/0
 clock source internal
!
controller SONET0/6/0/1
 clock source internal
!
controller SONET0/6/0/3
 clock source internal
!
controller SONET0/6/4/4
 clock source internal
!
controller SONET0/6/4/5
 clock source internal
!
controller SONET0/6/4/6
 clock source internal
!
controller SONET0/6/4/7
 clock source internal
!
interface SBC1
 description Connected to DRP CPU0 in slot 4
 ipv4 address 10.75.75.1 255.255.255.0
 service-location preferred-active 0/4/CPU0
!
interface SBC2
 description Connected to DRP CPU1 in slot 4
 ipv4 address 10.50.50.1 255.255.255.0
 service-location preferred-active 0/4/CPU1
!
router static
 address-family ipv4 unicast
  0.0.0.0/0 172.29.52.1 112
 !
!
router ospf 100
 router-id 10.1.1.1
 nsf cisco
 area 0
  mpls traffic-eng
  interface Bundle-POS24
  !
  interface Loopback0
   passive enable
  !
  interface GigabitEthernet0/1/5/1
```

```
  !
  interface GigabitEthernet0/1/5/2
  !
  interface GigabitEthernet0/6/5/1
  !
  interface GigabitEthernet0/6/5/2
  !
  interface POS0/1/0/1
  !
  interface POS0/6/0/0
  !
  interface POS0/6/0/1
  !
  interface POS0/6/0/3
  !
  interface POS0/6/4/4
  !
  interface POS0/6/4/6
  !
  interface POS0/6/4/7
  !
  interface SBC1
   passive enable
  !
  interface SBC2
   passive enable
  !
 !
 mpls traffic-eng router-id Loopback0
!
mpls oam
!
rsvp
 interface POS0/6/0/1
  bandwidth
 !
 interface POS0/6/0/3
  bandwidth
 !
 interface POS0/6/4/7
  bandwidth
 !
 interface GigabitEthernet0/1/5/2
  bandwidth
 !
 interface GigabitEthernet0/6/5/1
  bandwidth
 !
 interface GigabitEthernet0/6/5/2
  bandwidth
 !
!
mpls traffic-eng
 interface POS0/6/0/1
 !
 interface POS0/6/0/3
 !
 interface POS0/6/4/7
 !
 interface GigabitEthernet0/1/5/2
 !
 interface GigabitEthernet0/6/5/1
 !
 interface GigabitEthernet0/6/5/2
```

```
 !
!
mpls ldp
 router-id 10.1.1.1
 log
  neighbor
  graceful-restart
 !
 interface Bundle-POS24
 !
 interface GigabitEthernet0/1/5/1
 !
 interface GigabitEthernet0/1/5/2
 !
 interface GigabitEthernet0/6/5/1
 !
 interface GigabitEthernet0/6/5/2
 !
 interface POS0/1/0/1
 !
 interface POS0/6/0/0
 !
 interface POS0/6/0/1
 !
 interface POS0/6/0/3
 !
 interface POS0/6/4/4
 !
 interface POS0/6/4/6
 !
 interface POS0/6/4/7
 !
!
ssh server
xml agent tty
xml agent corba
http server
sbc service-1
 service-location preferred-active 0/4/CPU0
!
sbc service-2
 service-location preferred-active 0/4/CPU1
!
end


---------------------- show configuration failed startup ----------------------
!!10:28:35 UTC Thu Oct 11 2007
```

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 Administration EXEC mode.

show tech-support control-ethernet [**location** *node-id*] {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following 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.

Defaults

The command output is not compressed.

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 hfr**
- **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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

The **show tech-support control-ethernet** command also generates log files which are not listed. See the command output for log file information.

Task ID

Task ID	Operations
admin	read

Examples

The following example shows some of the **show tech-support control-ethernet** command output:

```
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/RP0/CPU0

Node - 0/RP1/CPU0

Node - 0/SM0/SP

Node - 0/SM1/SP

Node - 0/SM2/SP

Node - 0/SM3/SP


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

show tech-support control-ethernet

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


------------------ show version ---------------------------------
```

```
Cisco IOS XR Software, Version 3.8.0.20I[DT_IMAGE]
Copyright (c) 2008 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.51(20080807:092259) [CRS-1 ROMMON],

P2_CRS-8 uptime is 1 day, 18 hours, 10 minutes
System image file is "bootflash:disk0/hfr-os-mbi-3.8.0.20I/mbihfr-rp.vm"

cisco CRS-8/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2

4 Management Ethernet
16 GigabitEthernet
20 SONET/SDH
20 Packet over SONET/SDH
1019k bytes of non-volatile configuration memory.
1000592k bytes of disk0: (Sector size 512 bytes).
1000640k bytes of disk1: (Sector size 512 bytes).

Boot device on node 0/1/SP is bootflash:
Package active on node 0/1/SP:
hfr-pagent, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-pagent-3.8.0.20I
Built on Wed Oct 29 17:24:33 DST 2008
By iox13.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-fpd, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fpd-3.8.0.20I
Built on Wed Oct 29 17:02:19 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-diags, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-diags-3.8.0.20I
Built on Wed Oct 29 17:02:01 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-admin, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-admin-3.8.0.20I
Built on Wed Oct 29 16:08:13 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-base, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-base-3.8.0.20I
Built on Wed Oct 29 16:07:35 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-os-mbi, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-os-mbi-3.8.0.20I
Built on Wed Oct 29 15:45:48 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

Configuration register on node 0/1/CPU0 is 0x102
Boot device on node 0/1/CPU0 is mem:
Package active on node 0/1/CPU0:
hfr-services, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-services-3.8.0I
Built on Wed Oct 29 17:03:08 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-pagent, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-pagent-3.8.0.20I
Built on Wed Oct 29 17:24:33 DST 2008
By iox13.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-fpd, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fpd-3.8.0.20I
Built on Wed Oct 29 17:02:19 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

hfr-diags, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-diags-3.8.0.20I
Built on Wed Oct 29 17:02:01 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0
```

```
hfr-mcast, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mcast-3.8.0.20I
Built on Wed Oct 29 18:18:37 DST 2008
By iox22.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-mpls, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mpls-3.8.0.20I
Built on Wed Oct 29 18:18:25 DST 2008
By iox22.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-lc, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-lc-3.8.0.20I
Built on Wed Oct 29 16:18:36 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-fwdg, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fwdg-3.8.0.20I
Built on Wed Oct 29 16:13:27 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

--More--
```

show tech-support fabric

To automatically run **show** commands that display information specific to fabric debugging, use the **show tech-support fabric** command in Administration EXEC mode.

show tech-support fabric [terminal | file *send-to*]

Syntax Description

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*

Defaults

The command output is not compressed.

Command Modes

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 [**location** *node-id*] {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following 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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 install

To automatically run **show** commands that display information specific to installation information, use the **show tech-support install** command in the EXEC and administration EXEC modes.

show tech-support install [**file** *send-to*] [**location** *node-id*]

Syntax Description

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*
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

Output is logged to the terminal screen.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services or cisco-support	read
pkg-mgmt	read

show tech-support l2tp

To automatically run **show** commands that display information specific to Layer 2 Tunnel Protocol (L2TP) technical support, use the **show tech-support l2tp** command in EXEC mode.

show tech-support l2tp {**file** *send-to* [**background**] [**compressed** | **uncompressed**] | **terminal** [**page**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **disk0:***filename* • **disk0a:***filename* • **disk1:***filename* • **disk1a:***filename* • **ftp:***filename* • **harddisk:***filename* • **harddiska:***filename* • **harddiskb:***filename* • **nvram:***filename* • **rcp:***filename* • **tftp:***filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command collects relevant data for Layer 2 tunneling protocol-related issues that can be useful for Cisco Technical Support representatives when troubleshooting a router. See "Obtaining Documentation and Submitting a Service Request" section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support l2tp** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support l2tp terminal page

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

          show tech-support l2tp (Detailed output with event traces)

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


------------------------- show l2tp session detail --------------------------


-------------------------- show l2tp tunnel detail --------------------------


---------------------------- show l2tp internal -----------------------------
L2TP Internal information:
  L2X information:
    Rx high water mark      : 0
```

```
    Ave msg process usecs   : 0
    Num rx messages         : 0
    Num tx messages         : 0
    Num reordered msgs      : 0
    Max reorder deviation   : 0
    Num ooo msgs            : 0
    Num rx path drops       : 0
    Num rx q overflow drops : 0
    Num buffered msgs       : 0
  L2TUN information:
    Ave msg process usecs   : 0
    Num rx messages         : 1
    Num tx messages         : 1

---------------------- show l2tp counters control tunnel ----------------------
Global L2TP tunnel control message statistics:

                  XMIT       RE-XMIT          RCVD          DROP
              ==========   ==========   ==========   ==========
ZLB                    0            0            0            0
SCCRQ                  0            0            0            0
SCCRP                  0            0            0            0
SCCCN                  0            0            0            0
StopCCN                0            0            0            0
Hello                  0            0            0            0
OCRQ                   0            0            0            0
OCRP                   0            0            0            0
OCCN                   0            0            0            0
ICRQ                   0            0            0            0
ICRP                   0            0            0            0
ICCN                   0            0            0            0
CDN                    0            0            0            0
WEN                    0            0            0            0
SLI                    0            0            0            0
EXP ACK                0            0            0            0
FSQ                    0            0            0            0
FSR                    0            0            0            0
SRRQ                   0            0            0            0
SRRP                   0            0            0            0
CiscoACK               0            0            0            0
Total                  0            0            0            0


-------------------- show l2tp counters control tunnel all --------------------


-------------- show l2tp counters control tunnel authentication ---------------
 L2TPv3 Tunnel Authentication Statistics:

------------ show l2tp counters control session fsm state current -------------

Current State   Count
======================
Init            -
Idle            -
Wt-Sock         -
Wt-CC           -
Proc-ICRQ       -
Wt-Rx-ICCN      -
Proc-ICCN       -
Wt-Tx-ICRQ      -
Wt-Tx-ICRP      -
Wt-Tx-ICCN      -
Wt-Rx-ICRP      -
```

```
Proc-ICRP       -
established     -
Dead            -

----------- show l2tp counters control session fsm state transition -----------

Old State                     New State

           Idle   Wt   Wt Proc   Wt Proc   Wt   Wt   Wt   Wt Proc esta Dead
 --More-- Building configuration...
                Sock   CC ICRQ   Rx ICCN   Tx   Tx   Tx   Rx ICRP
                              ICCN      ICRQ ICRP ICCN ICRP
         ================================================================
Init          -    -    -    -    -    -    -    -    -    -    -    -    -
Idle          -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Sock       -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-CC         -    -    -    -    -    -    -    -    -    -    -    -    -
Proc-ICRQ     -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Rx-ICCN    -    -    -    -    -    -    -    -    -    -    -    -    -
Proc-ICCN     -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Tx-ICRQ    -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Tx-ICRP    -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Tx-ICCN    -    -    -    -    -    -    -    -    -    -    -    -    -
Wt-Rx-ICRP    -    -    -    -    -    -    -    -    -    -    -    -    -
Proc-ICRP     -    -    -    -    -    -    -    -    -    -    -    -    -
establishe    -    -    -    -    -    -    -    -    -    -    -    -    -
Dead          -    -    -    -    -    -    -    -    -    -    -    -    -

---------------- show l2tp counters control session fsm event -----------------

Event                       State event occurred in

           Idle   Wt   Wt Proc   Wt Proc   Wt   Wt   Wt   Wt Proc esta Dead
                Sock   CC ICRQ   Rx ICCN   Tx   Tx   Tx   Rx ICRP
                              ICCN      ICRQ ICRP ICCN ICRP
         ================================================================
Invalid       -    -    -    -    -    -    -    -    -    -    -    -    -
CC-Up         -    -    -    -    -    -    -    -    -    -    -    -    -
CC-Down       -    -    -    -    -    -    -    -    -    -    -    -    -
Sock-Ready    -    -    -    -    -    -    -    -    -    -    -    -    -
Sock-Down     -    -    -    -    -    -    -    -    -    -    -    -    -
Sock-Error    -    -    -    -    -    -    -    -    -    -    -    -    -
App-Conn      -    -    -    -    -    -    -    -    -    -    -    -    -
App-Disc      -    -    -    -    -    -    -    -    -    -    -    -    -
Local-Cont    -    -    -    -    -    -    -    -    -    -    -    -    -
Local-Up      -    -    -    -    -    -    -    -    -    -    -    -    -
Local-Down    -    -    -    -    -    -    -    -    -    -    -    -    -
DP-Setup      -    -    -    -    -    -    -    -    -    -    -    -    -
Rx-ICRQ       -    -    -    -    -    -    -    -    -    -    -    -    -
ICRQ-OK       -    -    -    -    -    -    -    -    -    -    -    -    -
ICRQ-ERR      -    -    -    -    -    -    -    -    -    -    -    -    -
Rx-ICRP       -    -    -    -    -    -    -    -    -    -    -    -    -
ICRP-OK       -    -    -    -    -    -    -    -    -    -    -    -    -
ICRP-ERR      -    -    -    -    -    -    -    -    -    -    -    -    -
Rx-ICCN       -    -    -    -    -    -    -    -    -    -    -    -    -
ICCN-OK       -    -    -    -    -    -    -    -    -    -    -    -    -
ICCN-ERR      -    -    -    -    -    -    -    -    -    -    -    -    -
Rx-CDN        -    -    -    -    -    -    -    -    -    -    -    -    -
Establishe    -    -    -    -    -    -    -    -    -    -    -    -    -
Shut          -    -    -    -    -    -    -    -    -    -    -    -    -
Destroy       -    -    -    -    -    -    -    -    -    -    -    -    -

--------------------------- show processes l2tp_mgr ---------------------------
                Job Id: 263
```

```
                  PID: 405734
       Executable path: /disk0/hfr-fwdg-3.6.0.16I/bin/l2tp_mgr
            Instance #: 1
            Version ID: 00.00.0000
               Respawn: ON
         Respawn count: 1
Max. spawns per minute: 12
          Last started: Thu Oct 11 19:25:05 2007
         Process state: Run
         Package state: Normal
                  core: TEXT SHAREDMEM MAINMEM
              Max. core: 0
                 Level: 999
             Placement: ON
          startup_path: /pkg/startup/l2tp.startup
```

show tech-support l2vpn

To automatically run **show** commands that display information specific to Layer 2 Virtual Private Network (L2VPN) debugging, use the **show tech-support l2vpn** command in EXEC mode.

Reviewers: Please provide a more detailed command description.

show tech-support l2vpn {**file** *send-to* [**background**] [**compressed** | **uncompressed**] | **terminal** [**page**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **disk0:***filename* • **disk0a:***filename* • **disk1:***filename* • **disk1a:***filename* • **ftp:***filename* • **harddisk:***filename* • **harddiska:***filename* • **harddiskb:***filename* • **nvram:***filename* • **rcp:***filename* • **tftp:***filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 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**] | **terminal** [**page**] | **location** {*node-id* | **all**}}

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.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 mpls bfd

To automatically run **show** commands that display information specific to Multiprotocol Label Switching (MPLS) Bidirectional Forwarding Detection (BFD) debugging, use the **show tech-support mpls bfd** command in EXEC mode.

Reviewers: Is this command still supported?

show tech-support mpls bfd {**file** *send-to* [**background**] [**compressed** | **uncompressed**] | **terminal** [**page**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **disk0:***filename* • **disk0a:***filename* • **disk1:***filename* • **disk1a:***filename* • **ftp:***filename* • **harddisk:***filename* • **harddiska:***filename* • **harddiskb:***filename* • **nvram:***filename* • **rcp:***filename* • **tftp:***filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 BFD 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 mpls bfd** command output that is displayed for the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support mpls bfd terminal page

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

               show tech-support bfd (Detail with Event traces)

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


------------------------------ show bfd session -------------------------------

---------------------------------- show bfd ------------------------------------
IPV4 Sessions Up: 0, Down: 0, Total: 0

-------------------------- show memory heap fail all --------------------------

---------------------- show memory summary location all ----------------------

node:      node0_1_CPU0
------------------------------------------------------------------
Physical Memory: 2048M total
```

```
 Application Memory : 1887M (1248M available)
 Image: 16M (bootram: 16M)
 Reserved: 144M, IOMem: 2028M, flashfsys: 0
 Total shared window: 77M

node:      node0_4_CPU0
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3818M (3260M available)
 Image: 21M (bootram: 21M)
 Reserved: 256M, IOMem: 2028M, flashfsys: 0
 Total shared window: 22M

node:      node0_4_CPU1
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3818M (3264M available)
 Image: 21M (bootram: 21M)
 Reserved: 256M, IOMem: 2028M, flashfsys: 0
 Total shared window: 22M

node:      node0_6_CPU0
------------------------------------------------------------------
Physical Memory: 2048M total
 Application Memory : 1887M (1261M available)
 Image: 16M (bootram: 16M)
 Reserved: 144M, IOMem: 2028M, flashfsys: 0
 Total shared window: 77M

node:      node0_RP0_CPU0
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3815M (2982M available)
 Image: 24M (bootram: 24M)
 Reserved: 256M, IOMem: 2028M, flashfsys: 0
 Total shared window: 21M

node:      node0_RP1_CPU0
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3815M (3085M available)
 Image: 24M (bootram: 24M)
 Reserved: 256M, IOMem: 2028M, flashfsys: 0
 Total shared window: 22M

---------------------- show process blocked location all ----------------------

node:      node0_1_CPU0
------------------------------------------------------------------
  Jid       Pid Tid            Name State   TimeInState    Blocked-on
   55      8202   1             ksh Reply  117:27:22:0334    8199  devc-ser8250
   51     20503   2         attachd Reply  117:27:27:0950   20501  eth_server
   51     20503   3         attachd Reply  117:27:27:0947    8204  mqueue
   72     20504   6            qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   7            qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   8            qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   9            qnet Reply    0:00:00:0000   20501  eth_server
   52     20508   1         ksh-aux Reply  117:27:22:0566    8199  devc-ser8250
   50     20509   2   attach_server Reply  117:27:27:0721    8204  mqueue
  223     24613   1 reddrv_listener Reply    0:00:04:0142   20501  eth_server
  250     73826   8        spa_t3e3 Reply    0:00:05:0631    8204  mqueue

node:      node0_4_CPU0
------------------------------------------------------------------
```

```
65546      8202   1             ksh Reply  117:26:55:0611    8200  devc-conaux
   51     36892   2         attachd Reply  117:27:01:0768   36890  eth_server
   51     36892   3         attachd Reply  117:27:01:0767   12300  mqueue
   73     36893   6            qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   7            qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   8            qnet Reply    0:00:00:0000   36890  eth_server
   73     36893   9            qnet Reply    0:00:00:0000   36890  eth_server
   50     36897   2   attach_server Reply  117:27:01:0725   12300  mqueue
  316     41005   3          reddrv Reply    0:00:00:0163   36890  eth_server
  252    102536   2         lpts_fm Reply  117:22:59:0913  381043  node 0/RP0/Ca

node:      node0_4_CPU1
------------------------------------------------------------------
65546      8202   1             ksh Reply  117:26:04:0564    8200  devc-conaux
   51     36892   2         attachd Reply  117:26:10:0671   36890  eth_server
   51     36892   3         attachd Reply  117:26:10:0670   12301  mqueue
   73     36893   6            qnet Reply    0:00:00:0001   36890  eth_server
   73     36893   7            qnet Reply    0:00:00:0001   36890  eth_server
   73     36893   8            qnet Reply    0:00:00:0001   36890  eth_server
   73     36893   9            qnet Reply    0:00:00:0001   36890  eth_server
   50     36897   2   attach_server Reply  117:26:10:0630   12301  mqueue
  316     41005   3          reddrv Reply    0:00:00:0081   36890  eth_server
  252    110726   2         lpts_fm Reply  117:23:08:0162  381043  node 0/RP0/Ca

node:      node0_6_CPU0
------------------------------------------------------------------
   55      8202   1             ksh Reply  117:27:27:0706    8199  devc-ser8250
   51     20503   2         attachd Reply  117:27:33:0291   20501  eth_server
   51     20503   3         attachd Reply  117:27:33:0288    8204  mqueue
   72     20504   6            qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   7            qnet Reply    0:00:00:0001   20501  eth_server
   72     20504   8            qnet Reply    0:00:00:0000   20501  eth_server
   72     20504   9            qnet Reply    0:00:00:0000   20501  eth_server
   52     20508   1         ksh-aux Reply  117:27:27:0909    8199  devc-ser8250
   50     20509   2   attach_server Reply  117:27:33:0059    8204  mqueue
  223     24613   1 reddrv_listener Reply    0:00:03:0126   20501  eth_server

node:      node0_RP0_CPU0
------------------------------------------------------------------
65546      8202   1             ksh Reply  117:32:45:0754    8200  devc-conaux
   52     40989   2         attachd Reply  117:32:46:0917   36891  eth_server
   52     40989   3         attachd Reply  117:32:46:0915   12301  mqueue
   78     40991   6            qnet Reply    0:00:00:0025   36891  eth_server
   78     40991   7            qnet Reply    0:00:00:0025   36891  eth_server
   78     40991   8            qnet Reply    0:00:00:0025   36891  eth_server
   78     40991   9            qnet Reply    0:00:00:0024   36891  eth_server
   51     40997   2   attach_server Reply  117:32:46:0671   12301  mqueue
  387    155730   1     tftp_server Reply  117:31:34:0611   12301  mqueue
  211    192609   3          invmgr Reply  117:25:27:0033   41005  node 0/4/CPUv
  211    192609   4          invmgr Reply  117:25:23:0245   41005  node 0/4/CPUv
65643    925803   1            exec Reply    0:00:08:0392       1  kernel
  271    397510   2         lpts_fm Reply    1:39:57:0588  381043  lpts_pa
65741   2019533   1            more Reply    0:00:00:0202  397499  devc-vty
  264    405735   5       l2vpn_mgr Reply  117:21:13:0505  426229  lspv_server
  285    426236   9      te_control Reply  117:20:58:0261  426229  lspv_server
  282    426237   4        mpls_ldp Reply  117:20:57:0524  426229  lspv_server
65801   2113801   1 showtech_helper Reply    0:00:05:0167       1  kernel
65802   2117898   1  show_processes Reply    0:00:00:0000       1  kernel

node:      node0_RP1_CPU0
------------------------------------------------------------------
65546      8202   1             ksh Reply  117:32:55:0556    8200  devc-conaux
   52     40989   2         attachd Reply  117:32:56:0179   36891  eth_server
   52     40989   3         attachd Reply  117:32:56:0177   12301  mqueue
```

```
78      40991   6           qnet Reply    0:00:00:0000   36891  eth_server
78      40991   7           qnet Reply    0:00:00:0000   36891  eth_server
78      40991   8           qnet Reply    0:00:00:0000   36891  eth_server
```

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**] | **terminal** [**page**] | **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.
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.
location	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced in the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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

Examples

The following example shows some of the **show tech-support mpls ldp** command output that is displayed for the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support mpls ldp terminal page

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

             show tech-support mpls ldp (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, 21 hours, 43 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
```

tshow 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**]}

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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read
mpls-te or ouni	read

Examples

The following example shows some of the **show tech-support mpls rsvp** command output:

```
RP/0/RP0/CPU0:router# show tech-support mpls rsvp terminal page

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

            show tech-support mpls rsvp (Detail with Event traces)

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


------------------------- show rsvp interface detail -------------------------
INTERFACE: POS0/1/0/0 (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*]

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.
forwarding	(Optional) Displays forwarding information for a tunnel.
tunnel-name	(Optional) Displays the tunnel name that is used by the RSVP process.
tunnel name	(Optional) Name for the tunnel.
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.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 [**group** *group-address*] {**terminal** [**page**] | **file** *send-to*} [**background** | **compressed** | **uncompressed**] [**source** *source address*] [**location** *node-id*] [**vrf** *vrf-name*]

Syntax Description

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.
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).
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* • **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	(Optional) Specifies a node.
node-id	(Optional) Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

vrf	(Optional) Specifies a VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of VRF.

Defaults

Output is logged to the terminal screen.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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

Examples

The following example shows some of the **show tech-support multicast** command output:

```
RP/0/RSP0/CPU0:router# show tech-support multicast page

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

                    show tech-support multicast location all

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



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


Cisco IOS XR Software, Version 3.8.0
Copyright (c) 2007 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.43(20061109:045749) [CRS-1 ROMMON],

CRS-1 uptime is 1 week, 4 days, 19 hours, 57 minutes
System image file is "disk0:hfr-os-mbi-3.8.0/mbihfr-rp.vm"

cisco CRS-1/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2

16 GigabitEthernet/IEEE 802.3 interface(s)
4 Ethernet/IEEE 802.3 interface(s)
20 Packet over SONET/SDH network interface(s)
20 SONET/SDH Port controller(s)
2043k 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 3.8.0, Cisco Systems, at disk0:hfr-sbc-3.8.0
    Built on Thu Mar 15 10:47:29 DST 2007
    By cisco.com in /auto/3.8.0
.
.
.
-------------------------- show ip interface brief --------------------------


Interface                      IP-Address      Status                Protocol
```

```
Loopback0                      10.1.1.1        Up                Up
SBC1                           10.75.75.1      Up                Up
SBC2                           10.50.50.1      Up                Up
Bundle-POS24                   10.12.24.1      Up                Up
Bundle-Ether28                 10.12.28.1      Up                Up
Bundle-Ether28.1               10.12.29.1      Up                Up
Bundle-Ether28.2               10.12.30.1      Up                Up
Bundle-Ether28.3               10.12.31.1      Up                Up
MgmtEth0/RP0/CPU0/0            172.29.52.70    Up                Up
POS0/1/0/0                     unassigned      Shutdown          Down
POS0/1/0/1                     10.12.8.1       Up                Up
POS0/1/0/2                     unassigned      Shutdown          Down
POS0/1/0/3                     unassigned      Shutdown          Down
POS0/1/4/0                     unassigned      Up                Up
POS0/1/4/1                     unassigned      Up                Up
POS0/1/4/2                     10.12.32.1      Up                Up
POS0/1/4/3                     10.12.32.1      Down              Down
GigabitEthernet0/1/5/0         10.12.16.1      Up                Up
GigabitEthernet0/1/5/1         10.14.8.1       Up                Up
GigabitEthernet0/1/5/2         10.16.4.1       Up                Up
GigabitEthernet0/1/5/3         unassigned      Shutdown          Down
GigabitEthernet0/1/5/4         unassigned      Shutdown          Down
GigabitEthernet0/1/5/5         unassigned      Shutdown          Down
GigabitEthernet0/1/5/6         unassigned      Up                Up
GigabitEthernet0/1/5/7         unassigned      Up                Up
MgmtEth0/4/CPU0/0              unassigned      Up                Up
MgmtEth0/4/CPU1/0              unassigned      Up                Up
POS0/6/0/0                     unassigned      Shutdown          Down
POS0/6/0/1                     10.12.12.1      Up                Up
POS0/6/0/2                     unassigned      Shutdown          Down
POS0/6/0/3                     unassigned      Shutdown          Down
POS0/6/4/0                     unassigned      Shutdown          Down
POS0/6/4/1                     unassigned      Shutdown          Down
POS0/6/4/2                     unassigned      Shutdown          Down
POS0/6/4/3                     unassigned      Shutdown          Down
POS0/6/4/4                     10.14.4.1       Up                Up
POS0/6/4/5                     10.12.4.1       Up                Up
POS0/6/4/6                     10.13.4.1       Up                Up
POS0/6/4/7                     unassigned      Shutdown          Down
GigabitEthernet0/6/5/0         unassigned      Shutdown          Down
GigabitEthernet0/6/5/1         10.12.20.1      Up                Up
GigabitEthernet0/6/5/2         10.16.8.1       Up                Up
GigabitEthernet0/6/5/3         unassigned      Shutdown          Down
GigabitEthernet0/6/5/4         unassigned      Shutdown          Down
GigabitEthernet0/6/5/5         unassigned      Shutdown          Down
GigabitEthernet0/6/5/6         unassigned      Shutdown          Down
GigabitEthernet0/6/5/7         10.12.40.1      Up                Up
MgmtEth0/RP1/CPU0/0            172.29.52.71    Up                Up


-------------------------------- show install --------------------------------

  Node 0/1/CPU0 [LC] [SDR: Owner]
    Boot Device: mem:
    Boot Image: /disk0/hfr-os-mbi-3.8.0/lc/mbihfr-lc.vm
    Active Packages:
      disk0:hfr-sbc-3.8.0
      disk0:hfr-pagent-3.8.0
      disk0:hfr-fpd-3.8.0
      disk0:hfr-diags-3.8.0
      disk0:hfr-mcast-3.8.0
      disk0:hfr-mpls-3.8.0
      disk0:comp-hfr-mini-3.8.0
.
```

```
.
.
-------------------- show processes aborts location all --------------------

node:      node0_1_CPU0
------------------------------------------------------------------------------
No process aborts found
------------------------------------------------------------------------------
node:      node0_4_CPU0
------------------------------------------------------------------------------
03/27/2007 08:18:35.326 chkpt_proxy(3) (jid 373) abnormally terminated, restart scheduled
------------------------------------------------------------------------------
node:      node0_4_CPU1
------------------------------------------------------------------------------
03/27/2007 08:18:33.265 chkpt_proxy(4) (jid 374) abnormally terminated, restart scheduled
------------------------------------------------------------------------------
node:      node0_6_CPU0
------------------------------------------------------------------------------
No process aborts found
------------------------------------------------------------------------------
node:      node0_RP0_CPU0
------------------------------------------------------------------------------
03/27/2007 03:13:23.722 tcp(1) (jid 343) abnormally terminated, restart scheduled
03/16/2007 15:00:59.658 ip_app(1) (jid 203) abnormally terminated, restart scheduled
------------------------------------------------------------------------------
node:      node0_RP1_CPU0
------------------------------------------------------------------------------
03/27/2007 08:18:35.784 te_control(1) (jid 387) abnormally terminated, restart scheduled
------------------------------------------------------------------------------


-------------------- show processes blocked location all --------------------


node:      node0_1_CPU0
------------------------------------------------------------------
  Jid        Pid Tid            Name State   TimeInState    Blocked-on
   55       8202   1             ksh Reply  283:52:32:0368    8199  devc-ser8250
   51      16407   2         attachd Reply  283:52:39:0627   16405  eth_server
   51      16407   3         attachd Reply  283:52:39:0625    8204  mqueue
   72      16408   6            qnet Reply    0:00:00:0000   16405  eth_server
   72      16408   7            qnet Reply    0:00:00:0000   16405  eth_server
   72      16408   8            qnet Reply    0:00:00:0000   16405  eth_server
   72      16408   9            qnet Reply    0:00:00:0000   16405  eth_server
   52      16412   1         ksh-aux Reply  283:52:34:0211    8199  devc-ser8250
   50      16413   2   attach_server Reply  283:52:39:0432    8204  mqueue
  218      20516   1 reddrv_listener Reply    0:00:01:0053   16405  eth_server

node:      node0_4_CPU0
.
.
.
```

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**] | **terminal** [**page**]}

Syntax Description

file	Specifies that the command output is saved to a specified file.
send-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **disk0:***filename* • **disk0a:***filename* • **disk1:***filename* • **disk1a:***filename* • **ftp:***filename* • **harddisk:***filename* • **harddiska:***filename* • **harddiskb:***filename* • **nvram:***filename* • **rcp:***filename* • **tftp:***filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
terminal	Specifies that the command output is displayed on the terminal.
page	(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl+C** keys to stop the command output.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 nrs** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support nrs terminal page

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

                            show tech-support nrs

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


-------------------------------- show platform --------------------------------
Node            Type            PLIM            State           Config State
-------------------------------------------------------------------------------
0/1/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/1/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/1/1           MSC(SPA)        4T3E3           OK              PWR,NSHUT,MON
0/1/4           MSC(SPA)        4XOC48-POS      OK              PWR,NSHUT,MON
0/1/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/4/CPU0        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
```

```
0/4/CPU1        DRP(Active)     DRP-ACC          IOS XR RUN      PWR,NSHUT,MON
0/6/CPU0        MSC             Jacket Card      IOS XR RUN      PWR,NSHUT,MON
0/6/0           MSC(SPA)        4XOC3-POS        OK              PWR,NSHUT,MON
0/6/4           MSC(SPA)        8XOC3/OC12-POS   OK              PWR,NSHUT,MON
0/6/5           MSC(SPA)        8X1GE            OK              PWR,NSHUT,MON
0/RP0/CPU0      RP(Active)      N/A              IOS XR RUN      PWR,NSHUT,MON
0/RP1/CPU0      RP(Standby)     N/A              IOS XR RUN      PWR,NSHUT,MON


--------------------------- follow NRS processes ----------------------------

Note that these commands will only run on the currently attached

node, regardless of location specified

These commands are run once now and once towards the end of the

command. This is to avoid the delay between iterations of follow


------------------ follow process 155731 iteration 1 verbose ------------------

Attaching to process pid = 155731 (pkg/bin/nrssvr)
No tid specified, following all threads

DLL Loaded by this process
------------------------------

DLL path                 Text addr. Text size  Data addr. Data size  Version
/pkg/lib/libsysmgr.dll   0xfc131000 0x00013748 0xfc145000 0x0000066c        0
/pkg/lib/libcerrno.dll   0xfc146000 0x00002f94 0xfc088eb0 0x00000128        0
/pkg/lib/libcerr_dll_tbl.dll 0xfc149000 0x00004bb0 0xfc0c5cc0 0x00000148       0
/pkg/lib/libltrace.dll   0xfc14e000 0x000095d8 0xfc14566c 0x00000328        0
/pkg/lib/lib_platform_infra_ltrace.dll 0xfc158000 0x00001044 0xfc0c5e08 0x000000
/pkg/lib/libinfra.dll    0xfc15a000 0x000397b0 0xfc194000 0x00000cc0        0
/pkg/lib/cerrno/libinfra_error.dll 0xfc1211dc 0x00000cd8 0xfc0c5e90 0x000000a8 0
/pkg/lib/libios.dll      0xfc195000 0x0002d510 0xfc1c3000 0x00002000        0
/pkg/lib/cerrno/libevent_manager_error.dll 0xfc159044 0x00000e88 0xfc0c5f38 0x00
/pkg/lib/libc.dll        0xfc1ce000 0x0007b6e0 0xfc24a000 0x00002000        0
/pkg/lib/libplatform.dll 0xfc250000 0x0000cd14 0xfc25d000 0x00002000        0
/pkg/lib/lib_procfs_util.dll 0xfc261000 0x00004e8c 0xfc194cc0 0x000002a8       0
/pkg/lib/libsyslog.dll   0xfc266000 0x0000564c 0xfc26c000 0x00000328        0
/pkg/lib/libbackplane.dll 0xfc26d000 0x000013f0 0xfc145ea0 0x000000a8        0
/pkg/lib/libnodeid.dll   0xfc279000 0x0000af28 0xfc26c8b0 0x00000260        0
/pkg/lib/libdebug.dll    0xfc2d7000 0x00012764 0xfc2d61c8 0x00000630        0
/pkg/lib/cerrno/libdebug_error.dll 0xfc2ea000 0x00000db0 0xfc26ce50 0x000000e8 0
/pkg/lib/libchkpt.dll    0xfc5e4000 0x000436f0 0xfc628000 0x00000b3c        0
/pkg/lib/libsysdb.dll    0xfc629000 0x00050b00 0xfc67a000 0x00000b74        0
/pkg/lib/cerrno/libsysmgr_error.dll 0xfc585058 0x00000f94 0xfc4feee4 0x000000880
/pkg/lib/libsysdbutils.dll 0xfc690000 0x0000d378 0xfc5ddabc 0x0000046c       0
/pkg/lib/cerrno/libsysdb_error_v1v2.dll 0xfc6a0000 0x00001e08 0xfc575e6c 0x00000
```

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.

Reviewers: Please provide a more detailed command description if wrong.

show tech-support password {**file** *send-to* [**background** | **compressed** | **uncompressed**] | **terminal** [**page**]} [**location** {*node-id* | **all**}]

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.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 password** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support password terminal page

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

                                show tech-support

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



---------------------------- show running-config -----------------------------

Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
```

```
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
```

```
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
```

show tech-support pfi all

To automatically run **show** commands that display information specific to Packet Forwarding Infrastructure (PFI) debugging for all components, use the **show tech-support pfi all** command in EXEC mode.

show tech-support pfi all {**file** *send-to* [**background** | **compressed** | **uncompressed**] | **terminal** [**page**] | **trace-only**} [**location** {*node-id* | **all**}]

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.
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.
trace-only	Displays only trace information.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 all** 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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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

Examples

The following example shows some of the **show tech-support pfi all** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support pfi all terminal page

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

                        show tech-support pfi control
```

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


------------------------- show im trace location all --------------------------
11 wrapping entries (1024 possible, 0 filtered, 11 total)
7 unique entries (384 possible, 0 filtered)
Oct 11 19:24:10.699 ifmgr/errors 0/RP0/CPU0 2# t1  Failed to bind to pfi_ifh se'
Oct 11 19:26:02.019 ifmgr/errors 0/6/CPU0 2# t1  Failed to bind to pfi_ifh serv'
Oct 11 19:26:02.694 ifmgr/errors 0/1/CPU0 2# t1  Failed to bind to pfi_ifh serv'
Oct 11 19:26:48.033 ifmgr/errors 0/4/CPU1 2# t1  Failed to bind to pfi_ifh serv'
Oct 11 19:26:49.737 ifmgr/errors 0/RP1/CPU0 2# t1  Failed to bind to pfi_ifh se'
Oct 11 19:26:50.199 ifmgr/errors 0/4/CPU0 2# t1  Failed to bind to pfi_ifh serv'
Oct 11 19:30:34.372 ifmgr/errors 0/RP0/CPU0 13# t10 Cannot send async download y
10503 wrapping entries (89088 possible, 0 filtered, 60319 total)
Oct 11 19:23:57.839 ifmgr/mdr 0/RP0/CPU0 t1  IM is (re)starting
Oct 11 19:24:06.442 ifmgr/iir 0/RP0/CPU0 t1  IIR initialisation successful
Oct 11 19:24:06.458 ifmgr/mdr 0/RP0/CPU0 t1  IM received LR state 0x5 from sysmr
Oct 11 19:24:06.744 ifmgr/iir 0/RP0/CPU0 t6  Opening IIR to IM connection
Oct 11 19:24:06.747 ifmgr/iir 0/RP0/CPU0 t6  Failed to open IM connection: No sy
Oct 11 19:24:06.748 ifmgr/iir_resync 0/RP0/CPU0 t6  IIR resync message entry co0
Oct 11 19:24:06.748 ifmgr/iir 0/RP0/CPU0 t6  IIR sending GSP message 1 to ALL Is
Oct 11 19:24:07.749 ifmgr/iir 0/RP0/CPU0 t6  Opening IIR to IM connection
Oct 11 19:24:07.755 ifmgr/iir 0/RP0/CPU0 t6  Failed to open IM connection: No sy
Oct 11 19:24:08.756 ifmgr/iir 0/RP0/CPU0 t6  Opening IIR to IM connection
Oct 11 19:24:08.758 ifmgr/iir 0/RP0/CPU0 t6  Failed to open IM connection: No sy
Oct 11 19:24:09.340 ifmgr/create 0/RP0/CPU0 t1  im_tree_id_array_init: Virtual 2
Oct 11 19:24:09.340 ifmgr/mdr 0/RP0/CPU0 t1  IM is going active physical
Oct 11 19:24:09.378 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.378 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.378 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.378 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.383 ifmgr/iir 0/RP0/CPU0 t6  Received IM request for op IFMGR_A0
Oct 11 19:24:09.383 ifmgr/iir 0/RP0/CPU0 t6  IIR: Going active
Oct 11 19:24:09.533 ifmgr/errors 0/RP0/CPU0 t1  Failed to bind to pfi_ifh serve'
Oct 11 19:24:09.534 ifmgr/bundle 0/RP0/CPU0 t1  im_bundle_gsp_init complete
Oct 11 19:24:09.555 ifmgr/mdr 0/RP0/CPU0 t1  IM is going active virtual on RESTT
Oct 11 19:24:09.569 ifmgr/bundle 0/RP0/CPU0 t1  Recovering bundles info from ch.
Oct 11 19:24:09.569 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.569 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.569 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.569 ifmgr/create 0/RP0/CPU0 t1  Registered chkpt table with ID E
Oct 11 19:24:09.571 ifmgr/iir 0/RP0/CPU0 t1  Blast mode start. Main intf 0x00000
Oct 11 19:24:09.579 ifmgr/imd 0/RP0/CPU0 t9  Successfully transmitted message t2
Oct 11 19:24:09.581 ifmgr/imd 0/RP0/CPU0 t9  Successfully transmitted message t2
Oct 11 19:24:09.763 ifmgr/iir 0/RP0/CPU0 t6  Opening IIR to IM connection
Oct 11 19:24:09.780 ifmgr/iir 0/RP0/CPU0 t6  Failed to open IM connection: No sy
Oct 11 19:24:10.638 ifmgr/mdr 0/RP0/CPU0 t1  Letting IM connect to IMP
Oct 11 19:24:10.670 ifmgr/repl 0/RP0/CPU0 t1  Storing NOTIFY DPC info: gnid 0x01
Oct 11 19:24:10.670 ifmgr/download 0/RP0/CPU0 t1  Produced download element intr
Oct 11 19:24:10.670 ifmgr/download 0/RP0/CPU0 t1  Sending pulse code 124 to imp0
Oct 11 19:24:10.670 ifmgr/repl 0/RP0/CPU0 t1  Storing NOTIFY DPC info: gnid 0xf3
Oct 11 19:24:10.670 ifmgr/download 0/RP0/CPU0 t1  Download empty (cb idx 1 (INIg
Oct 11 19:24:10.670 ifmgr/download 0/RP0/CPU0 t1  Produced download element intr
Oct 11 19:24:10.670 ifmgr/download 0/RP0/CPU0 t1  Outstanding pulse to improxy.1
Oct 11 19:24:10.671 ifmgr/mdr 0/RP0/CPU0 t1  Publishing lwm channel
Oct 11 19:24:10.691 ifmgr/iir 0/RP0/CPU0 t6  Received IM request for op PEER_NO0
Oct 11 19:24:10.694 ifmgr/create 0/RP0/CPU0 t1  PFI_IFH broadcast success snv=0r
Oct 11 19:24:10.696 ifmgr/mdr 0/RP0/CPU0 t10 IM entering event loop
Oct 11 19:24:10.699 ifmgr/errors 0/RP0/CPU0 t1  Failed to bind to pfi_ifh serve'
Oct 11 19:24:10.699 ifmgr/mdr 0/RP0/CPU0 t1  IM received LR state 0x4 from sysmr
Oct 11 19:24:10.717 ifmgr/repl 0/RP0/CPU0 t1  Received GSP notification 16 (NEWP
Oct 11 19:24:10.717 ifmgr/download 0/RP0/CPU0 t10 Received notification - proce1
Oct 11 19:24:10.717 ifmgr/download 0/RP0/CPU0 t10 Download result: element ID 0r
Oct 11 19:24:10.717 ifmgr/download 0/RP0/CPU0 t10 Async rules download complete
```

```
Oct 11 19:24:10.717 ifmgr/download 0/RP0/CPU0 t10 Completed processing of 1 dow1
Oct 11 19:24:10.736 ifmgr/download 0/RP0/CPU0 t10 Received notification - proce0
Oct 11 19:24:10.736 ifmgr/download 0/RP0/CPU0 t10 Download result: element ID 0r
Oct 11 19:24:10.736 ifmgr/download 0/RP0/CPU0 t10 Async initial download compler
Oct 11 19:24:10.736 ifmgr/download 0/RP0/CPU0 t10 Completed processing of 1 dow0
Oct 11 19:24:10.782 ifmgr/iir 0/RP0/CPU0 t6  Opening IIR to IM connection
Oct 11 19:24:10.790 ifmgr/iir 0/RP0/CPU0 t6  Successfully opened IM connection
Oct 11 19:24:10.792 ifmgr/iir 0/RP0/CPU0 t6  IIR Publishing channel: No error
Oct 11 19:24:11.456 ifmgr/register 0/RP0/CPU0 t10 im_notify_queue: Inserting ca]
Oct 11 19:24:11.458 ifmgr/register 0/RP0/CPU0 t10 Returned TRUE for ACTIVE_VIRT0
Oct 11 19:24:11.556 ifmgr/iir_notify 0/RP0/CPU0 t6  Adding 1 wildcard registratf
Oct 11 19:24:11.556 ifmgr/iir_notify 0/RP0/CPU0 t6  Sending RESYNC_END notifica0
Oct 11 19:24:11.828 ifmgr/create 0/RP0/CPU0 t10 grow_id_array: Growing id array8
Oct 11 19:24:11.830 ifmgr/intf_exist 0/RP0/CPU0 t10 create (bulk 7) intf:0x00083
Oct 11 19:24:11.830 ifmgr/caps_exist 0/RP0/CPU0 t10 bulk 7[0] base caps defined'
Oct 11 19:24:11.830 ifmgr/mdr 0/RP0/CPU0 t10 Marking client with handle 0x30000r
Oct 11 19:24:11.830 ifmgr/create 0/RP0/CPU0 t10 grow_id_array: Growing id array4
Oct 11 19:24:11.831 ifmgr/create 0/RP0/CPU0 t10 PFI_IFH broadcast success snv=0r
Oct 11 19:24:11.831 ifmgr/download 0/RP0/CPU0 t10 Produced download element intr
Oct 11 19:24:11.831 ifmgr/download 0/RP0/CPU0 t10 Sending pulse code 124 to imp0
Oct 11 19:24:12.008 ifmgr/register 0/RP0/CPU0 t10 im_notify_queue: Inserting ca]
Oct 11 19:24:12.331 ifmgr/register 0/RP0/CPU0 t10 im_notify_queue: Inserting ca]
```

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 {**terminal** [**page**] | **file** *send-to*}

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*

Defaults

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 command references for information about these commands and descriptions of their command output. The Cisco Cisco IOS XR 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 terminal page

------------------------ show controller squid summary ------------------------
Cpuctrl discovered 14 device on node 0/1/CPU0:

Cpuctrl HW version string for this node is:
Squid FPGA v2.07 Fri Jan 23 16:21:01 2004 userb

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

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

------------------------------------------------------------
device_name:          Ingressq   device instance:    0
```

```
Cpuctrl net port:    8          pci_base:            0xa0000000

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

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

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

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

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

------------------------------------------------------------
device_name:         PSE        device instance:     0
Cpuctrl net port:    5          pci_base:            0x94000000

------------------------------------------------------------
device_name:         PlimAsic for SPA   device instance:    0
Cpuctrl net port:    9          pci_base:            0xa4000000
.
.
.
------- show controller plim asic statistics summary location 0/1/CPU0 --------
             Node: 0/1/CPU0
-------------------------------------
Instance# 0 Statistics
------------------------------------------------------------------------
To PSE       : 1034176              BP count    : 2615809697
RMC Runt     : 0                    RMC Giant   : 0
RMC Tail Drop: 1                    L2P Drop    : 0
From Egressq : 924513               SIF Drop    : 0
TLK Drop     : 0

Port 0
To SPA       : 0                    From SPA    : 0
RSI FIFO Drop: 0                    QPM  Drop   : 0
QPM OVFL     : 0                    RPB  Drop   : 0

Port 1
To SPA       : 0                    From SPA    : 0
RSI FIFO Drop: 0                    QPM  Drop   : 0
QPM OVFL     : 0                    RPB  Drop   : 0

Port 2
To SPA       : 924513               From SPA    : 1034177
RSI FIFO Drop: 0                    QPM  Drop   : 0
QPM OVFL     : 0                    RPB  Drop   : 0

Instance# 1 Statistics
------------------------------------------------------------------------
To PSE       : 9217833              BP count    : 2323530765
RMC Runt     : 0                    RMC Giant   : 0
RMC Tail Drop: 2590                 L2P Drop    : 0
From Egressq : 9317309              SIF Drop    : 0
```

```
TLK Drop      : 0

Port 0
To SPA        : 0                   From SPA  : 0
RSI FIFO Drop: 0                    QPM  Drop : 0
QPM OVFL      : 0                   RPB  Drop : 0

Port 1
To SPA        : 537745              From SPA  : 546867
RSI FIFO Drop: 0                    QPM  Drop : 0
QPM OVFL      : 0                   RPB  Drop : 0

Port 2
To SPA        : 8779564             From SPA  : 8673556
RSI FIFO Drop: 0                    QPM  Drop : 0
QPM OVFL      : 0                   RPB  Drop : 0
```

show tech-support pos

To automatically run **show** commands that display information specific to Packet over SONET /SDH (POS) debugging, use the **show tech-support pos** command in EXEC mode.

Reviewers: Please provide a more detailed command description if wrong.

show tech-support pos {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]} {**interface** *type instance*} [**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	Collects information about a specific interface.
type	Interface type. For more information, use the question mark (**?**) online help function.

instance	Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. – *rack*: Chassis number of the rack. – *slot*: Physical slot number of the modular services card or line card. – *module*: Module number. A physical layer interface module (PLIM) is always 0. – *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (**?**) online help function.
show-only	(Optional) Collects only show command information.
terminal	Specifies that the command output is displayed on the terminal.
trace-only	(Optional) Collects only trace information.
location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates POS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See "Obtaining Documentation and Submitting a Service Request" section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
cisco-support	read

Examples

The following example shows some of the **show tech-support routing pos** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support pos terminal page

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

                              show tech-support pos

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


----------------------------- show running-config -----------------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
```

```
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
 dot1q vlan 31
!
interface Bundle-POS24
```

```
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
```

show tech-support 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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 rdsfs** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support rdsfs terminal page

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

                            show tech-support rdsfs

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


-------------------------------- show platform --------------------------------
Node            Type            PLIM            State           Config State
-------------------------------------------------------------------------------
0/1/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/1/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/1/1           MSC(SPA)        4T3E3           OK              PWR,NSHUT,MON
0/1/4           MSC(SPA)        4XOC48-POS      OK              PWR,NSHUT,MON
```

```
0/1/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/4/CPU0        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
0/4/CPU1        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
0/6/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/6/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/6/4           MSC(SPA)        8XOC3/OC12-POS  OK              PWR,NSHUT,MON
0/6/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/RP0/CPU0      RP(Active)      N/A             IOS XR RUN      PWR,NSHUT,MON
0/RP1/CPU0      RP(Standby)     N/A             IOS XR RUN      PWR,NSHUT,MON


-------------------------- follow rdsfs_svr process --------------------------

Note that this commands will only run on the currently attached

node, regardless of location specified

These commands are run once now and once towards the end of the

command. This is to avoid the delay between iterations of follow


------------------ follow process 155728 iteration 1 verbose ------------------

Attaching to process pid = 155728 (pkg/bin/rdsfs_svr)
No tid specified, following all threads

DLL Loaded by this process
------------------------------

DLL path                Text addr. Text size  Data addr. Data size  Version
/pkg/lib/libsysmgr.dll   0xfc131000 0x00013748 0xfc145000 0x0000066c        0
/pkg/lib/libcerrno.dll   0xfc146000 0x00002f94 0xfc088eb0 0x00000128        0
/pkg/lib/libcerr_dll_tbl.dll 0xfc149000 0x00004bb0 0xfc0c5cc0 0x00000148       0
/pkg/lib/libltrace.dll   0xfc14e000 0x000095d8 0xfc14566c 0x00000328        0
/pkg/lib/lib_platform_infra_ltrace.dll 0xfc158000 0x00001044 0xfc0c5e08 0x000000
/pkg/lib/libinfra.dll    0xfc15a000 0x000397b0 0xfc194000 0x00000cc0        0
/pkg/lib/cerrno/libinfra_error.dll 0xfc1211dc 0x00000cd8 0xfc0c5e90 0x000000a8 0
/pkg/lib/libios.dll      0xfc195000 0x0002d510 0xfc1c3000 0x00002000        0
/pkg/lib/cerrno/libevent_manager_error.dll 0xfc159044 0x00000e88 0xfc0c5f38 0x00
/pkg/lib/libc.dll        0xfc1ce000 0x0007b6e0 0xfc24a000 0x00002000        0
/pkg/lib/libplatform.dll 0xfc250000 0x0000cd14 0xfc25d000 0x00002000        0
/pkg/lib/lib_procfs_util.dll 0xfc261000 0x00004e8c 0xfc194cc0 0x000002a8       0
/pkg/lib/libsyslog.dll   0xfc266000 0x0000564c 0xfc26c000 0x00000328        0
/pkg/lib/libbackplane.dll 0xfc26d000 0x000013f0 0xfc145ea0 0x000000a8        0
/pkg/lib/libnodeid.dll   0xfc279000 0x0000af28 0xfc26c8b0 0x00000260        0
/pkg/lib/libdebug.dll    0xfc2d7000 0x00012764 0xfc2d61c8 0x00000630        0
/pkg/lib/cerrno/libdebug_error.dll 0xfc2ea000 0x00000db0 0xfc26ce50 0x000000e8 0
/pkg/lib/libsysdb.dll    0xfc629000 0x00050b00 0xfc67a000 0x00000b74        0
/pkg/lib/cerrno/libsysmgr_error.dll 0xfc585058 0x00000f94 0xfc4feee4 0x000000880
/pkg/lib/libsysdbutils.dll 0xfc690000 0x0000d378 0xfc5ddabc 0x0000046c       0
/pkg/lib/cerrno/libsysdb_error_v1v2.dll 0xfc6a0000 0x00001e08 0xfc575e6c 0x00000
/pkg/lib/cerrno/libsysdb_error_v2only.dll 0xfc6a5000 0x00002848 0xfc5c7f78 0x000
```

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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]} [**ipv4** | **ipv6**]

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.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 rib** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support rib terminal page
```

Reviewers: Please provide real-world sample output.

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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 cef drop location** *node-id*
- **show udp brief location** *node-id*
- **show udp statistics pcb all location** *node-id*
- **show bfd session agent detail location**
- **show bfd timer-groups location**
- **show bfd index-mgrs location**
- **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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 routing bfd** command output:

```
RP/0/RSP0/CPU0:router# show tech-support routing bfd terminal page

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

               show tech-support bfd (Detail with Event traces)

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


------------------------------ show bfd session -------------------------------

---------------------------------- show bfd -----------------------------------
IPV4 Sessions Up: 0, Down: 0, Total: 0

-------------------------- show memory heap fail all --------------------------

---------------------- show memory summary location all ----------------------

node:      node0_1_CPU0
------------------------------------------------------------------
Physical Memory: 2048M total
 Application Memory : 1905M (1401M available)
 Image: 14M (bootram: 14M)
 Reserved: 128M, IOMem: 2028M, flashfsys: 0
 Total shared window: 55M

node:      node0_4_CPU0
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3947M (3549M available)
 Image: 19M (bootram: 19M)

 Reserved: 128M, IOMem: 2028M, flashfsys: 0
 Total shared window: 21M
```

```
node:      node0_4_CPU1
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3947M (3518M available)
 Image: 19M (bootram: 19M)
 Reserved: 128M, IOMem: 2028M, flashfsys: 0
 Total shared window: 21M

node:      node0_6_CPU0
------------------------------------------------------------------
Physical Memory: 2048M total
 Application Memory : 1905M (1408M available)
 Image: 14M (bootram: 14M)
 Reserved: 128M, IOMem: 2028M, flashfsys: 0
 Total shared window: 55M

node:      node0_RP0_CPU0
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3945M (3192M available)
 Image: 22M (bootram: 22M)
 Reserved: 128M, IOMem: 2028M, flashfsys: 0
 Total shared window: 21M

node:      node0_RP1_CPU0
------------------------------------------------------------------
Physical Memory: 4096M total
 Application Memory : 3945M (3372M available)
 Image: 22M (bootram: 22M)
 Reserved: 128M, IOMem: 2028M, flashfsys: 0
 Total shared window: 21M

---------------------- show process blocked location all ----------------------

node:      node0_1_CPU0
------------------------------------------------------------------
  Jid       Pid Tid             Name State    TimeInState    Blocked-on
   55      8202   1              ksh Reply  304:11:57:0624    8199  devc-ser8250
   51     16407   2          attachd Reply  304:12:04:0893   16405  eth_server
   51     16407   3          attachd Reply  304:12:04:0891    8204  mqueue
   72     16408   6             qnet Reply    0:00:00:0000   16405  eth_server
   72     16408   7             qnet Reply    0:00:00:0000   16405  eth_server
   72     16408   8             qnet Reply    0:00:00:0000   16405  eth_server
   72     16408   9             qnet Reply    0:00:00:0000   16405  eth_server
   52     16412   1          ksh-aux Reply  304:11:59:0480    8199  devc-ser8250
   50     16413   2   attach_server Reply  304:12:04:0703    8204  mqueue
  218     20516   1 reddrv_listener Reply    0:00:02:0206   16405  eth_server
.
.
.
------------------------------ show bfd location ------------------------------
Location: 0/1/CPU0
IPV4 Sessions Up: 0, Down: 0, Standby: 0, Total: 0

Location: 0/1/SP
.
.
.
```

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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 instance isp trace 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 routing isis** command output:

```
RP/0/RSP0/CPU0:router# show tech-support isis terminal page

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

                            show tech-support isis

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


---------------------- show isis instance isp trace all -----------------------
184 wrapping entries (6144 possible, 0 filtered, 184 total)
Mar 29 08:38:18.437 isis/isp/sev 0/RP0/CPU0 t1  STARTUP_START
Mar 29 08:38:18.437 isis/isp/sev 0/RP0/CPU0 t1  STARTUP_MODULE
Mar 29 08:38:18.438 isis/isp/sev 0/RP0/CPU0 t1  STARTUP_MODULE
Mar 29 08:38:18.438 isis/isp/sev 0/RP0/CPU0 t1  THREAD_CREATING
Mar 29 08:38:18.451 isis/isp/det 0/RP0/CPU0 t1  THREAD_THREAD_ID
Mar 29 08:38:18.451 isis/isp/sev 0/RP0/CPU0 t1  THREAD_CREATING
Mar 29 08:38:18.451 isis/isp/sev 0/RP0/CPU0 t1  THREAD_CREATING
Mar 29 08:38:18.452 isis/isp/sev 0/RP0/CPU0 t1  THREAD_CREATING
Mar 29 08:38:18.452 isis/isp/sev 0/RP0/CPU0 t1  THREAD_CREATING
Mar 29 08:38:18.536 isis/isp/sev 0/RP0/CPU0 t1  STARTUP_MODULE
Mar 29 08:38:19.274 isis/isp/sev 0/RP0/CPU0 t1  STARTUP_MODULE
Mar 29 08:38:19.470 isis/isp/sev 0/RP0/CPU0 t1  IO_PAK_SERVER_CONNECTED
Mar 29 08:38:19.551 isis/isp/det 0/RP0/CPU0 t1  IO_SOCKET_CREATE_SUCCESS
Mar 29 08:38:19.555 isis/isp/sev 0/RP0/CPU0 t1  IO_SOCKET_CONN_OPEN
Mar 29 08:38:20.561 isis/isp/std 0/RP0/CPU0 t1  ROUTE_RIB_PURGE_TIME_SET
.
.
.
Mar 29 08:38:27.622 isis/isp/det 0/RP0/CPU0 t4  THREAD_FOP_PROCESS
Mar 29 08:38:27.622 isis/isp/det 0/RP0/CPU0 t4  SSM_TICK_TIMER_FIRES CR-SYNC-LSPDB
Mar 29 08:38:27.622 isis/isp/det 0/RP0/CPU0 t4  SSM_STATE_RESULT CR-SYNC-LSPDB
Mar 29 08:38:27.622 isis/isp/det 0/RP0/CPU0 t4  SSM_STATE_TIME_BUDGET CR-SYNC-LSPDB
Mar 29 08:38:27.622 isis/isp/sev 0/RP0/CPU0 t4  SSM_STATE_RUN CR-SYNC-LSPDB

------------------------------- show isis all --------------------------------

No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp levels found
No IS-IS isp IPv4 Unicast levels found
No IS-IS isp IPv4 Unicast levels found
No IS-IS isp IPv4 Unicast levels found
No IS-IS isp IPv4 Unicast levels found
No IS-IS isp IPv4 Unicast levels found
IS-IS Router: isp
  System Id: 0000.0000.0000 (Not configured, protocol disabled)
  IS Levels: level-1-2
  Manual area address(es):
  Routing for area address(es):
  Non-stop forwarding: Disabled
  Most recent startup mode: Cold Restart
  Topologies supported by IS-IS:
    IPv4 Unicast
      No protocols redistributed
      Distance: 115
```

```
  Interfaces supported by IS-IS:
    POS0/1/0/0 is disabled (active in configuration)

No IS-IS isp host data available

IS-IS isp Interfaces
POS0/1/0/0                  Disabled (No NET configured)

IS-IS isp Interfaces
    Interface      All     Adjs    Adj Topos  Adv Topos  CLNS   MTU    Prio
                   OK    L1   L2    Run/Cfg    Run/Cfg                 L1   L2
-----------------  ---  ---------  ---------  ---------  ----  ----  --------
PO0/1/0/0          No

No IS-IS isp mesh-groups found

IS-IS isp statistics:
  IS-IS statistics:
    Fast PSNP cache (hits/tries): 0/0
    LSP checksum errors received: 0
    LSP Dropped: 0
    SNP Dropped: 0
    UPD Max Queue size: 0

IS-IS isp neighbor summary:
State         L1       L2     L1L2
Up             0        0        0
Init           0        0        0
Failed         0        0        0

IS-IS isp neighbors:
System Id      Interface        SNPA           State Holdtime Type IETF-NSF

IS-IS isp Database Summary for all LSPs
                             Active              Purged               All
                        L1    L2   Total   L1    L2   Total   L1    L2   Total
                       ----- ----- -----  ----- ----- -----  ----- ----- -----
Fragment 0 Counts
           Router LSPs:     0     0     0      0     0     0      0     0     0
      Pseudo-node LSPs:     0     0     0      0     0     0      0     0     0
              All LSPs:     0     0     0      0     0     0      0     0     0

All Fragment Counts
           Router LSPs:     0     0     0      0     0     0      0     0     0
      Pseudo-node LSPs:     0     0     0      0     0     0      0     0     0
              All LSPs:     0     0     0      0     0     0      0     0     0

IS-IS isp IS Topology Summary IPv4 Unicast
                          L1                          L2
                Reach  UnReach  Total      Reach  UnReach  Total
               ------- ------- -------    ------- ------- -------
Router nodes:        0       0       0          0       0       0
Pseudo nodes:        0       0       0          0       0       0

 Total nodes:        0       0       0          0       0       0

IS-IS isp IPv4 Unicast routes

Codes: L1 - level 1, L2 - level 2, ia - interarea (leaked into level 1)
       df - level 1 default (closest attached router), su - summary null
       C - connected, S - static, R - RIP, B - BGP, O - OSPF
       i - IS-IS (redistributed from another instance)

Maximum parallel path count: 8
```

```
IS-IS isp checkpoint interface
Interface         Handle    CircNum  DIS Areas    Adj  Chkpt ID
No 'checkpoint interfaces' found in IS-IS isp

IS-IS isp checkpoint adjacencies
System ID      Interface        SNPA           Lvl  Hold Pri  CID  Chkpt ID Nexthops
No 'checkpoint adjacencies' found in IS-IS isp

IS-IS isp checkpoint LSPs
Level  LSPID                  Chkpt ID
  No 'checkpoint LSPs' found in IS-IS isp

 Total LSP count: 0 (L1: 0, L2 0, local L1: 0, local L2 0)

---------------------------- show clns statistics -----------------------------
CLNS Statistics:
Last counter clear:                    1067929 seconds ago
Total number of packets sent:          0
Total number of packets received:      0
Send packets dropped, total:           0
Send packets dropped, buffer overflow: 0
Send packets dropped, out of memory:   0
Send packets dropped, netio:           0
Send packets dropped, other:           0
Receive socket max queue size:         0
Receive packets dropped, total:        0
Receive packets dropped, other:        0
Receive packets dropped per pdu class:

Class    Overflow/Max   Rate Limit/Max
IIH             0/0             0/0
LSP             0/0             0/0
SNP             0/0             0/0
OTHER           0/0             0/0
Total          0               0

--------------------------- show imds interface all ---------------------------
IMDS INTERFACE DATA (Node 0x201)

MgmtEth0_RP0_CPU0_0 (0x00080000)
-----------------------
flags: 0x0001002f    type: 8 (IFT_ETHERNET)    encap: 30 (ether)
state: 3 (up)     mtu: 1514    protocol count: 4
control parent: 0x00000000     data parent: 0x00000000
       protocol         capsulation           state        mtu
    --------------- -------------------- --------------- --------
    7 (arp)
.
```

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-id*] {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

process-id	(Optional) Name of the OSPF process.
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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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**

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 routing ospf** command output:

```
RP/0/RSP0/CPU0:router# show tech-support routing ospf terminal page

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

                            show tech-support ospf
------------------------------------------------------------------------------

---------------------------------- show ospf ----------------------------------

 Routing Process "ospf 100" with ID 10.1.1.1
```

```
 Supports only single TOS(TOS0) routes
 Supports opaque LSA
 Initial SPF schedule delay 5000 msecs
 Minimum hold time between two consecutive SPFs 10000 msecs
 Maximum wait time between two consecutive SPFs 10000 msecs
 Initial LSA throttle delay 500 msecs
 Minimum hold time for LSA throttle 5000 msecs
 Maximum wait time for LSA throttle 5000 msecs
 Minimum LSA interval 5000 msecs. Minimum LSA arrival 1 secs
 Flood pacing interval 33 msecs. Retransmission pacing interval 66 msecs
 Maximum number of configured interfaces 255
 Number of external LSA 0. Checksum Sum 00000000
 Number of opaque AS LSA 0. Checksum Sum 00000000
 Number of DCbitless external and opaque AS LSA 0
 Number of DoNotAge external and opaque AS LSA 0
 Number of areas in this router is 1. 1 normal 0 stub 0 nssa
 External flood list length 0
 Non-Stop Forwarding enabled
    Area BACKBONE(0)
        Number of interfaces in this area is 12
        SPF algorithm executed 350 times
        Number of LSA 31. Checksum Sum 0x10c978
        Number of opaque link LSA 0. Checksum Sum 00000000
        Number of DCbitless LSA 0
        Number of indication LSA 0
        Number of DoNotAge LSA 0
        Flood list length 0

------------------------------ show ospf vrf all ------------------------------

------------------------------ show ospf summary ------------------------------

Number of OSPF interfaces 12
Number of OSPF interfaces up 12
Number of OSPF virtual interfaces up 0
Number of neighbors 9
Number of neighbors adjacent 9
Number of areas 1
 LSA Type       Count
 Router        : 13
 Network       : 11
 Summary Net   : 7
 Summary ASBR  : 0
 Type-7 Ext    : 0
 Opaque Link   : 0
 Opaque Area   : 0
 Type-5 Ext    : 0
 Opaque AS     : 0

-------------------------- show ospf vrf all summary --------------------------

----------------------------- show ospf interface -----------------------------

POS0/1/0/1 is up, line protocol is up
  Internet Address 10.12.8.1/24, Area 0
  Process ID 100, Router ID 10.1.1.1, Network Type POINT_TO_POINT, Cost: 1
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  Non-Stop Forwarding (NSF) enabled
    Hello due in 00:00:08
  Index 3/3, flood queue length 0
  Next 0(0)/0(0)
  Last flood scan length is 1, maximum is 19
  Last flood scan time is 0 msec, maximum is 1 msec
```

```
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 10.2.2.2
  Suppress hello for 0 neighbor(s)
  Multi-area interface Count is 0
GigabitEthernet0/1/5/1 is up, line protocol is up
  Internet Address 10.14.8.1/24, Area 0
  Process ID 100, Router ID 10.1.1.1, Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State BDR, Priority 1
  Designated Router (ID) 10.4.4.4, Interface address 10.14.8.4
  Backup Designated router (ID) 10.1.1.1, Interface address 10.14.8.1
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  Non-Stop Forwarding (NSF) enabled
    Hello due in 00:00:05
  Index 2/2, flood queue length 0
  Next 0(0)/0(0)
  Last flood scan length is 1, maximum is 4
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 10.4.4.4  (Designated Router)
  Suppress hello for 0 neighbor(s)
  Multi-area interface Count is 0
GigabitEthernet0/1/5/2 is up, line protocol is up
  Internet Address 10.16.4.1/24, Area 0
  Process ID 100, Router ID 10.1.1.1, Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State BDR, Priority 1
  Designated Router (ID) 10.6.6.6, Interface address 10.16.4.6
  Backup Designated router (ID) 10.1.1.1, Interface address 10.16.4.1
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  Non-Stop Forwarding (NSF) enabled
    Hello due in 00:00:04
  Index 4/4, flood queue length 0
  Next 0(0)/0(0)
  Last flood scan length is 1, maximum is 4
  Last flood scan time is 0 msec, maximum is 1 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 10.6.6.6  (Designated Router)
  Suppress hello for 0 neighbor(s)
  Multi-area interface Count is 0
POS0/6/0/1 is up, line protocol is up
  Internet Address 10.12.12.1/24, Area 0
  Process ID 100, Router ID 10.1.1.1, Network Type POINT_TO_POINT, Cost: 1
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  Non-Stop Forwarding (NSF) enabled
    Hello due in 00:00:01
  Index 8/8, flood queue length 0
  Next 0(0)/0(0)
  Last flood scan length is 1, maximum is 4
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 1, Adjacent neighbor count is 1
    Adjacent with neighbor 10.2.2.2
  Suppress hello for 0 neighbor(s)
  Multi-area interface Count is 0
.
.
```

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**] {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

instance	(Optional) Name of the OSPFv3 instance.
detail	(Optional) Displays all available OSPFv3 information.
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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 routing ospfv3** command output:

```
RP/0/RSP0/CPU0:router# show tech-support routing ospfv3 terminal page

Mon Nov 10 18:36:21.028 PST DST


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

show tech-support ospfv3

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


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

Cisco IOS XR Software, Version 3.8.0.20I[DT_IMAGE]
Copyright (c) 2008 by Cisco Systems, Inc.

ROM: System Bootstrap, Version 1.51(20080807:092259) [CRS-1 ROMMON],

P2_CRS-8 uptime is 6 days, 16 hours, 38 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).

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

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 0/4/CPU0 is 0x102
Boot device on node 0/4/CPU0 is disk0:
Package active on node 0/4/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-doc, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-doc-3.8.0.20I
Built on Wed Oct 29 17:02:31 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

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-k9sec, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-k9sec-3.8.0.20I
Built on Wed Oct 29 16:59:58 DST 2008
By iox26.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

hfr-mgbl, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mgbl-3.8.0.20I
Built on Wed Oct 29 16:31:48 DST 2008
By sjc5-gf-021.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/h0

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-rout, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-rout-3.8.0.20I
Built on Wed Oct 29 16:21:29 DST 2008
By iox30.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

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 0/4/CPU1 is 0x102
Boot device on node 0/4/CPU1 is disk0:
Package active on node 0/4/CPU1:
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-doc, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-doc-3.8.0.20I
Built on Wed Oct 29 17:02:31 DST 2008
By iox3.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/work0

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-k9sec, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-k9sec-3.8.0.20I
Built on Wed Oct 29 16:59:58 DST 2008
By iox26.cisco.com in /auto/ioxbuild6/production/3.8.0.20I.DT_IMAGE/hfr/wor0

--More--
```

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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]}

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 routing rpl** command output:

```
RP/0/RSP0/CPU0:router# show tech-support routing rpl terminal page

Mon Nov 10 18:53:02.220 PST DST

------------------------------------------------------------------------------
start of show tech-support routing rpl
------------------------------------------------------------------------------


------------------------------------------------------------------------------
RPL CLients Configuration
------------------------------------------------------------------------------

router ospf 100
router-id 10.2.2.2
nsf cisco
area 0
mpls traffic-eng
interface Bundle-POS24
!
interface Loopback0
passive enable
!
interface GigabitEthernet0/1/5/1
!
interface GigabitEthernet0/1/5/2
bfd fast-detect
!
interface GigabitEthernet0/6/5/1
!
interface POS0/1/0/1
!
interface POS0/1/0/2
!
interface POS0/1/0/3
!
interface POS0/6/0/1
!
interface POS0/6/4/4
!
interface POS0/6/4/6
!
interface POS0/6/4/7
!
!
mpls traffic-eng router-id Loopback0
!

Mon Nov 10 18:53:03.313 PST DST
% No such configuration item(s)

Mon Nov 10 18:53:03.975 PST DST
router isis lab
is-type level-2-only
net 49.1122.0000.0000.0002.00
interface Loopback0
passive
address-family ipv4 unicast
!
!
interface POS0/1/0/2
address-family ipv4 unicast
```

```
!
!
interface POS0/1/0/3
address-family ipv4 unicast
!
!
!

Mon Nov 10 18:53:04.699 PST DST
% No such configuration item(s)

Mon Nov 10 18:53:05.457 PST DST
router eigrp 24
vrf vrf_1
address-family ipv4
router-id 172.20.0.0
default-metric 100000 4000 200 45 4470
autonomous-system 6
redistribute connected
interface POS0/1/0/0
site-of-origin 201:1
!
!
!
!

Mon Nov 10 18:53:06.181 PST DST
% No such configuration item(s)

Mon Nov 10 18:53:07.004 PST DST

------------------------------------------------------------------------------
show process policy_repository
------------------------------------------------------------------------------

Job Id: 312
PID: 794895
Executable path: /disk0/hfr-rout-3.8.0.20I/bin/policy_repository
Instance #: 1
Version ID: 00.00.0000
Respawn: ON
Respawn count: 2
Max. spawns per minute: 12
Last started: Tue Nov  4 02:56:20 2008
Process state: Run (last exit status : 203)
Package state: Normal
Started on config: cfg/gl/policy_lang/policies/
core: MAINMEM
Max. core: 0
Level: 172
Placement: ON
startup_path: /pkg/startup/pr.startup
Ready: 10.672s
Process cpu time: 0.198 user, 0.046 kernel, 0.244 total
JID    TID  Stack pri state         TimeInState       HR:MM:SS:MSEC NAME
312    2      28K  10 Receive      156:58:40:0190    0:00:00:0240 policy_reposiy
------------------------------------------------------------------------------
Mon Nov 10 18:53:07.633 PST DST
% No such configuration item(s)

Mon Nov 10 18:53:08.002 PST DST
SysDB Verification Registrations:
jid:     nid:       tid: handle:  reg_path:
00000312 0/RP0/CPU0 0002 00000606 '/cfg/gl/pim/.*/ipv4/b/rpf/topology'
```

```
00000312 0/RP1/CPU0 0002 00000597 '/cfg/gl/pim/.*/ipv4/b/rpf/topology'
00000312 0/RP0/CPU0 0002 00000607 '/cfg/gl/pim/.*/ipv6/b/rpf/topology'
00000312 0/RP1/CPU0 0002 00000598 '/cfg/gl/pim/.*/ipv6/b/rpf/topology'
00000312 0/RP0/CPU0 0002 00000595 '/cfg/gl/rip/.*/.*/ord_t/if/.*/ord_t/policy'
00000312 0/RP1/CPU0 0002 00000571 '/cfg/gl/rip/.*/.*/ord_t/if/.*/ord_t/policy'
00000312 0/RP0/CPU0 0002 00000596 '/cfg/gl/rip/.*/.*/ord_t/if/.*/ord_t/policy'
00000312 0/RP1/CPU0 0002 00000573 '/cfg/gl/rip/.*/.*/ord_t/if/.*/ord_t/policy'
00000312 0/RP0/CPU0 0002 00000588 '/cfg/gl/rip/.*/.*/ord_t/redist/.*/.*'
00000312 0/RP1/CPU0 0002 00000564 '/cfg/gl/rip/.*/.*/ord_t/redist/.*/.*'
00000312 0/RP0/CPU0 0002 00000592 '/cfg/gl/rip/.*/.*/ord_t/policy-in'
00000312 0/RP1/CPU0 0002 00000568 '/cfg/gl/rip/.*/.*/ord_t/policy-in'
00000312 0/RP0/CPU0 0002 00000594 '/cfg/gl/rip/.*/.*/ord_t/policy-out'
00000312 0/RP1/CPU0 0002 00000569 '/cfg/gl/rip/.*/.*/ord_t/policy-out'
00000312 0/RP0/CPU0 0002 00000590 '/cfg/gl/rip/.*/.*/ord_t/defaultinformation'
00000312 0/RP1/CPU0 0002 00000566 '/cfg/gl/rip/.*/.*/ord_t/defaultinformation'
00000312 0/RP0/CPU0 0002 00000578 '/cfg/gl/rsi/vrf/.*/ord_z/afi_safi/.*/.*/de'
00000312 0/RP1/CPU0 0002 00000553 '/cfg/gl/rsi/vrf/.*/ord_z/afi_safi/.*/.*/de'
00000312 0/RP0/CPU0 0002 00000579 '/cfg/gl/rsi/vrf/.*/ord_z/afi_safi/.*/.*/de'
00000312 0/RP1/CPU0 0002 00000555 '/cfg/gl/rsi/vrf/.*/ord_z/afi_safi/.*/.*/de'
00000312 0/RP0/CPU0 0002 00000602 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000587 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000603 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000589 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000600 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000584 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000601 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000586 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000599 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000583 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000604 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000591 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000605 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP1/CPU0 0002 00000593 '/cfg/gl/eigrp/proc/.*/.*/.*/ord_m/af/.*/or'
00000312 0/RP0/CPU0 0002 00000565 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000540 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000570 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000543 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000585 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000562 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000576 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000550 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000560 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000538 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000580 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000557 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000541 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000530 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000581 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000559 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000546 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP1/CPU0 0002 00000532 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP0/CPU0 0002 00000552 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP1/CPU0 0002 00000534 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP0/CPU0 0002 00000556 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP1/CPU0 0002 00000536 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP0/CPU0 0002 00000574 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP1/CPU0 0002 00000547 '/cfg/gl/ip-bgp/.*/.*/ord_a/.*/nbr/.*/edm/.'
00000312 0/RP0/CPU0 0002 00000567 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000542 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000572 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000545 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000577 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000551 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000563 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
```

```
00000312 0/RP1/CPU0 0002 00000539 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000544 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000531 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000582 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP1/CPU0 0002 00000561 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/gbl/edm/ord_'
00000312 0/RP0/CPU0 0002 00000549 '/cfg/gl/ip-bgp/.*/.*/ord_b/.*/nbr/.*/edm/.'
--More-
```

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.

Reviewers: Please provide a more detailed command description if wrong.

show tech-support serial {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]} [**interface** *type instance*] [**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.

instance	Either a physical interface instance or a virtual interface instance as follows: • Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between values is required as part of the notation. – *rack*: Chassis number of the rack. – *slot*: Physical slot number of the modular services card or line card. – *module*: Module number. A physical layer interface module (PLIM) is always 0. – *port*: Physical port number of the interface. **Note** In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/CPU0/0. • Virtual interface instance. Number range varies depending on interface type. For more information about the syntax for the router, use the question mark (**?**) online help function.
show-only	(Optional) Collects only show command information.
terminal	Specifies that the command output is displayed on the terminal.
trace-only	(Optional) Collects only trace information.
location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 serial** command output that is displayed on the terminal:

Reviewers: Please provide the sample output for ASR

```
RP/0/RSP0/CPU0:router# show tech-support serial terminal page

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

                            show tech-support serial

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

----------------------------- show running-config -----------------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
```

```
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 13061E010803
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
 ipv4 address 10.12.31.1 255.255.255.0
```

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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]} [**location** *node-id* | **all**]

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.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 sanitized** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support sanitized terminal page

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

                                show tech-support

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


---------------------- show running-config (sanitized) ----------------------

Building configuration...
```

```
!! Last configuration change at Wed Oct 10 20:05:13 2007 by <removed>
!
hostname <removed>
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone <removed> 8
clock summer-time <removed> recurring 2 sunday march 02:00 first sunday novembe0
logging console informational
telnet vrf <removed> ipv4 server max-servers no-limit
domain ipv4 host <removed> 10.0.0.1
domain ipv4 host <removed> 10.0.0.2
domain ipv4 host <removed> 10.0.0.3
domain ipv4 host <removed> 10.0.0.4
domain ipv4 host <removed> 10.0.0.5
domain ipv4 host <removed> 10.0.0.6
domain ipv4 host <removed> 10.0.0.7
domain ipv4 host <removed> 10.0.0.8
domain ipv4 host <removed> 10.0.0.9
domain ipv4 host <removed> 10.0.0.10
domain ipv4 host <removed> 10.0.0.11
domain ipv4 host <removed> 10.0.0.12
domain ipv4 host <removed> 10.0.0.13
domain ipv4 host <removed> 10.0.0.14
domain lookup disable
username <removed>
 password 7 <removed>
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
alias <removed> <removed>
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 10.0.0.14 255.0.0.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
```

```
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 dot1q vlan 31
!
interface Bundle-POS24
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.0.0.14 255.0.0.0
!
interface MgmtEth0/4/CPU0/0
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface MgmtEth0/4/CPU1/0
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface MgmtEth0/RP0/CPU0/0
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface MgmtEth0/RP1/CPU0/0
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface GigabitEthernet0/1/5/0
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface GigabitEthernet0/1/5/1
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface GigabitEthernet0/1/5/2
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface GigabitEthernet0/1/5/3
 shutdown
!
interface GigabitEthernet0/1/5/4
 shutdown
!
interface GigabitEthernet0/1/5/5
```

```
 shutdown
!
interface GigabitEthernet0/1/5/6
 description <removed>
 bundle id 28 mode active
!
interface GigabitEthernet0/1/5/7
 description <removed>
 bundle id 28 mode active
!
interface GigabitEthernet0/6/5/0
 shutdown
!
interface GigabitEthernet0/6/5/1
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface GigabitEthernet0/6/5/2
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface GigabitEthernet0/6/5/3
 shutdown
!
interface GigabitEthernet0/6/5/4
 shutdown
!
interface GigabitEthernet0/6/5/5
 shutdown
!
interface GigabitEthernet0/6/5/6
 shutdown
!
interface GigabitEthernet0/6/5/7
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface POS0/1/0/0
 shutdown
!
interface POS0/1/0/1
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface POS0/1/0/2
 shutdown
!
interface POS0/1/0/3
 shutdown
!
interface POS0/1/4/0
 description <removed>
 bundle id 24 mode active
!
interface POS0/1/4/1
 description <removed>
 bundle id 24 mode active
!
interface POS0/1/4/2
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 encapsulation ppp
 ppp pap sent-username <removed> password encrypted <removed>
 ppp authentication chap pap
```

```
 ppp chap password encrypted <removed>
!
interface POS0/1/4/3
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
 encapsulation ppp
 ppp pap sent-username <removed> password encrypted <removed>
 ppp authentication chap pap
 ppp chap password encrypted <removed>
!
interface POS0/6/0/0
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface POS0/6/0/1
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface POS0/6/0/2
 shutdown
!
interface POS0/6/0/3
 description <removed>
 ipv4 address 10.0.0.14 255.0.0.0
!
interface POS0/6/4/0
```

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 {**diversion**} {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]} [**location** *node-id* | **all**]

Syntax Description

diversion	Collects information about packet diversion.
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.
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.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 services** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support services diversion terminal page

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

                    show tech-support service diversion

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

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

```
                                Global information

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


-------------------------------- show platform ---------------------------------
Node            Type            PLIM            State           Config State
--------------------------------------------------------------------------------
0/1/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/1/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/1/1           MSC(SPA)        4T3E3           OK              PWR,NSHUT,MON
0/1/4           MSC(SPA)        4XOC48-POS      OK              PWR,NSHUT,MON
0/1/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/4/CPU0        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
0/4/CPU1        DRP(Active)     DRP-ACC         IOS XR RUN      PWR,NSHUT,MON
0/6/CPU0        MSC             Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/6/0           MSC(SPA)        4XOC3-POS       OK              PWR,NSHUT,MON
0/6/4           MSC(SPA)        8XOC3/OC12-POS  OK              PWR,NSHUT,MON
0/6/5           MSC(SPA)        8X1GE           OK              PWR,NSHUT,MON
0/RP0/CPU0      RP(Active)      N/A             IOS XR RUN      PWR,NSHUT,MON
0/RP1/CPU0      RP(Standby)     N/A             IOS XR RUN      PWR,NSHUT,MON

------------------------------ show redundancy -------------------------------
Redundancy information for node 0/4/CPU0:
==========================================
Node 0/4/CPU0 is in ACTIVE role
Node 0/4/CPU0 has no valid partner

Reload and boot info
----------------------
DRP reloaded Thu Oct 11 19:23:45 2007: 6 days, 17 hours, 25 minutes ago
Active node booted Thu Oct 11 19:23:45 2007: 6 days, 17 hours, 25 minutes ago

Redundancy information for node 0/4/CPU1:
==========================================
Node 0/4/CPU1 is in ACTIVE role
Node 0/4/CPU1 has no valid partner

Reload and boot info
----------------------
DRP reloaded Thu Oct 11 19:24:38 2007: 6 days, 17 hours, 25 minutes ago
Active node booted Thu Oct 11 19:24:38 2007: 6 days, 17 hours, 25 minutes ago

Redundancy information for node 0/RP0/CPU0:
==========================================
Node 0/RP0/CPU0 is in ACTIVE role
Partner node (0/RP1/CPU0) is in STANDBY role
Standby node in 0/RP1/CPU0 is ready
Standby node in 0/RP1/CPU0 is NSR-ready

Reload and boot info
----------------------
RP reloaded Thu Oct 11 19:18:01 2007: 6 days, 17 hours, 31 minutes ago
Active node booted Thu Oct 11 19:18:01 2007: 6 days, 17 hours, 31 minutes ago
Standby node boot Thu Oct 11 19:17:51 2007: 6 days, 17 hours, 31 minutes ago
Standby node last went not ready Thu Oct 11 20:13:05 2007: 6 days, 16 hours, 36o
Standby node last went ready Thu Oct 11 20:13:06 2007: 6 days, 16 hours, 36 mino
Standby node last went not NSR-ready Thu Oct 11 19:29:45 2007: 6 days, 17 hourso
Standby node last went NSR-ready Thu Oct 11 19:29:45 2007: 6 days, 17 hours, 19o
There have been 0 switch-overs since reload


------------------------- show context location all --------------------------
```

```
node:      node0_1_CPU0
------------------------------------------------------------------

node:      node0_4_CPU0
------------------------------------------------------------------

Crashed pid = 41000 (pkg/bin/dsc)
Crashed tid = 5
Crash time: Mon Oct 15, 2007: 04:54:16
Core for process at harddisk:/dumper/dsc.node0_4_CPU0.ppc.Z

    Stack Trace
#0 0xfc1e6d90
#1 0xfc1e6d88
#2 0xfc1e53a0
#3 0xfc1e826c
#4 0xfc16b0c8
#5 0xfc16a7e4
#6 0xfc16a324
#7 0xfc16e7a8
#8 0xfc16ea08
#9 0x48200e20
               Registers info
            r0       r1       r2       r3
  R0   00000000  4811bc50  48215204  00000000
```

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 {**terminal** [**page**] | **file** *send-to* [**background**] [**compressed** | **uncompressed**]} [**shared-plane**] [**location** *node-id*]

Syntax Description

terminal	Displays the command output on the terminal.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.
file	Specifies that the command output is saved to a specified file.
sent-to	Name of the file. The following valid options are listed: • *filename* • **bootflash:***filename* • **disk0:***filename* • **disk0a:***filename* • **disk1:***filename* • **disk1a:***filename* • **ftp:***filename* • **harddisk:***filename* • **harddiska:***filename* • **harddiskb:***filename* • **nvram:***filename* • **rcp:***filename* • **tftp:***filename*
background	(Optional) Specifies that the command runs in the background.
compressed	(Optional) Displays compressed command output.
uncompressed	(Optional) Displays the command output with no compression.
shared-plane	(Optional) Displays the data for the shared plane.
location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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. 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 command references for information about these commands and descriptions of their command output. The Cisco IOS XR 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 sysdb** command output that is displayed on the terminal:

```
RP/0/RSP0/CPU0:router# show tech-support sysdb terminal page

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

                    show tech-support sysdb on location all

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

-------------------------------- show platform --------------------------------
Node            Type            PLIM            State           Config State
-------------------------------------------------------------------------------
0/1/CPU0        L3 Service Eng  N/A             IOS XR RUN      PWR,NSHUT,MON
0/2/CPU0        L3LC Eng 5+     Jacket Card     IOS XR RUN      PWR,NSHUT,MON
0/2/0           SPA             SPA-4XOC3-POS-V READY           PWR,NSHUT
0/2/1           SPA             SPA-IPSEC-2G-2  READY           PWR,NSHUT
0/4/CPU0        L3LC Eng 5+     Jacket Card     IOS XR RUN      PWR,NSHUT,MON
```

```
0/4/0           SPA             SPA-2X1GE-V2    READY           PWR,NSHUT
0/4/1           SPA             SPA-8X1FE-TX-V2 READY           PWR,NSHUT
0/5/CPU0        PRP(Active)     N/A             IOS XR RUN      PWR,NSHUT,MON

------------------------------ show redundancy ------------------------------
Redundancy information for node 0/5/CPU0:
==========================================
Node 0/5/CPU0 is in ACTIVE role
Node 0/5/CPU0 has no valid partner

Reload and boot info
----------------------
PRP reloaded Thu Oct 11 03:17:26 2007: 1 week, 18 hours, 10 minutes ago
Active node booted Thu Oct 11 03:17:26 2007: 1 week, 18 hours, 10 minutes ago


--------------------------- follow sysdb processes ----------------------------

Note that these commands will only run on the currently attached

node, regardless of location specified

These commands are run once now and once towards the end of the

command. This is to avoid the delay between iterations of follow


------------------ follow process 94284 iteration 1 verbose -------------------

Attaching to process pid = 94284 (pkg/bin/sysdb_mc)
No tid specified, following all threads

DLL Loaded by this process
------------------------------

DLL path                 Text addr. Text size  Data addr. Data size  Version
/pkg/lib/libsysmgr.dll   0xfc133000 0x00013750 0xfc147000 0x0000066c        0
/pkg/lib/libcerrno.dll   0xfc148000 0x00002f94 0xfc088eb0 0x00000128        0
/pkg/lib/libcerr_dll_tbl.dll 0xfc14b000 0x00004bb0 0xfc0c5cc0 0x00000148       0
/pkg/lib/libltrace.dll   0xfc150000 0x000095d8 0xfc14766c 0x00000328        0
/pkg/lib/lib_platform_infra_ltrace.dll 0xfc15a000 0x00001044 0xfc0c5e08 0x000000
/pkg/lib/libinfra.dll    0xfc15c000 0x000397b0 0xfc196000 0x00000cc0        0
/pkg/lib/cerrno/libinfra_error.dll 0xfc1211dc 0x00000cd8 0xfc0c5e90 0x000000a8 0
/pkg/lib/libios.dll      0xfc197000 0x0002d510 0xfc1c5000 0x00002000        0
/pkg/lib/cerrno/libevent_manager_error.dll 0xfc130144 0x00000e88 0xfc0c5f38 0x00
/pkg/lib/libss_common.dll 0xfc1c7000 0x000088f0 0xfc147994 0x00000274        0
/pkg/lib/libc.dll        0xfc1d0000 0x0007b6e0 0xfc24c000 0x00002000        0
/pkg/lib/lib_procfs_util.dll 0xfc252000 0x00004e8c 0xfc196cc0 0x000002a8       0
/pkg/lib/libplatform.dll 0xfc25e000 0x0000e144 0xfc26d000 0x00002000        0
/pkg/lib/libsyslog.dll   0xfc26f000 0x0000564c 0xfc25d258 0x00000328        0
/pkg/lib/libdebug.dll    0xfc275000 0x00012764 0xfc25d580 0x00000630        0
/pkg/lib/cerrno/libdebug_error.dll 0xfc26c144 0x00000db0 0xfc147e20 0x000000e8 0
/pkg/lib/lib_mbus_api.dll 0xfc288000 0x00014670 0xfc29d000 0x00002000        0
/pkg/lib/libc12000_device_info.dll 0xfc2be000 0x00002c40 0xfc147f70 0x00000068 0
/pkg/lib/libnodeid.dll   0xfc2c2000 0x00008204 0xfc25dbb0 0x000001e0        0
/pkg/lib/libshmwin.dll   0xfc474000 0x00013c1c 0xfc488000 0x00000834        0
/pkg/lib/cerrno/libshmwin_error.dll 0xfc489000 0x000013e0 0xfc3bef44 0x000000880
/pkg/lib/libgroup.dll    0xfc629000 0x00018fd4 0xfc642000 0x00000508        0
/pkg/lib/libsysdb.dll    0xfc643000 0x00050b00 0xfc694000 0x00000b74        0
/pkg/lib/libgsputils.dll 0xfc6ba000 0x0000aaa8 0xfc6c5000 0x000007e8        0
/pkg/lib/cerrno/libsysmgr_error.dll 0xfc5ca058 0x00000f94 0xfc5b3ecc 0x000000880
/pkg/lib/libsysdbutils.dll 0xfc6db000 0x0000d378 0xfc694b74 0x0000046c        0
/pkg/lib/cerrno/libsysdb_error_v1v2.dll 0xfc6eb000 0x00001e08 0xfc613d1c 0x00000
/pkg/lib/cerrno/libsysdb_error_v2only.dll 0xfc6f5000 0x00002848 0xfc613da4 0x000
```

```
/pkg/lib/cerrno/libsysdb_error_callback.dll 0xfc6fb000 0x0000168c 0xfc613f14 0x0
/pkg/lib/cerrno/libsysdb_error_distrib.dll 0xfc6fd000 0x0000183c 0xfc6c5c04 0x00
/pkg/lib/libltrace_shmem.dll 0xfc728000 0x00003714 0xfc6daae0 0x00000168       0
/pkg/lib/libens.dll      0xfc824000 0x0000f304 0xfc834000 0x00002000        0
/pkg/lib/libsysdbsvr_common.dll 0xfca28000 0x0000622c 0xfc9a95b0 0x00000288    0
/pkg/lib/libnrsutils.dll 0xfca53000 0x00004254 0xfca3ed64 0x000000e8        0
/pkg/lib/libnrs.dll      0xfcaf4000 0x00007fd4 0xfcaed958 0x00000628        0
/pkg/lib/cerrno/libnrs_error.dll 0xfcb39000 0x000015ec 0xfca8aebc 0x00000068   0
/pkg/lib/libasync.dll    0xfcb74000 0x0000cb10 0xfcb81000 0x00000b74        0
/pkg/lib/cerrno/libasync_error.dll 0xfca52010 0x00000ed8 0xfcb36f50 0x00000088 0
/pkg/lib/libport_un.dll  0xfd165000 0x00001678 0xfd0d0b30 0x00000068        0
/pkg/lib/libatc_cache.dll 0xfd243000 0x000063b4 0xfd242108 0x00000294        0

Iteration 1 of 1
------------------------------

Current process = "pkg/bin/sysdb_mc", PID = 94284 TID = 1 (main)
registers_info:             r0       r1       r2       r3
registers_info:   R0   00000020  481ffad0  4823b6c0  481ffb38
registers_info:             r4       r5       r6       r7
registers_info:   R4   00000000  0000000c  00000000  fc24c618
registers_info:             r8       r9      r10      r11
registers_info:   R8   fc250000  fc250000  481fffc0  00000000
registers_info:            r12      r13      r14      r15
registers_info:   R12  48231ee8  4823b510  481ffbb0  00000002
registers_info:            r16      r17      r18      r19
registers_info:   R16  481ffbc4  00000001  00000000  00000000
registers_info:            r20      r21      r22      r23
registers_info:   R20  00000001  481ffb38  00000001  48230000
registers_info:            r24      r25      r26      r27
registers_info:   R24  48220000  24000024  48238e60  00000000
registers_info:            r28      r29      r30      r31
registers_info:   R28  00000001  481ffaf8  48230000  00000000
```

show tech-support terminal

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

show tech-support terminal [**location** {*node-id* | **all**} | **page**]

REviewers: Is this command still supported? If yes, is it supported for CRS-1/XR12K and Viking? I could not see this on the router.

Syntax Description

location	(Optional) Specifies a node.
node-id	(Optional). Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	(Optional) Specifies all locations.
page	(Optional) Displays the command output on a single page at a time. Use the Return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks). Press the **Ctrl-C** keys to stop the command output.

Defaults

Reviewers: What are the default values or behaviors if any?

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	No modification.
Release 3.4.0	No modification.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.
Release 3.8.0	No modification.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

Tip This command can generate a very large amount of output. You may want to redirect the output to a file using the **file** *send-to* keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

This command generates terminal information that relates to debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See "Obtaining Documentation and Submitting a Service Request" section on page iii in the Preface for Cisco Technical Support contact information.

Note This command is not required during normal use of the router.

See the Cisco IOS XR command references for information about these commands and descriptions of their command output. The Cisco IOS XR command references are located at the following URL:

http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

Task ID	Operations
basic-services	read

Examples The following example shows some of the **show tech-support terminal** command output:

Please provide the modified sample output for this command as this example contains reference to POS interface.

```
RP/0/RSP0/CPU0:router# show tech-support terminal page

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

                                show tech-support

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


---------------------- show running-config (no password) ----------------------

Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
!
hostname P1_CRS-8
line console
 exec-timeout 600 0
 session-timeout 600
!
line default
 exec-timeout 600 0
 session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
```

```
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce7 172.29.52.78
domain ipv4 host p11 172.29.52.83
domain ipv4 host pe6 172.29.52.128
domain ipv4 host pe7 172.29.52.182
domain ipv4 host ce25 172.29.52.85
domain ipv4 host ce28 172.29.52.1
domain ipv4 host ce29 172.29.52.178
domain ipv4 host pe21 172.29.52.163
domain ipv4 host pe22 172.29.52.219
domain ipv4 host ce28_nme 172.29.52.177
domain ipv4 host ce29_nme 172.29.52.179
domain lookup disable
username P2_CRS-8
 password 7 <removed>
!
aps group 1
 revert 1
 channel 0 local SONET0/1/4/3
 channel 1 local SONET0/1/4/2
!
vty-pool default 0 25
alias cr copy run disk0:/usr/P1_base_config
alias sa show alias
alias sc show config commit list
alias sd show diag
alias si show ip int brief
alias sl show led
alias sm show mpls forwarding
alias sp show platform
alias sr show run
alias su show users
alias sv show version
alias sir show ip route
control-plane
 management-plane
  inband
   interface all
    allow all
   !
  !
 !
!
ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
 description Connected to P2_CRS-8 Bundle-Ether 28
 ipv4 address 10.12.28.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 1000000
!
interface Bundle-Ether28.1
 description Connected to P2_CRS-8 Bundle-Ether 28.1
 ipv4 address 10.12.29.1 255.255.255.0
 dot1q vlan 29
!
interface Bundle-Ether28.2
 description Connected to P2_CRS-8 Bundle-Ether 28.2
 ipv4 address 10.12.30.1 255.255.255.0
 dot1q vlan 30
!
interface Bundle-Ether28.3
 description Connected to P2_CRS-8 Bundle-Ether 28.3
```

```
 ipv4 address 10.12.31.1 255.255.255.0
 dot1q vlan 31
!
interface Bundle-POS24
 description Connected to P2_CRS-8 Bundle-POS 24
 ipv4 address 10.12.24.1 255.255.255.0
 bundle minimum-active links 1
 bundle minimum-active bandwidth 2488320
!
interface Loopback0
 ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.70 255.255.255.0
!
interface MgmtEth0/RP1/CPU0/0
 description Connected to Lab LAN
 ipv4 address 172.29.52.71 255.255.255.0
!
interface GigabitEthernet0/1/5/0
 description Connected to P2_CRS-8 GE 0/1/5/0
 ipv4 address 10.12.16.1 255.255.255.0
!
interface GigabitEthernet0/1/5/1
 description Connected to P4_C12810 GE 5/2
 ipv4 address 10.14.8.1 255.255.255.0
!
interface GigabitEthernet0/1/5/2
 description Connected to PE6_C12406 GE 0/4/0/1
 ipv4 address 10.16.4.1 255.255.255.0
!
interface GigabitEthernet0/1/5/3
 shutdown
!
interface GigabitEthernet0/1/5/4
 shutdown
!
interface GigabitEthernet0/1/5/5
 shutdown
!
interface GigabitEthernet0/1/5/6
 description Connected to P2_CRS-8 GE 0/1/5/6
 bundle id 28 mode active
!
interface GigabitEthernet0/1/5/7
 description Connected to P2_CRS-8 GE 0/1/5/7
 bundle id 28 mode active
!
interface GigabitEthernet0/6/5/0
 shutdown
!
interface GigabitEthernet0/6/5/1
 description Connected to P2_CRS-8 GE 0/6/5/1
 ipv4 address 10.12.20.1 255.255.255.0
!
```

```
interface GigabitEthernet0/6/5/2
 description Connected to PE6_C12406 GE 0/4/0/2
 ipv4 address 10.16.8.1 255.255.255.0
!
interface GigabitEthernet0/6/5/3
 shutdown
!
interface GigabitEthernet0/6/5/4
 shutdown
!
interface GigabitEthernet0/6/5/5
 shutdown
!
interface GigabitEthernet0/6/5/6
 shutdown
!
interface GigabitEthernet0/6/5/7
 description Connected to P2_CRS-8 GE 0/6/5/7
 ipv4 address 10.12.40.1 255.255.255.0
!
interface POS0/1/0/0
 shutdown
!
interface POS0/1/0/1
 description Connected to P2_CRS-8 POS 0/1/0/1
 ipv4 address 10.12.8.1 255.255.255.0
!
interface POS0/1/0/2
 shutdown
!
interface POS0/1/0/3
 shutdown
!
interface POS0/1/4/0
 description Connected to P2_CRS-8 POS 0/1/4/0
 bundle id 24 mode active
!
interface POS0/1/4/1
 description Connected to P2_CRS-8 POS 0/1/4/1
 bundle id 24 mode active
!
interface POS0/1/4/2
 description Connected to P2_CRS-8 POS 0/1/4/2
 ipv4 address 10.12.32.1 255.255.255.0
 encapsulation ppp
 ppp pap sent-username P1_CRS-8 password encrypted <removed>
 ppp authentication chap pap
 ppp chap password encrypted <removed>
!
interface POS0/1/4/3
```

Watchdog Commands on Cisco ASR 9000 Series Router

This module describes the commands that are used to monitor the memory states and thresholds of Cisco ASR 9000 Series Aggregation Services Routers.

show critmon context

To display information about the context for the wd-critical-mon process, use the **show critmon context** command in EXEC mode and in administration 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.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 7 describes the significant fields shown in the display.

Table 7 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

Table 7 show critmon context Field Descriptions (continued)

Field	Description
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 montoring 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.
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	Displays information about the deadline for monitoring.
show critmon statistics	Displays information about critical statistics.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info	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 and in administration 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.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 8 describes the significant fields shown in the display.

Table 8 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	Displays information about the context for the critical monitor.
show critmon statistics	Displays information about critical statistics.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info	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 and in administration 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.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 9 describes the significant fields shown in the display.

Table 9 show critmon statistics Field Descriptions

Field	Description
Ticker statistics info	Ticker thread statistics information that is used for the node.
Period	Statistics sampling period.

Table 9 show critmon statistics Field Descriptions (continued)

Field	Description
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.
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	Displays information about the context for the critical monitor.
show critmon deadline	Displays information about the deadline for monitoring.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info	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 and in administration 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	(Optional) Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	Displays information about the context for the critical monitor.
show critmon deadline	Displays information about the deadline for monitoring.
show critmon statistics	Displays information about critical statistics.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info	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 and in administration 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.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	Displays information about the context for the critical monitor.
show critmon deadline	Displays information about the deadline for monitoring.
show critmon statistics	Displays information about critical statistics.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info	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 and in administration 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	(Optional) Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	Displays information about the context for the critical monitor.
show critmon deadline	Displays information about the deadline for monitoring.
show critmon statistics	Displays information about critical statistics.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace lib-error	Displays information about the trace data for the library error for the critical monitor.
show critmon trace lib-info	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 and in administration 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	(Optional) Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	Displays information about the context for the critical monitor.
show critmon deadline	Displays information about the deadline for monitoring.
show critmon statistics	Displays information about critical statistics.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-info	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 and in administration 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	(Optional) Specifies a node.
node-id	Node ID. The *node-id* argument is entered in the *rack/slot/module* notation.
all	Specifies all locations.

Defaults

No default behavior or values

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	Displays information about the context for the critical monitor.
show critmon deadline	Displays information about the deadline for monitoring.
show critmon statistics	Displays information about critical statistics.
show critmon trace all	Displays information about all traces for a critical monitor.
show critmon trace error	Displays information about error traces for a critical monitor.
show critmon trace info	Displays trace data for an information type for the critical monitor.
show critmon trace lib-error	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.

Defaults

Are there any default values?

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

Task ID

Task ID	Operations
system	read

Examples

The following sample output is from the **show reboot first** command:

```
RP/0/RSP0/CPU0:router# show reboot first
```

Related Commands

Command	Description
show reboot graceful	Displays reboot information for the last graceful reboot for a node.
show reboot history	Displays reboot information for the last graceful reboot.
show reboot last	Displays the latest crash information.
show reboot pcds	Displays Persistent Critical Data Store (PCDS) 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.

Defaults

Please provide default values, if any

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 10 describes the significant fields shown in the display.

Table 10 show reboot graceful Field Descriptions

Field	Description
Reboot Time	*Reviewers: What is the field description?*
Reboot Cause	*Reviewers: What is the field description?*
Reboot Reason	*Reviewers: What is the field description?*
Trace log	*Reviewers: What is the field description?*

Related Commands

Command	Description
show reboot first	Displays reboot information for a node first.
show reboot history	Displays reboot information for the last graceful reboot.
show reboot last	Displays the latest crash information.
show reboot pcds	Displays Persistent Critical Data Store (PCDS) 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.

Defaults

Please provide default values, if any

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 11 describes the significant fields shown in the display.

Table 11 show reboot history Field Descriptions

Field	Description
No	*Reviewers: What is the field description?*
Time	*Reviewers: What is the field description?*
Cause Code	*Reviewers: What is the field description?*
Reason	*Reviewers: What is the field description?*

Related Commands

Command	Description
show reboot first	Displays reboot information for a node first.
show reboot graceful	Displays reboot information for the last graceful reboot for a node.
show reboot last	Displays the latest crash information.
show reboot pcds	Displays Persistent Critical Data Store (PCDS) 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

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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
```

Table 12 describes the significant fields shown in the display.

Table 12 show reboot last Field Descriptions

Field	Description
Crashinfo Timestamp	*Reviewers: What is the field description?*
Crash Reason	*Reviewers: What is the field description?*
Cause code	*Reviewers: What is the field description?*
Active process(s)	*Reviewers: What is the field description?*
REGISTER INFO	*Reviewers: What is the field description?*
SUPERVISOR REGISTERS	*Reviewers: What is the field description?*

Table 12 show reboot last Field Descriptions (continued)

Field	Description
Memory Management Registers	*Reviewers: What is the field description?*
Instruction BAT Registers	*Reviewers: What is the field description?*
Index	*Reviewers: What is the field description?*
Value	*Reviewers: What is the field description?*
Data BAT Registers	*Reviewers: What is the field description?*
Segment Registers	*Reviewers: What is the field description?*
Exception Handling Registers	*Reviewers: What is the field description?*
Data Addr Reg	*Reviewers: What is the field description?*
Miscellaneous Registers	*Reviewers: What is the field description?*
Processor Id Reg	*Reviewers: What is the field description?*
STACK TRACE	*Reviewers: What is the field description?*

Related Commands

Command	Description
show reboot first	Displays reboot information for a node first.
show reboot graceful	Displays reboot information for the last graceful reboot for a node.
show reboot history	Displays reboot information for the last graceful reboot.
show reboot pcds	Displays Persistent Critical Data Store (PCDS) 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

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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	Displays reboot information for a node first.
show reboot graceful	Displays reboot information for the last graceful reboot for a node.
show reboot history	Displays reboot information for the last graceful reboot.
show reboot last	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** | **defaults**}] [**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.
defaults	Displays the default 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.

Defaults

The command output is not compressed.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.2	This command was introduced on the Cisco ASR 9000 Series Router.
Release 3.9.0	No modification.

Usage Guidelines

To use this command, your Cisco IOS XR software system administrator must assign you to a user group associated with a task group that includes the corresponding command task IDs. If you need assistance with your task group assignment, contact your system administrator. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide*.

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

Memory information:
```

```
Physical Memory: 4096     MB
Free Memory:     3170.429 MB
Memory State:         Normal
```

Table 13 describes the significant fields shown in the display.

Table 13 show watchdog Field Descriptions

Field	Description
Memory information	*Reviewers: What is the field description?*
Physical Memory	*Reviewers: What is the field description?*
Free Memory	*Reviewers: What is the field description?*
Memory State	*Reviewers: What is the field description?*

Related Commands

Command	Description
watchdog threshold memory	Configures the value of memory available for each alarm threshold.

INDEX

AR	Cisco IOS XR Advanced System Command Reference
HR	Cisco IOS XR Interface and Hardware Component Command Reference
IR	Cisco IOS XR IP Addresses and Services Command Reference
MCR	Cisco IOS XR Multicast Command Reference
MNR	Cisco IOS XR System Monitoring Command Reference
MPR	Cisco IOS XR MPLS Command Reference
QR	Cisco IOS XR Modular Quality of Service Command Reference
RR	Cisco IOS XR Routing Command Reference
SMR	Cisco IOS XR System Management Command Reference
SR	Cisco IOS XR System Security Command Reference

A

C

S

W