Tech-Support Commands

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 system verify, page 3
- show tech-support, page 7
- show tech-support aps, page 11
- show tech-support asic, page 23
- show tech-support bcdl, page 26
- show tech-support bundles, page 29
- show tech-support cef, page 32
- show tech-support cfgmgr, page 36
- show tech-support chdlc, page 38
- show tech-support control-ethernet, page 40
- show tech-support dsc, page 45
- show tech-support ethernet, page 50
- show tech-support fabric, page 53
- show tech-support gsp, page 57
- show tech-support igmp snooping, page 61
- show tech-support install, page 69
- show tech-support l2tp, page 73
- show tech-support l2vpn, page 77
- show tech-support lrd, page 82
- show tech-support mpls ldp, page 93
• show tech-support mpls optical-uni, page 96
• show tech-support mpls rsvp, page 98
• show tech-support mpls traffic-eng, page 104
• show tech-support multicast, page 109
• show tech-support netflow, page 114
• show tech-support nrs, page 116
• show tech-support password, page 118
• show tech-support pfi, page 120
• show tech-support placement, page 123
• show tech-support platform, page 126
• show tech-support pos, page 130
• show tech-support ppp, page 135
• show tech-support qos, page 138
• show tech-support rdsfs, page 140
• show tech-support rib, page 142
• show tech-support routing bfd, page 144
• show tech-support routing isis, page 147
• show tech-support routing ospf, page 152
• show tech-support routing ospfv3, page 156
• show tech-support routing rpl, page 159
• show tech-support serial, page 162
• show tech-support sanitized, page 165
• show tech-support services, page 171
• show tech-support snmp, page 173
• show tech-support spaipc, page 175
• show tech-support sysdb, page 180
• show tech-support terminal, page 182
show system verify

To verify the system parameters, use the `show system verify` command in EXEC mode.

```
show system verify [start| restart [detail]]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>start</td>
<td>(Optional) Performs an initial analysis of the system and stores the information for subsequent verification.</td>
</tr>
<tr>
<td>report</td>
<td>(Optional) Generates a report for the system verification process.</td>
</tr>
<tr>
<td>detail</td>
<td>(Optional) Generates a detailed report for the system verification process.</td>
</tr>
</tbody>
</table>

**Command Default**

No default behavior or values

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

You must run the `show system verify` command with the `start` keyword before generating any reports.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>system</td>
<td>read</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows how to prepare for system verification:

```
RP/0/RP0/CPU0:router# show system verify start
Storing initial router status ...
done.
```
The following example shows output from running the `show system verify` command:

```
RP/0/RP0/CPU0:router# show system verify

Getting current router status ...
System Verification Report
--------------------------
- Verifying Memory Usage     : [OK]
- Verified Memory Usage      : [OK]
- Verifying CPU Usage        : [OK]
- Verified CPU Usage         : [OK]
- Verifying Blocked Processes: [OK]
- Verified Blocked Processes : [OK]
- Verifying Aborted Processes: [OK]
- Verified Aborted Processes : [OK]
- Verifying Crashed Processes: [OK]
- Verified Crashed Processes : [OK]
- Verifying LC Status        : [OK]
- Verified LC Status         : [OK]
- Verifying QNET Status      : [FAIL]
Unable to get current LC status info
- Verified QNET Status       : [FAIL]
- Verifying GSP Fabric Status: [OK]
- Verified GSP Fabric Status : [OK]
- Verifying GSP Ethernet Status
  gsp WARNING messages for router
  Current set of gsp ping nodes does not match initial set of nodes
- Verified GSP Ethernet Status: [WARNING]
- Verifying POS interface Status : [OK]
- Verified POS interface Status : [OK]
- Verifying TenGigE interface Status : [OK]
- Verified TenGigE interface Status : [OK]
- Verifying TCP statistics   : [OK]
- Verified TCP statistics    : [OK]
- Verifying UDP statistics  tcp_udp_raw WARNING messages for router
  UDP Packets sent has not increased during this period.
- Verified UDP statistics    : [WARNING]
- Verifying RAW statistics   : [OK]
- Verified RAW statistics    : [OK]
- Verifying RIB Status       : [OK]
- Verified RIB Status        : [OK]
- Verifying CEF Status       : [OK]
- Verified CEF Status        : [OK]
- Verifying CEF Consistency Status : [OK]
- Verified CEF Consistency Status : [OK]
- Verifying BGP Status       : [OK]
- Verified BGP Status        : [OK]
- Verifying ISIS Status      : [OK]
- Verified ISIS Status       : [OK]
- Verifying OSPF Status      : [OK]
- Verified OSPF Status       : [OK]
- Verifying Syslog Messages  : [OK]
- Verified Syslog Messages   : [OK]

System may not be stable. Please look into WARNING messages.
```

This table describes the significant fields shown in the display.
### Table 1: show system verify Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Type of memory</td>
</tr>
<tr>
<td>Initial</td>
<td>Initial usage determined when the command is run with the <strong>start</strong> keyword</td>
</tr>
<tr>
<td>Current</td>
<td>Current usage</td>
</tr>
<tr>
<td>Application</td>
<td>Memory used for applications</td>
</tr>
<tr>
<td>Available</td>
<td>Memory available for applications</td>
</tr>
<tr>
<td>Physical</td>
<td>Total physical memory</td>
</tr>
<tr>
<td>nodes</td>
<td>Devices in the system such as linecards, route processors, fabric cards, and so forth</td>
</tr>
<tr>
<td>blocked processes</td>
<td>Number of blocked processes on the router</td>
</tr>
<tr>
<td>aborted processes</td>
<td>Number of aborted processes on the router</td>
</tr>
<tr>
<td>crashed processes</td>
<td>Number of crashed processes on the router</td>
</tr>
<tr>
<td>LC Status on Router</td>
<td>Linecard status</td>
</tr>
<tr>
<td>QNET Status on router</td>
<td>Internal communications protocol status</td>
</tr>
<tr>
<td>GSP Fabric Status on router</td>
<td>Internal communications protocol status</td>
</tr>
<tr>
<td>GSP Ethernet Status on router</td>
<td>Internal communications protocol status</td>
</tr>
<tr>
<td>POS Interface Status on router</td>
<td>Packet-over-SONET status</td>
</tr>
<tr>
<td>Protocol</td>
<td>Protocol on the interface</td>
</tr>
<tr>
<td>IP address</td>
<td>IP Address of the interface</td>
</tr>
<tr>
<td>Encapsulation</td>
<td>Encapsulation method used on the interface</td>
</tr>
<tr>
<td>MTU</td>
<td>Maximum Transmission Units for the interface</td>
</tr>
<tr>
<td>Keep alive</td>
<td>Keep alives messages on the interface</td>
</tr>
<tr>
<td>Packets Input</td>
<td>Total number packets input to the interface</td>
</tr>
<tr>
<td>Bytes Input</td>
<td>Total number of bytes input to the interface</td>
</tr>
<tr>
<td>Packets Output</td>
<td>Total number of packets output by the interface</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Byte Output</td>
<td>Total number of bytes output by the interface</td>
</tr>
<tr>
<td>TenGigE interface Status on router</td>
<td>10 Gigabit Ethernet interface status</td>
</tr>
<tr>
<td>TCP statistics on router</td>
<td>Transmission Control Protocol statistics</td>
</tr>
<tr>
<td>UDP statistics on router</td>
<td>User Datagram Protocol statistics</td>
</tr>
<tr>
<td>RAW statistics on router</td>
<td>RAW statistics</td>
</tr>
<tr>
<td>PCBs</td>
<td>Protocol Control Blocks</td>
</tr>
<tr>
<td>RIB Status on router</td>
<td>Routing Information Base status</td>
</tr>
<tr>
<td>CEF Status on node...</td>
<td>Cisco Express Forwarding status</td>
</tr>
<tr>
<td>CEF Consistency Status on router</td>
<td>Cisco Express Forwarding consistency status</td>
</tr>
<tr>
<td>BGP Status on router</td>
<td>Border Gateway Protocol status</td>
</tr>
<tr>
<td>neighbors</td>
<td>Number of BGP neighbors</td>
</tr>
<tr>
<td>established</td>
<td>Number of BGP neighbors in 'established' state</td>
</tr>
<tr>
<td>ISIS Status on router</td>
<td>Intermediate System-to-Intermediate System status</td>
</tr>
<tr>
<td>up</td>
<td>Number of ISIS links up</td>
</tr>
<tr>
<td>failed</td>
<td>Number of failed ISIS links</td>
</tr>
<tr>
<td>init</td>
<td>Initial number of ISIS links</td>
</tr>
<tr>
<td>OSPF Status on router</td>
<td>Open Shortest Path First status</td>
</tr>
<tr>
<td>interfaces</td>
<td>Number of interfaces configured in OSPF</td>
</tr>
<tr>
<td>interfaces_up</td>
<td>Number of interfaces configured in OSPF that are in the 'up' state</td>
</tr>
<tr>
<td>virtual_int</td>
<td>Number of virtual interfaces</td>
</tr>
<tr>
<td>neighbors</td>
<td>Number of OSPF neighbors configured</td>
</tr>
<tr>
<td>neighbors_adj</td>
<td>Number of OSPF configured neighbors that are 'adjacent'</td>
</tr>
<tr>
<td>Syslog Messages on router</td>
<td>Number of syslog messages</td>
</tr>
</tbody>
</table>
**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

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>password</strong></td>
<td>(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 &quot;&lt;removed&gt;&quot;.</td>
</tr>
<tr>
<td><strong>terminal</strong></td>
<td>Displays command output on the terminal.</td>
</tr>
</tbody>
</table>
| **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. |
show tech-support

### Command Syntax

- **compressed** *(Optional)* Displays compressed command output.
- **uncompressed** *(Optional)* Displays the command output with no compression.
- **location node-id** *(Optional)* Specifies a node. The *node-id* argument is entered in the *rack/slot/module* notation.

### Command Default

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

### Command Modes

- Administration EXEC
- EXEC

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

**Tip**

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

**Note**

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

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

- `show running-config`
- `show version`
- `show interfaces`
- `show arm summary`
- `show arm conflicts`
• show install
• show filesystem
• dir location all: pwd = disk0:
• dir location all: pwd = bootflash:
• run top_procs
• show processes aborts location all
• show processes blocked location all
• show placement nodes all
• show placement policy program all
• show memory summary location all
• show lpts ifib brief
• show im database all
• run gsp_show
• show context all location all
• show redundancy
• show dsc all
• show lr all
• show ipv4 traffic
• show ipv6 traffic
• show logging
• show inventory
• show packet-memory
• show packet-memory corrupt
• show packet-memory failures
• show platform
• show led
• show buffer reserved-memory
• show controllers fabricq eio links all
• show controllers pse eio links all
• show controllers plim asic pla eio links all
• show controllers fia eio links all
• show controllers cpuctrl summary
• admin show controllers fabric plane all
- admin show controllers fabric plane all stat
- admin show controllers fabric sfe fabricq all detail
- admin show controllers fabric sfe ingressq all detail
- admin show controllers fabric sfe s1 all detail
- admin show controllers fabric sfe s2 all detail
- admin show controllers fabric sfe s3 all detail
- show environment all

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services or cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support aps

To automatically run show commands that display debugging information related to automatic protection switching (APS), use the show tech-support aps command in the EXEC mode. This command collects APS traces and sonet local traces across all locations and also show controller and show aps commands for all ports and groups.

show tech-support aps file send-to [group] show-only [location node-id]

Syntax Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>group</td>
<td>(Optional) Displays the show group commands with no trace for APS debugging.</td>
</tr>
<tr>
<td>show-only</td>
<td>(Optional) Displays the show commands with no trace for APS debugging.</td>
</tr>
<tr>
<td>terminal</td>
<td>(Optional) Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td>node-id</td>
<td>(Optional) Node ID. The node-id argument is entered in the rack/slot/module notation.</td>
</tr>
</tbody>
</table>
**Command Default**

The command output is not compressed.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.9.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

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

Use the `show tech-support aps` command to run `show` commands that display APS debugging information. This command generates information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

**Note**

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

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows a truncated output of the `show tech-support aps` command:

```
RP/0/RP0/CPU0:router# show tech-support aps show-only terminal
---------------------------------------------------------------
show tech-support aps
---------------------------------------------------------------

--------------------------------------------------------------- show aps
no aps group found

--------------------------------------------------------------- show aps agents
```
APS shows Agent: sysdb_datalist failed: ('sysdb' detected the 'warning' condition

---------------------------- show controller sonet * ----------------------------

Port SONET0/6/0/0:

Status: Up

Loopback: None

SECTION

LOF = 0  LOS = 1  BIP(B1) = 0
LINE

AIS = 0  RDI = 1  FEBE = 0  BIP(B2) = 0

PATH

AIS = 0  RDI = 1  FEBE = 0  BIP(B3) = 0

LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0

PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None

Mask for Detected->Asserted: None

Detected Alerts: None
Reported Alerts: None

Mask for Detected->Reported: None

Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled

C2 State: Stable  C2_rx = 0x16 (22)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
Remote hostname : P11_CRS-4
Remote interface : POS0/2/0/0
Remote IP addr : 10.111.4.11

APS
No APS Group Configured
Rx(K1/K2) : 0x00/0x00
Tx(K1/K2) : 0x00/0x00
Remote Rx(K1/K2): 01/0  Remote Tx(K1/K2): 01/0

BER thresholds: SF = 10e-3  SD = 10e-6
TCA thresholds: B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: OC3 SR-1/STM1 MM
Clock source: internal (actual) internal (configured)
Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Rx power = 0.0160 mW, -18.0 dBm
Tx power = 0.0000 mW, -inf dBm
Tx laser current bias = 0.0 mA

Port SONET0/6/0/1:

Status: Up

Loopback: None

SECTION

LOF = 0  LOS = 1  BIP(B1) = 0
LINE

AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0x16 (22)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived
PATH TRACE BUFFER : STABLE
Remote hostname : P2_CRS-8
Remote interface: POS0/6/0/1
Remote IP addr : 10.12.8.2

APS
No APS Group Configured
Protect Channel 0  DISABLED
Rx(K1/K2) : 0x00/0x00
Tx(K1/K2) : 0x00/0x00
Remote Rx(K1/K2): 01/0  Remote Tx(K1/K2): 01/0

BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: OC3 SR-1/STM1 MM
Clock source: internal (actual)  internal (configured)
Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Rx power = 0.0223 mW, -16.5 dBm
Tx power = 0.0000 mW, -inf dBm
Tx laser current bias = 0.0 mA

Port SONET0/6/0/2:
Status: Down
Loopback: None

SECTION
LOF = 0  LOS = 1  BIP(B1) = 0
LINE
AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOF = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0x6D (109)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x2 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
Remote hostname :
Remote interface:
Remote IP addr :

APS
No APS Group Configured
Protect Channel 0 DISABLED
Rx(K1/K2) : 0x00/0x00
Tx(K1/K2) : 0x00/0x00
Remote Rx(K1/K2): 1/  Remote Tx(K1/K2): 1/

BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: None
Clock source: internal (actual) line (configured)
Rx S1: 0xe  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Not Supported

Port SONET0/6/0/3:
Status: Up
Loopback: None

SECTION
LOF = 0  LOS = 0  BIP(B1) = 0
LINE
AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger:  0 ms clear: 10000 ms
Path delays trigger:  0 ms,  0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None

Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0x16 (22)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
Remote hostname : PE21_C12406
Remote interface: POS0/2/0/3
Remote IP addr : 10.121.4.21

APS
No APS Group Configured
Protect Channel 0 DISABLED
Rx(K1/K2) : 0x00/0x00
show tech-support aps

Port SONET0/6/4/0:

Status: Down

Loopback: None

SECTION

LOF = 0 LOS = 1 BIP(B1) = 0

LINE

AIS = 0 RDI = 0 FEBE = 0 BIP(B2) = 0

PATH

AIS = 0 RDI = 0 FEBE = 0 BIP(B3) = 0

LOF = 0 NEWPTR = 0 FSE = 0 NSE = 0

PLM = 0 TIM = 0 UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms

Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET

SPE Scrambling: Enabled
C2 State: Stable C2_rx = 0xFF (255) C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0 S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE

Remote hostname :
Remote interface:
Remote IP addr :

APS
No APS Group Configured

Rx(K1/K2) : 0x00/0x00
Tx(K1/K2) : 0x00/0x00
Remote Rx(K1/K2): 0/0 Remote Tx(K1/K2): 0/0

BER thresholds: SF = 10e-3 SD = 10e-6
TCA thresholds: B1 = 10e-6 B2 = 10e-6 B3 = 10e-6

Optics type: None
Clock source: internal (actual) line (configured)
Rx S1: 0x0 Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Rx power = 0.0206 mW, -16.9 dBm
Tx power = 0.0000 mW, -inf dBm
Tx laser current bias = 0.0 mA

Port SONET0/6/4/1:
Status: Down
Loopback: None

SECTION
LOF = 0  LOS = 1  BIP(B1) = 0
LINE
AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0xFF (255)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived
PATH TRACE BUFFER : UNSTABLE
Remote hostname:
Remote interface:
Remote IP addr:

APS
No APS Group Configured
Protect Channel 0  DISABLED
Rx(K1/K2): 0x00/0x00
Tx(K1/K2): 0x00/0x00
Remote Rx(K1/K2): 1/ Remote Tx(K1/K2): 1/

BER thresholds: SF = 10e-3  SD = 10e-6
TCA thresholds: B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: None
Clock source: internal (actual) line (configured)
Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Not Supported

Port SONET0/6/4/2:
Status: Down
Loopback: None

SECTION
LOF = 0  LOS = 1  BIP(B1) = 0
LINE
AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never
Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable C2_rx = 0xEF (239) C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0 S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER: UNSTABLE
Remote hostname:
Remote interface:
Remote IP addr:

APS
No APS Group Configured
Protect Channel 0 DISABLED
Rx(K1/K2): 0x00/0x00
Tx(K1/K2): 0x00/0x00
Remote Rx(K1/K2): 1/ Remote Tx(K1/K2): 1/

BER thresholds: SF = 10e-3 SD = 10e-6
TCA thresholds: B1 = 10e-6 B2 = 10e-6 B3 = 10e-6

Optics type: None
Clock source: internal (actual) line (configured)
Rx S1: 0x0 Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Not Supported
Port SONET0/6/4/3:
Status: Down
Loopback: None

SECTION
LOF = 0 LOS = 1 BIP(B1) = 0
LINE
AIS = 0 RDI = 0 FEBE = 0 BIP(B2) = 0
PATH
AIS = 0 RDI = 0 FEBE = 0 BIP(B3) = 0
LOP = 0 NEWPTR = 0 PSE = 0 NSE = 0
PLM = 0 TIM = 0 UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable C2_rx = 0xFF (255) C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0 S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER: UNSTABLE
Remote hostname:
Remote interface:
Remote IP addr:

APS
No APS Group Configured
Protect Channel 0 DISABLED
Rx(K1/K2): 0x00/0x00
Tx(K1/K2): 0x00/0x00
Remote Rx(K1/K2): 1/ Remote Tx(K1/K2): 1/

BER thresholds: SF = 10e-3 SD = 10e-6
TCA thresholds: B1 = 10e-6 B2 = 10e-6 B3 = 10e-6

Optics type: None
Clock source: internal (actual) line (configured)
Rx S1: 0x0 Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Not Supported

Port SONET0/6/4/4:

Status: Up
Loopback: None

SECTION

LOF = 0 LOS = 0 BIP(B1) = 0

LINE
AIS = 0 RDI = 0 FEBE = 0 BIP(B2) = 0

PATH
AIS = 0 RDI = 0 FEBE = 0 BIP(B3) = 0

LOP = 0 NEWPTR = 0 PSE = 0 NSE = 0

PLM = 0 TIM = 0 UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable C2_rx = 0x16 (22) C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0 S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER: STABLE
Remote hostname: P4_C12810
Remote interface: POS0/3
Remote IP addr: 10.14.4.4

APS
No APS Group Configured
Protect Channel 0 DISABLED
Rx(K1/K2): 0x00/0x00
Tx(K1/K2): 0x00/0x00
Remote Rx(K1/K2): F1/F Remote Tx(K1/K2): 00/0

BER thresholds: SF = 10e-3 SD = 10e-6
TCA thresholds: B1 = 10e-6 B2 = 10e-6 B3 = 10e-6

Optics type: OC12 SR-1/STM4 MM
Clock source: internal (actual) internal (configured)
Rx S1: 0xf Tx S1: 0xf
Optical Power Monitoring (accuracy: +/- 1dB)
- Rx power = 0.0184 mW, -17.4 dBm
- Tx power = 0.0000 mW, -inf dBm
- Tx laser current bias = 0.0 mA

Port SONET0/6/4/5:
- Status: Up
- Loopback: None

SECTION
  LOF = 0  LOS = 1  BIP(B1) = 0
  LINE
  AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
  PATH
  AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
  LOF = 0  NEWPTR = 0  PSE = 0  NSR = 0
  PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0x16 (22)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : STABLE
  Remote hostname : P2_CRS-8
  Remote interface: POS0/6/4/5
  Remote IP addr : 10.12.4.2

APS
No APS Group Configured
  Protect Channel 0  DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 01/0  Remote Tx(K1/K2): 01/0

BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: OC12 SR-1/STM4 MM
Clock source: internal (actual)  internal (configured)
  Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
- Rx power = 0.0193 mW, -17.1 dBm
- Tx power = 0.0000 mW, -inf dBm
- Tx laser current bias = 0.0 mA

Port SONET0/6/4/6:
- Status: Up
- Loopback: None

SECTION
  LOF = 1  LOS = 0  BIP(B1) = 0
  LINE
  AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: None
Asserted Alarms: None
Mask for Detected->Asserted: None
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: None
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA

Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0x16 (22)  C2_tx = 0x16 (22)  / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0  / Framing Derived

PATH TRACE BUFFER : STABLE
Remote hostname : P3_C12008
Remote interface: POS5/2
Remote IP addr : 10.13.4.3

APS
No APS Group Configured
Protect Channel 0  DISABLED
Rx(K1/K2) : 0x00/0x00
Tx(K1/K2) : 0x00/0x00
Remote Rx(K1/K2): 00/0  Remote Tx(K1/K2): 00/0

BER thresholds: SF = 10e-3  SD = 10e-6
TCA thresholds: B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: OC12 SR-1/STM4 MM
Clock source: internal (actual) internal (configured)
Rx S1: 0xf  Tx S1: 0xf

Optical Power Monitoring (accuracy: +/- 1dB)
Rx power = 0.0142 mW, -18.5 dBm
Tx power = 0.0000 mW, -inf dBm
Tx laser current bias = 0.0 mA

Port SONET0/6/4/7:
Status: Down
Loopback: None

SECTION
LOF = 0  LOS = 1  BIP(B1) = 0
LINE
AIS = 0  RDI = 0  FEBE = 0  BIP(B2) = 0
PATH
AIS = 0  RDI = 0  FEBE = 0  BIP(B3) = 0
LOP = 0  NEWPTR = 0  PSE = 0  NSE = 0
PLM = 0  TIM = 0  UNEQ = 0

Line delays trigger: 0 ms clear: 10000 ms
Path delays trigger: 0 ms, 0 ms (configured), clear: 10000 ms
Last clearing of "show controllers SONET" counters never

Detected Alarms: SLOS
Asserted Alarms: SLOS
Mask for Detected->Asserted: SLOF LAIS SF_BER SD_BER LRDI PLOP PAIS PRDI PUNEQ
Detected Alerts: None
Reported Alerts: None
Mask for Detected->Reported: B1-TCA B2-TCA B3-TCA
Alarm reporting enabled for: SLOS SLOF SF_BER PLOP
Alert reporting enabled for: B1-TCA B2-TCA B3-TCA
Framing: SONET
SPE Scrambling: Enabled
C2 State: Stable  C2_rx = 0xF7 (247)  C2_tx = 0x16 (22) / Scrambling Derived
S1S0(tx): 0x0  S1S0(rx): 0x0 / Framing Derived

PATH TRACE BUFFER : UNSTABLE
  Remote hostname :  
  Remote interface :  
  Remote IP addr :  

APS
  No APS Group Configured
  Protect Channel 0 DISABLED
  Rx(K1/K2) : 0x00/0x00
  Tx(K1/K2) : 0x00/0x00
  Remote Rx(K1/K2): 1/  Remote Tx(K1/K2): 1/

BER thresholds:  SF = 10e-3  SD = 10e-6
TCA thresholds:  B1 = 10e-6  B2 = 10e-6  B3 = 10e-6

Optics type: None
Clock source: internal (actual)  internal (configured)
Rx S1: 0x0  Tx S1: 0xf

Optical Power Monitoring {accuracy: +/- 1dB}
  Not Supported

-------------------------------------------------------------------------------------------------------------------
show tech-support aps complete
-------------------------------------------------------------------------------------------------------------------
show tech-support asic

To save a snapshot of ASIC information specific to ASIC debugging, use the show tech-support asic command in administration EXEC mode.

```
show tech-support asic {name| all| cpuctrl| fabricq| ingressq| pse} {directory path| instance instance directory path} [location node-id]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>ASIC name.</td>
</tr>
<tr>
<td>all</td>
<td>Specifies all ASICs.</td>
</tr>
<tr>
<td>cpuctrl</td>
<td>Specifies CPU controller ASICs.</td>
</tr>
<tr>
<td>fabricq</td>
<td>Specifies fabric queue ASICs.</td>
</tr>
<tr>
<td>ingressq</td>
<td>Specifies ingress queue ASICs.</td>
</tr>
<tr>
<td>pse</td>
<td>Specifies power sourcing equipment ASICs.</td>
</tr>
<tr>
<td>directory</td>
<td>Directory to save the ASIC snapshot in.</td>
</tr>
<tr>
<td>path</td>
<td>Path of the directory.</td>
</tr>
<tr>
<td>instance</td>
<td>Specifies an ASIC instance.</td>
</tr>
<tr>
<td>instance</td>
<td>ASIC instance. Range is 0 to 8.</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td>node-id</td>
<td>(Optional) Node ID. The node-id argument is entered in the rack/slot/module notation.</td>
</tr>
</tbody>
</table>

**Command Default**

No default behavior or values

**Command Modes**

Administration EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.4.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
Usage Guidelines

Use the `show tech-support asic` command to save an ASIC snapshot. This command generates ASIC information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note

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

The following `show` commands run automatically when you run the `show tech-support ASIC` command:

- show hfr
- show controllers ingressq statistics location
- show controllers ingressq block fqmq queues location
- show asic-errors ingressq 0 all location
- show controllers ingressq block brm location
- show controllers ingressq block brm aggbrarr location
- show controllers ingressq fabric detail location
- show controllers ingressq fabric links location
- show controllers ingressq fabric pla location
- show controllers ingressq eio links all location
- show controllers ingressq interfaces all location
- show controllers ingressq vports all location
- show controllers ingressq queues all location
- show controllers ingressq block ssm bpmem 0 location
- show controllers asic sprayer in $nn$ location | exclude $nn$
- show controllers fabricq fabric-backpressure location
- show controllers fabricq link-info all location
- show controllers cputrl clients cdma ingressq active location
- show controllers cputrl clients cdma ingressq detail location
- show asic-errors pse 0 all location

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

The following example shows some of the `show tech-support asic` command output:

```
RP/0/RP0/CPU0:router(admin)# show tech-support asic all inst 0 dir net/node0_RP0_CPU0/harddisk:/asic_snapshots/
results in following files being created with contents..
  # pwd
  /net/node0_RP0_CPU0/harddisk:/asic_snapshots
  # ls -ltr
  total 980
  .
  .
```
show tech-support bcdl

To automatically run `show` commands that display information specific to bulk content downloader (BCDL) debugging, use the `show tech-support bcdl` command in EXEC mode.

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

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>bcdl-group</code></td>
<td>(Optional) Name of the BCDL group.</td>
</tr>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(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.</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><code>sent-to</code></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><code>background</code></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><code>compressed</code></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
</tbody>
</table>
show tech-support bcdl

<table>
<thead>
<tr>
<th>Command Default</th>
<th>The command output is not compressed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command Modes</td>
<td>EXEC</td>
</tr>
<tr>
<td>Command History</td>
<td>Release</td>
</tr>
<tr>
<td></td>
<td>Release 2.0</td>
</tr>
<tr>
<td>Usage Guidelines</td>
<td>This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path. For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface. 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 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</td>
</tr>
</tbody>
</table>

uncompressed (Optional) Displays the command output with no compression.
See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL:

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services or cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>sysmgr</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support bundles

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

show tech-support bundles [interface type interface-path-id] [file sent-to] [background] [compressed] [uncompressed] [show-only] [trace-only] [vrf vrf-name] [location node-id] [all]

Syntax Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflasha: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>interface</td>
<td>(Optional) Collects information about a specific interface.</td>
</tr>
<tr>
<td>type</td>
<td>Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
</tbody>
</table>
show tech-support bundles

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

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.
This command can generate a very large amount of output. You may want to redirect the output to a file using the `file send-to` keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.

Use the `show tech-support bundles` command for 802.3ad link bundles. This command is used to locate any issues related to bundling.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html
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]] [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/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`

**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) Specifies CEF interface status and configuration.

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

**rack**  
(Optional) Specifies a list of racks.

**terminal**  
Displays the command output on the terminal.

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

Press the **Ctrl-C** keys to stop the command output.

**Command Default**

IPv4 is the default.

The command output is not compressed.
This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

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.

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

The following `show` commands run automatically when you run the `show tech-support cef` command:

- `show version`
- `show running`
- `show route {ipv4 | ipv6} unicast`
- `show proc blocked`
- `show cef {ipv4 | ipv6 | mpls} exceptions`
- `show cef {ipv4 | ipv6 | mpls} drop`
- `show ipv4 interface brief`
- `show cef {ipv4 | ipv6} summary`
- `show cef {ipv4 | ipv6 | mpls} interface`
- `show cef ipv4 non-recursive`
• `show cef \{ipv4 | ipv6\}`
• `show cef \{ipv4 | ipv6 | mpls\} adjacency`
• `show mpls forwarding` (if the `mpls` keyword is specified)

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services or cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>cef</td>
<td>read</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file. Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td>filename</td>
<td></td>
</tr>
<tr>
<td>bootflash:</td>
<td></td>
</tr>
<tr>
<td>disk0:</td>
<td></td>
</tr>
<tr>
<td>disk0a:</td>
<td></td>
</tr>
<tr>
<td>disk1:</td>
<td></td>
</tr>
<tr>
<td>disk1a:</td>
<td></td>
</tr>
<tr>
<td>ftp:</td>
<td></td>
</tr>
<tr>
<td>harddisk:</td>
<td></td>
</tr>
<tr>
<td>harddiska:</td>
<td></td>
</tr>
<tr>
<td>harddiskb:</td>
<td></td>
</tr>
<tr>
<td>nvram:</td>
<td></td>
</tr>
<tr>
<td>rcp:</td>
<td></td>
</tr>
<tr>
<td>tftp:</td>
<td></td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
</tbody>
</table>
page

(Optional) Specifies that the command output is displayed one page at a time. Use the return key to display the next line of output or use the space bar to display the next page of information. If not used, the output scrolls (that is, it does not stop for page breaks).

Press the Ctrl+C keys to stop the command output.

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router’s hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Use the show tech-support cfgmgr command to gather information about the configuration manager. This command is used to locate any issues in regards to executing configuration commands or problems.

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support chdlc

To automatically run show commands that display debugging information related to Cisco high-level data link control (CHDLC) protocol, use the show tech-support chdlc command in the EXEC mode.

Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rep: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
</tbody>
</table>

| interface          | (Optional) Displays information about a specific interface. |
| slow               | (Optional) Displays the debugging output of chdlc. |
| location           | (Optional) Specifies a node. |
| node-id            | (Optional) Node ID. The node-id argument is entered in the rack/slot/module notation. |
| rack               | (Optional) Displays a list of racks. |

Command Default

None.
Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.9.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

Tip

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

Use the show tech-support chdlc command to run show commands that display CHDLC debugging information. This command generates information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

Note

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

Examples

The following example how to run the show tech-support chdlc command on the router:

RP/0/RP0/CPU0:router# show tech-support chdlc interface gigabitEthernet 0/6/5/0
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 [fast] [location node-id] [terminal [page] file send-to [background] [compressed|uncompressed]]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fast</td>
<td>(Optional) Collects the output simultaneously from multiple line cards in a multi-chassis router.</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td>node-id</td>
<td>(Optional) Node ID. The <code>node-id</code> argument is entered in the <code>rack/slot/module</code> notation.</td>
</tr>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
</tbody>
</table>
### show tech-support control-ethernet

<table>
<thead>
<tr>
<th><strong>sent-to</strong></th>
<th>Name of the file. The following valid options are listed:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
</tbody>
</table>

| **background** | (Optional) Specifies that the command runs in the background. |
| **compressed** | (Optional) Displays compressed command output.            |
| **uncompressed** | (Optional) Displays the command output with no compression. |

**Command Default**

The command output is not compressed.

**Command Modes**

Administration EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guideline**

This command can generate a very large amount of output. You may want to redirect the output to a file using the `file send-to` keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.
Use the `show tech-support control-ethernet` command to run `show` commands that display information specific to control Ethernet debugging. This command is used to display information specific to Ethernet interface issues. This command generates control Ethernet information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

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

The following `show` commands run automatically when you run the `show tech-support control-ethernet` command:

- `show version`
- `show controller fabric connectivity all`
- `show controller switch 0 ports node-id`
- `show controller switch 1 ports node-id`
- `show controller switch 0 statistics node-id`
- `show controller switch 1 statistics node-id`
- `show controller switch udl all 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 udl all node-id`
- `show controller switch inter-rack stp all node-id`
- `show controller backplane ethernet detail node-id`
- `show controller backplane ethernet trace node-id`

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


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

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>read</td>
</tr>
</tbody>
</table>
Examples

The following example shows a truncated version of the `show tech-support control-ethernet` command output:

```
RP/0/RP0/CPU0:router(admin)#show tech-support control-ethernet terminal page

Number of nodes 13
Gathering required commands for show tech control-ethernet
Finding available nodes in the system
Node - 0/1/CPU0
Node - 0/1/SP
Node - 0/4/CPU0
Node - 0/4/CPU1
Node - 0/4/SP
Node - 0/6/CPU0
Node - 0/6/SP
Node - 0/
RP0
/CPU0
Node - 0/
RP1
/CPU0
Node - 0/SM0/SP
Node - 0/SM1/SP
Node - 0/SM2/SP
Node - 0/SM3/SP

-------------------------------------------------------------------------------
show tech-support control-ethernet
-------------------------------------------------------------------------------

------------------- show version ---------------------------------
Cisco IOS XR Software, Version 3.9.0.20I[DT_IMAGE]
Copyright (c) 2009 by Cisco Systems, Inc.
ROM: System Bootstrap, Version 1.51(20080807:092259) [CRS-1 ROMMON],
P2_CRS-8 uptime is 1 day, 18 hours, 10 minutes
System image file is "bootflash:disk0/hfr-os-mbi-3.8.0.20I/mbihfr-rp.vm"
cisco CRS-8/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2
4 Management Ethernet
16 GigabitEthernet
20 SONET/SDH
20 Packet over SONET/SDH
1019k bytes of non-volatile configuration memory.
1000592k bytes of disk0: (Sector size 512 bytes).
```
1000640k bytes of disk1: (Sector size 512 bytes).

Boot device on node 0/1/SP is bootflash:
Package active on node 0/1/SP:
hfr-pagent, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-pagent-3.8.0.20I
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/work0

hfr-base, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-base-3.8.0.20I
Built on Wed Oct 29 16:07:59 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I_DT_IMAGE/hfr/work0

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/work0

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
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/work0

hfr-base, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-base-3.8.0.20I
Built on Wed Oct 29 16:07:59 DST 2008
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I_DT_IMAGE/hfr/work0

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/work0

hfr-mcast, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mcast-3.8.0.20I
By iox22.cisco.com in /auto/ioxbuild6/production/3.8.0.20I_DT_IMAGE/hfr/work0

hfr-mpls, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-mpls-3.8.0.20I
By iox22.cisco.com in /auto/ioxbuild6/production/3.8.0.20I_DT_IMAGE/hfr/work0

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/work0

hfr-fwdg, V 3.8.0.20I[DT_IMAGE], Cisco Systems, at disk0:hfr-fwdg-3.8.0.20I
By iox30.cisco.com in /auto/ioxbuild6/production/3.8.0.20I_DT_IMAGE/hfr/work0

--More--
show tech-support dsc

To automatically run `show` commands that display information specific to designated shelf controller (DSC) debugging, use the `show tech-support dsc` command in Administration EXEC mode.

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

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>location</code></td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td><code>node-id</code></td>
<td>(Optional) Node ID. The <code>node-id</code> argument is entered in the <code>rack/slot/module</code> notation.</td>
</tr>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(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.</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><code>send-to</code></td>
<td>Name of the file. The following are valid options:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><code>background</code></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
</tbody>
</table>

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
show tech-support dsc

| compressed | (Optional) Displays compressed command output. |
| uncompresssed | (Optional) Displays the command output with no compression. |

**Command Default**

The command output is not compressed.

**Command Modes**

Administration EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.4.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

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

Use the `show tech-support dsc` command to run `show` commands that display information specific to DSC debugging. This command generates DSC information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

**Tip**

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

The following `show` commands run automatically when you run the `show tech-support dsc` command:

- `show dsc all`

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>read</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows some of the `show tech-support dsc` command output:

```
RP/0/RP0/CPU0:router(admin)#show tech-support dsc terminal page
```
show tech-support dsc for node node0_RP0_CPU0 from node node0_RP0_CPU0

--------------------------------- Displaying DSC information ---------------------------------

----------------- Displaying DSC attach_process on this node ------------------
-------------------- run attach_process -p 110638 -i 1 -S ---------------------

Attaching to process pid = 110638 (pkg/bin/dsc)
No tid specified, following all threads
Iteration 1 of 1
-----------------------------

Current process = "pkg/bin/dsc", PID = 110638 TID = 1
trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x482000e8 [<N/A>]
trace_back: #6 0x482012cc [<N/A>]
ENDOFSTACKTRACE

Current process = "pkg/bin/dsc", PID = 110638 TID = 2
trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0xfc6368d4 [chk_evm_thread]
ENDOFSTACKTRACE

Current process = "pkg/bin/dsc", PID = 110638 TID = 4
trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x482000f34 [<N/A>]
ENDOFSTACKTRACE

Current process = "pkg/bin/dsc", PID = 110638 TID = 5
trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x48200ddc [N/A]

ENDOFSTACKTRACE

Current process = "pkg/bin/dsc", PID = 110638 TID = 6

trace_back: #0 0xfc177518 [MsgReceivev]
trace_back: #1 0xfc161354 [msg_receivev]
trace_back: #2 0xfc161160 [msg_receive]
trace_back: #3 0xfc16479c [event_dispatch]
trace_back: #4 0xfc164958 [event_block]
trace_back: #5 0x48200528 [N/A]

ENDOFSTACKTRACE

--------------------------- Displaying show dsc all ---------------------------

---------------------------- run dsc_show_table -a ----------------------------

<table>
<thead>
<tr>
<th>NODE ROLE PRIORITY TBEACON PRESENT MIGRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/RP0/CPU0 DSC DEFAULT 300 YES ENABLED</td>
</tr>
<tr>
<td>0/RP1/CPU0 BACKUP DEFAULT 300 YES ENABLED</td>
</tr>
<tr>
<td>0/4/CPU0 NON-DSC 65 300 YES ENABLED</td>
</tr>
<tr>
<td>0/4/CPU1 NON-DSC 66 300 YES ENABLED</td>
</tr>
</tbody>
</table>

---------------------------- run dsc_show_table -s ----------------------------

<table>
<thead>
<tr>
<th>NODE SERIAL ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/RP0/CPU0 TBA09370035</td>
</tr>
<tr>
<td>0/RP1/CPU0 TBA09370035</td>
</tr>
<tr>
<td>0/4/CPU0 TBA09370035</td>
</tr>
<tr>
<td>0/4/CPU1 TBA09370035</td>
</tr>
</tbody>
</table>

--------------------- Displaying DSC process on all nodes ---------------------

--------------------- run sysmgr_show -o -A -p dsc -n 513 ---------------------

Job Id: 155
PID: 110638
Executable path: /disk0/hfr-admin-3.8.0/bin/dsc
Instance #: 1
Version ID: 00.00.0000
Respawn: ON
Respawn count: 1
Max. spawns per minute: 12
Last started: Fri Mar 16 14:56:35 2007
Process state: Run
Package state: Normal
core: COPY
Max. core: 0
Level: 40
Mandatory: ON
MaintModeProc: ON
startup_path: /pkg/startup/dsc.startup
<table>
<thead>
<tr>
<th>JID</th>
<th>TID</th>
<th>Stack</th>
<th>pri</th>
<th>state</th>
<th>TimeInState</th>
<th>HR:MM:SS:MSEC</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>155</td>
<td>1</td>
<td>52K</td>
<td>10</td>
<td>Receive</td>
<td>0:00:52:0856</td>
<td>0:00:00:0176</td>
<td>dsc</td>
</tr>
<tr>
<td>155</td>
<td>2</td>
<td>52K</td>
<td>10</td>
<td>Receive</td>
<td>326:49:44:0414</td>
<td>0:00:00:0001</td>
<td>dsc</td>
</tr>
<tr>
<td>155</td>
<td>4</td>
<td>52K</td>
<td>10</td>
<td>Receive</td>
<td>0:00:00:0083</td>
<td>0:00:01:0127</td>
<td>dsc</td>
</tr>
<tr>
<td>155</td>
<td>5</td>
<td>52K</td>
<td>10</td>
<td>Receive</td>
<td>0:00:00:0643</td>
<td>0:00:00:0019</td>
<td>dsc</td>
</tr>
<tr>
<td>155</td>
<td>6</td>
<td>52K</td>
<td>55</td>
<td>Receive</td>
<td>0:00:00:0060</td>
<td>0:14:49:0966</td>
<td>dsc</td>
</tr>
</tbody>
</table>
show tech-support ethernet

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

```
show tech-support [file send-to [background] [compressed|uncompressed]] [interface interface-type interface-instance] [location node-id] [rack]
```

**Syntax Description**

- **file**
  (Optional) Specifies that the command output is saved to a specified file.

- **send-to**
  (Optional) Name of the file. The following valid options are listed:
  - filename
  - bootflash: filename
  - compactflash: filename
  - disk0: filename
  - disk1: filename
  - flash: filename
  - ftp: filename
  - harddisk: filename
  - harddiska: filename
  - nvram: filename
  - rcp: filename
  - slot0: filename
  - slot1: filename
  - tftp: filename

- **interface**
  (Optional) Collects the status and configuration information about a specific interface.

- **interface-type**
  Identifies a physical interface or a virtual interface.

  **Note** Use the show interfaces command to see a list of all possible interfaces currently configured on the router.

- **interface-instance**
  Specifies the interface instance. The argument interface-instance is expressed in the rack/slot/module notation.

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

- **node-id**
  (Optional) Specifies a list of racks.
Command Default

IPv4 is the default.

The command output is compressed.

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.8.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Use the show tech-support ethernet command to run show commands that display information specific to VLAN and ethernet infrastructure debugging. This command generates ethernet debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note

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

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

• show version
• show running
• show route {ipv4 | ipv6} unicast
• show proc blocked
• show ethernet {ipv4 | ipv6 | mpls} exceptions
• show ethernet {ipv4 | ipv6 | mpls} drop
• show ipv4 interface brief
• show mpls forwarding (if the mpls keyword is specified)
See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
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 {fabric-snapshot multicast [brief detail]} summary traffic [brief detail] [location node-id [include-fabric-cards] [include-rp] [email] page file send-to]

Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>fabric-snapshot</td>
<td>Runs the fabric snapshot script which generates comprehensive data on the instantaneous state of the fabric.</td>
</tr>
<tr>
<td>multicast</td>
<td>Specifies fabric multicast information.</td>
</tr>
<tr>
<td>brief</td>
<td>(Optional) Displays brief information.</td>
</tr>
<tr>
<td>detail</td>
<td>(Optional) Displays detailed information.</td>
</tr>
<tr>
<td>summary</td>
<td>Specifies fabric summary information.</td>
</tr>
<tr>
<td>traffic</td>
<td>Specifies fabric traffic information.</td>
</tr>
<tr>
<td>location node-id</td>
<td>(Optional) Specifies a node. The node-id argument is entered in the rack/slot/module notation.</td>
</tr>
<tr>
<td>include-fabric-cards</td>
<td>(Optional) Specifies fabric card information in addition to the fabric information. This option is available when the fabric-snapshot keyword is used.</td>
</tr>
<tr>
<td>include-rp</td>
<td>(Optional) Specifies route processor information in addition to the fabric information. This option is available when the fabric-snapshot keyword is used.</td>
</tr>
<tr>
<td>email</td>
<td>(Optional) Specifies that the command output is sent through email. The output is copied to /disk0:/fabric_multicast.log.</td>
</tr>
<tr>
<td>Note</td>
<td>To use the email keyword, you must have the SMTP server and domain name and the ability to connect a TCP socket to the specified SMTP server. The domain ipv4 host host-name v4address1 command must be configured to use the server lookup.</td>
</tr>
<tr>
<td>page</td>
<td>(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).</td>
</tr>
<tr>
<td></td>
<td>Press the Ctrl-C keys to stop the command output.</td>
</tr>
<tr>
<td>file</td>
<td>(Optional) Specifies that the command output is saved to a specified file.</td>
</tr>
</tbody>
</table>
show tech-support fabric

sent-to (Optional) Name of the file. The following valid options are listed:

- filename
- bootflash: filename
- compactflash: filename
- disk0: filename
- disk1: filename
- flash: filename
- ftp: filename
- harddisk: filename
- harddiska: filename
- nvram: filename
- rcp: filename
- slot0: filename
- slot1: filename
- tftp: filename

Command Default

The command output is not compressed.

Command Modes

Administration EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.3.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.
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.

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

The following `show` commands run automatically when you run the `show tech-support fabric multicast` command:

- `show controllers fabric fgid stat all detail`
- `show controllers fabric fgid info`
- `show process fgid_allocator`
- `show process fgid_aggregator`
- `show process fgid_server`
- `show process fgid_allocator`

The following `show` commands run automatically when you run the `show tech-support fabric traffic` command:

- `show controllers fabric plane all detail`
- `show controllers fabric plane all stat brief`
- `show controllers fabric plane all stat detail`
- `show controllers fabric link port`
- `show controller fabricq stat`
- `show controllers fabricq queues`
- `show controllers fabricq eio links all`
- `show controller ingressq stat`
- `show controller ingressq queue all`
- `show controller ingressq fabric pla`
- `show control ingressq block ssm bpmem 0`
- `show controllers ingressq block fqm queue`
- `show controllers ingressq vports all`
- `show controllers ingressq interfaces all`
- `show controllers ingressq eio links all`
• show controller fia rxslice all uq all channel all
• show controllers cpuctrl devices ingressq pdma queue all act
• show controllers cpuctrl devices egressq pdma queue all act
• show controllers cpuctrl devices fabricq pdma queue all act

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>read</td>
</tr>
</tbody>
</table>
**show tech-support gsp**

To automatically run `show` commands that display information specific to Gigabit Switch Platform (GSP) debugging, use the `show tech-support gsp` command in EXEC mode.

```
show tech-support gsp [client|group|rack] [location node-id] {terminal [page] | file send-to [background] [compressed|uncompressed]}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>client</td>
<td>(Optional) Displays the client tech-support information.</td>
</tr>
<tr>
<td>group</td>
<td>(Optional) Displays the group tech-support information.</td>
</tr>
<tr>
<td>rack</td>
<td>(Optional) Displays the number of racks</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td>node-id</td>
<td>(Optional) Node ID. The <code>node-id</code> argument is entered in the <code>rack/slot/module</code> notation.</td>
</tr>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
</tbody>
</table>
**sent-to**  Name of the file. The following valid options are listed:

- `filename`
- `bootflash: filename`
- `compactflash: filename`
- `disk0: filename`
- `disk1: filename`
- `flash: filename`
- `ftp: filename`
- `harddisk: filename`
- `harddiska: filename`
- `nvram: filename`
- `rcp: filename`
- `slot0: filename`
- `slot1: filename`
- `tftp: filename`

**background**  (Optional) Specifies that the command runs in the background.

**compressed**  (Optional) Displays compressed command output.

**uncompressed**  (Optional) Displays the command output with no compression.

**Command Default**  The command output is not compressed.

**Command Modes**  EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**  This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`. 
For Cisco Technical Support contact information, see the ‘Obtaining Documentation and Submitting a Service Request’ section in the Preface.

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

Use the show tech-support gsp command to run show commands that display information specific to GSP debugging. GSP is a common IPC utilized in Cisco IOS XR software to communicate between nodes. This command would be used to determine if there are any issues with GSP communication between nodes. This command generates GSP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

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

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

- show gsp group addresses
- show gsp group admin addresses
- show gsp group lr-control addresses
- show gsp group gid 0
- show gsp group gid 1000
- show gsp group gid 2000
- show gsp memory
- show gsp stats client
- show gsp stats server jid 0
- show gsp trace server bootstrap location all
- show gsp trace server timeout slow location all
- show gsp trace server timeout fast location all
- show gsp trace server limp fast location all
- show gsp trace server limp slow location all
- show gsp trace server error api location all
- show gsp trace server error minor location all
- show gsp trace server ens location all

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html
<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services or cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>sysmgr</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support igmp snooping

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

show tech-support igmp snooping [file send-to] [location node-id] [terminal]

Syntax Description

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>(Optional) Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>(Optional) Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td>node-id</td>
<td>(Optional) Node ID. The node-id argument is entered in the rack/slot/module notation.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
</tbody>
</table>
show tech-support igmp snooping

Command Default
Output is logged to the terminal screen.

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.9.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

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

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

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

The following show commands run automatically when you run the show tech-support igmp snooping command:

- show version
- show running-config sanitize
- show redundancy
- show logging
- show platform
- show install active detail
- show install committed detail
- show install inactive detail
- show pkgfs trace location all
- show install trace loadpath location node-id
- show install trace io location node-id
- show install trace instdir-lr location node-id
- show install trace insthelper location node-id
- show install trace notify location node-id
• show install trace replicator location  node-id
• show install trace pkg location  node-id
• show install trace inv location  node-id
• show install trace platform location  node-id
• show install trace fior location  node-id
• show install trace state-file-replication location  node-id
• show install trace sds location  node-id
• show memory summary location  node-id
• show context location  node-id
• show processes memory location  node-id
• show processes aborts location  node-id
• show processes blocked location  node-id
• show pkgfs trace location  node-id
• show filesystem location  node-id
• run diskinfo  (various)

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

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td></td>
<td>read</td>
</tr>
</tbody>
</table>

Examples

The following example shows a truncated version of the  show tech-support igmp snooping  command output:

RP/0/RP0/CPU0:router# show tech-support igmp snooping terminal
---------------------------------------------------------------------
show tech-support igmp snooping
---------------------------------------------------------------------

-------------------------------- show version --------------------------------
Cisco IOS XR Software, Version 3.9.0[00]
Copyright (c) 2009 by Cisco Systems, Inc.
ROM: System Bootstrap, Version 1.1(20090521:183759) [ASR9K ROMMON],
MCAST-6 uptime is 6 days, 20 hours, 50 minutes
System image file is "bootflash:disk0/asr9k-os-mbi-3.9.0/mbiasr9k-rp.vm"
cisco ASR9K Series (MPC8641D) processor with 4194304K bytes of memory. MPC8641D processor at 1333MHz, Revision 2.2

2 Management Ethernet
45 GigabitEthernet
219k bytes of non-volatile configuration memory.
975M bytes of compact flash card.
3394M bytes of hard disk.
1605616k bytes of disk0: (Sector size 512 bytes).
1605616k bytes of disk1: (Sector size 512 bytes).

Configuration register on node 0/RSP0/CPU0 is 0x1922

Boot device on node 0/RSP0/CPU0 is disk0:
Package active on node 0/RSP0/CPU0:
  asr9k-scfclient, V 3.9.0[00], Cisco Systems, at disk0:asr9k-scfclient-3.9.0
    Built on Mon Dec 14 12:38:43 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-diags, V 3.9.0[00], Cisco Systems, at disk0:asr9k-diags-3.9.0
    Built on Mon Dec 14 12:38:44 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-mcast, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mcast-3.9.0
    Built on Mon Dec 14 13:33:02 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-mpls, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mpls-3.9.0
    Built on Mon Dec 14 13:31:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-rout, V 3.9.0[00], Cisco Systems, at disk0:asr9k-rout-3.9.0
    Built on Mon Dec 14 12:38:56 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-lc, V 3.9.0[00], Cisco Systems, at disk0:asr9k-lc-3.9.0
    Built on Mon Dec 14 13:28:31 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-fwdg, V 3.9.0[00], Cisco Systems, at disk0:asr9k-fwdg-3.9.0
    Built on Mon Dec 14 12:34:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-admin, V 3.9.0[00], Cisco Systems, at disk0:asr9k-admin-3.9.0
    Built on Mon Dec 14 12:29:39 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-base, V 3.9.0[00], Cisco Systems, at disk0:asr9k-base-3.9.0
    Built on Mon Dec 14 12:32:17 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-os-mbi, V 3.9.0[00], Cisco Systems, at disk0:asr9k-os-mbi-3.9.0
    Built on Mon Dec 14 12:12:19 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0

Boot device on node 0/1/CPU0 is mem:
Package active on node 0/1/CPU0:
  asr9k-scfclient, V 3.9.0[00], Cisco Systems, at disk0:asr9k-scfclient-3.9.0
    Built on Mon Dec 14 12:38:43 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-diags, V 3.9.0[00], Cisco Systems, at disk0:asr9k-diags-3.9.0
    Built on Mon Dec 14 12:38:44 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-mcast, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mcast-3.9.0
    Built on Mon Dec 14 13:33:02 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
  asr9k-mpls, V 3.9.0[00], Cisco Systems, at disk0:asr9k-mpls-3.9.0
    Built on Mon Dec 14 13:31:50 UTC 2009
    By sjc-lds-524 in /auto/srcarchive3/production/3.9.0/asr9k/workspace for c4.2.1-p0
Boot device on node 0/2/CPU0 is mem:
Package active on node 0/2/CPU0:

---------------------- show running-config igmp snooping ----------------------
igmp snooping profile prof1
  ttl-check disable
  router-alert-check disable
!

------------------ show igmp snooping summary statistics debug ------------------
Bridge Domains: 1
IGMP Snooping Bridge Domains: 1
Ports: 2
IGMP Snooping Ports: 1
Mrouters: 0
STP Forwarding Ports: 0
IGMP Groups: 0
Member Ports: 0
IGMP Source Groups: 0
Static/Include/Exclude: 0/0/0
Member Ports (Include/Exclude): 0/0
Traffic Statistics (elapsed time since last cleared 6d20h):

<table>
<thead>
<tr>
<th>Received</th>
<th>Rejected</th>
<th>Generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

IGMP General Queries: 0
IGMP Group Specific Queries: 0
IGMP G4S Specific Queries: 0
IGMP V2 Reports: 0
IGMP V3 Reports: 0
IGMP V2 Leaves: 0
IGMP Group Specific Queries: 0
IGMP V3 Reports: 0
IGMP Global Leaves: 0
PIM Hellos: 0

Rx Packet Treatment:
- Packets Flooded: 0
- Packets Forwarded To Members: 0
- Packets Forwarded To Mrouters: 0
- Packets Consumed: 0

Rx Errors:
- None

Rx Other:
- None

Tx Errors:
- None

L2FIB Statistics (elapsed time since last cleared 6d20h):
- BD Created Notifications: 2
- BD Deleted Notifications: 1
- EFP Added Notifications: 9
- EFP Removed Notifications: 2
- EFP STP Change Notifications: 4

BD Topology Change Notifications: 0
BD Added: 2
BD Deleted: 1
BD Profile Change: 0
BD Profile Added: 0
BD Profile Removed: 0
BD Batch Start: 4
BD Batch End: 4
BD Mark: 0
BD Sweep: 1
EFP Added: 4
EFP Deleted: 2
EFP Profile Changed: 0
EFP Profile Unchanged: 5
EFP Profile Added: 0
EFP Profile Removed: 0
EFP Oper State To Up: 3
EFP Oper State To Down: 1
EFP STP State To Forwarding: 2
EFP STP State To Blocked: 0
EFP STP State To Not Participating: 0
EFP Batch Start: 10
EFP Batch End: 10
EFP Mark: 0
EFP Sweep: 1
L2FIB Replay: 3
Mroute Mgs Sent: 4
Cfg Mgs Sent: 8
BDXC Send: 8
Errors:
- None

Network Statistics (elapsed time since last cleared 6d20h):
Socket Event: 0
Network Connection Open Event: 2
Network Connection Close Event: 0
Packet Event: 2
Packet Event Disconnect: 0
Packet Event Empty: 0
Packet Event Empty Watermark: 2
**Rx IGMP Packet Attempt:** 0  
**Rx IGMP Packet Success:** 0  
**Rx PIM Packet Attempt:** 0  
**Rx PIM Packet Success:** 0  
**Tx IGMP Packet Attempt:** 0  
**Tx IGMP Packet Success:** 0  
**Errors:** None  

**Internal Data:**  
- **Ltrace:** Enabled  
- **Error Debug:** Disabled  
- **Other Debug:** Disabled  
- **System Mac:** 00:00:00:00:00:00  

**Internal Statistics (elapsed time since last cleared 6d20h):** None

---

```
--------- show igmp snooping bridge-domain detail statistics debug ---------
<table>
<thead>
<tr>
<th>Bridge Domain</th>
<th>Profile</th>
<th>Act</th>
<th>Ver</th>
<th>#Ports</th>
<th>#Mtrrs</th>
<th>#Grps</th>
<th>#SGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>bg:bd</td>
<td>prof1</td>
<td>Y</td>
<td>--</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
```

- **Profile Configured Attributes:**  
  - **System IP Address:** 0.0.0.0  
  - **Minimum Version:** 2  
  - **Report Suppression:** Enabled  
  - **Unsolicited Report Interval:** 1000 (milliseconds)  
  - **TCN Query Solicit:** Disabled  
  - **TCN Flood:** Enabled  
  - **TCN Flood Query Count:** 2  
  - **Router Alert Check:** Disabled  
  - **TTL Check:** Disabled  
  - **Internal Querier Support:** Disabled  
  - **Querier Query Interval:** 60 (seconds)  
  - **Querier LMQ Interval:** 1000 (milliseconds)  
  - **Querier LMQ Count:** 2  
  - **Querier Robustness:** 2  

- **Querier:** Not Present  
- **Mrouter Ports:** 0  
- **STP Forwarding Ports:** 0  
- **Groups:** 0  
- **Member Ports:** 0  
- **V3 Source Groups:** 0  
- **Static/Include/Exclude:** 0/0/0  
- **Member Ports (Include/Exclude):** 0/0  
- **XID:** BD:0x0  
- **Creation Time:** 1d00h  
- **Snooping Creation Time:** 1d00h  
- **Flood Mode:** Disabled  
- **Star Star Mroute PD Data:**  
  - **Size:** 4  
  - **Data:** 0x00 0x00 0x80 0x81  

- **Client L2Info:** None  
- **MTU:** 1400  

**Traffic Statistics (elapsed time since last cleared 5d20h):**  
- **Received**  
  - IGMP General Queries: 0  
  - IGMP Group Specific Queries: 0  
  - IGMP G&S Specific Queries: 0  
  - IGMP V2 Reports: 0  
  - IGMP V3 Reports: 0  
  - IGMP V2 Leaves: 0  
  - IGMP Global Leaves: 0  
  - PIM Hellos: 0  
- **Injected**  
  - IGMP General Queries: 0  
  - IGMP Group Specific Queries: 0  
  - IGMP G&S Specific Queries: 0  
  - IGMP V2 Reports: 0  
  - IGMP V3 Reports: 0  
  - IGMP V2 Leaves: 0  
  - IGMP Global Leaves: 0  
  - PIM Hellos: 0  
- **Generated**  
  - IGMP General Queries: 0  
  - IGMP Group Specific Queries: 0  
  - IGMP G&S Specific Queries: 0  
  - IGMP V2 Reports: 0  
  - IGMP V3 Reports: 0  
  - IGMP V2 Leaves: 0  
  - IGMP Global Leaves: 0  
  - PIM Hellos: 0

- **Rx Packet Treatment:**  
  - Packets Flooded: 0  
  - Packets Forwarded To Members: 0  
  - Packets Forwarded To Mrouters: 0  
  - Packets Consumed: 0  

---
show tech-support igmp snooping

None
Rx Other:
None
Tx Errors:
None
**show tech-support install**

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

```
show tech-support install [page | file send-to] [background] [compressed|uncompressed] [location node-id] [rack]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>page</strong></td>
</tr>
<tr>
<td><strong>file</strong></td>
</tr>
<tr>
<td><strong>send-to</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>background</strong></td>
</tr>
</tbody>
</table>
**show tech-support install**

**Command Default**
Output is logged to the terminal screen.

**Command Modes**
Administration EXEC
EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced</td>
</tr>
</tbody>
</table>

**Usage Guidelines**
This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, **copy harddisk:/showtech/name.tgz tftp://server_path**.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

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

Use the **show tech-support install** command to run **show** commands that display information specific to installation information. This command is useful for any problems encountered while executing install operations on the system during an install activate, install add, remove, or commit operation. This command generates installation information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

**Note**
This command is not required during normal use of the router.
The following `show` commands run automatically when you run the `show tech-support install` command:

- `show install request`
- `show version`
- `show install active summary`
- `show install committed summary`
- `show install package all detail`
- `show install log verbose`
- `show running-config sanitize`
- `show redundancy`
- `show logging`
- `show platform`
- `show install active detail`
- `show install committed detail`
- `show install inactive detail`
- `show pkgfs trace location all`
- `show install trace loadpath location node-id`
- `show install trace io location node-id`
- `show install trace instdir-lr location node-id`
- `show install trace insthelper location node-id`
- `show install trace notify location node-id`
- `show install trace replicator location node-id`
- `show install trace pkg location node-id`
- `show install trace inv location node-id`
- `show install trace platform location node-id`
- `show install trace ior location node-id`
- `show install trace state-file-replication location node-id`
- `show install trace sds location node-id`
- `show memory summary location node-id`
- `show context location node-id`
- `show processes memory location node-id`
- `show processes aborts location node-id`
- `show processes blocked location node-id`
- `show pkgfs trace location node-id`
- **show filesystem location** *node-id*
- **run diskinfo** (various)

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services or cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>pkg-mgmt</td>
<td>read</td>
</tr>
</tbody>
</table>
**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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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 <code>Ctrl+C</code> keys to stop the command output.</td>
</tr>
</tbody>
</table>

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
show tech-support l2tp

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

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

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

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

Tip
See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

Examples

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

```
RP/0/RP0/CPU0:router# show tech-support l2tp terminal page
---------------------------------------------------------------------
show tech-support l2tp (Detailed output with event traces)
---------------------------------------------------------------------
---------------- show l2tp session detail ----------------------------
---------------- show l2tp tunnel detail ------------------------------
---------------- show l2tp internal ------------------------------------
L2TP Internal information:
```
L2X information:
Rx high water mark : 0
Ave msg process usecs : 0
Num rx messages : 0
Num tx messages : 0
Num reordered msgs : 0
Max reorder deviation : 0
Num ooo msgs : 0
Num rx path drops : 0
Num rx q overflow drops : 0
Num buffered msgs : 0

L2TUN information:
Ave msg process usecs : 0
Num rx messages : 1
Num tx messages : 1

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

Global L2TP tunnel control message statistics:

<table>
<thead>
<tr>
<th></th>
<th>XMIT</th>
<th>RE-XMIT</th>
<th>RCVD</th>
<th>DROP</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZLB</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SCCRQ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SCCRQ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SCCCN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>StopCCN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hello</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OCRQ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OCRP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OCCR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OCCR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OCNN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ICRQ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ICRP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ICCN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CDN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>WEN</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SLI</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>EXP ACK</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FSQ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>FSR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SRRQ</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SRRP</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CiscoACK</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

------------- 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-ICRN -
Proc-ICCN -
Wt-Tx-ICRN -
Wt-Tx-ICCR -
Wt-Tx-ICRN -
Wt-Rx-ICCR -
Proc-ICRP -
established -
Dead -

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

Old State New State
---More-- Building configuration...

<table>
<thead>
<tr>
<th>Init</th>
<th>Idle</th>
<th>Wt-Sock</th>
<th>Wt-CC</th>
<th>Proc-ICRQ</th>
<th>Wt-Rx-ICCN</th>
<th>Proc-ICCN</th>
<th>Wt-Tx-ICRQ</th>
<th>Wt-Tx-ICRP</th>
<th>Wt-Rx-ICRP</th>
<th>Proc-ICRP</th>
<th>establishe</th>
<th>Dead</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Event</th>
<th>State event occurred in</th>
</tr>
</thead>
</table>

------------- show processes l2tp_mgr -----------------------------

| Job Id: 263 |
| PID: 405734 |
| Executable path: /disk0/hfr-fwdg-3.6.0.16I/bin/l2tp_mgr |
| Instance #: 1 |
| Version ID: 00.00.0000 |
| Respawn: ON |
| Respawn count: 1 |
| Max. spawns per minute: 12 |
| Last started: Thu Oct 11 19:25:05 2007 |
| Process state: Run |
| Package state: Normal |
| core: TEXT SHAREDMEM MAINMEM |
| Max. core: 0 |
| Level: 999 |
| Placement: ON |
| startup_path: /pkg/startup/l2tp.startup |
show tech-support l2vpn

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

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

**Syntax Description**

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

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

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.

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

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


**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

**Examples**

The following example shows some of the `show tech-support l2vpn` command output that is displayed on the terminal:

```
RP/0/RP0/CPU0:router# show tech-support l2vpn terminal page

---------------------------------------------------------------------
show tech-support l2vpn (Detail with Event traces)

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

show version

---------------------------------------------------------------------
Cisco IOS XR Software, Version 3.6.0.16I[SITI_IMAGE1]
Copyright (c) 2007 by Cisco Systems, Inc.
ROM: System Bootstrap, Version 1.48(20070928:224557) [CRS-1 ROMMON],
P1_CRS-8 uptime is 4 days, 20 hours, 49 minutes
```
System image file is "disk0:hfr-os-mbi-3.6.0.16I/mbihfr-rp.vm"
cisco CRS-8/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2
4 T3 Port controller(s)
20 Packet over SONET/SDH network interface(s)
20 SONET/SDH Port controller(s)
4 Serial network interface(s)
4 Ethernet/Ethernet interface(s)
3 GigabitEthernet/Ethernet interface(s)
16 GigabitEthernet interface(s)
1019k bytes of non-volatile configuration memory.
38073M 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-3.6.0.16I
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-3.6.0.16I
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-3.6.0.16I
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
Configuration register on node 0/4/CPU1 is 0x102
Boot device on node 0/4/CPU1 is disk0:
  Package active on node 0/4/CPU1:
  hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
    Built on Tue Oct 2 15:07:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.16I
    Built on Tue Oct 2 15:58:47 DST 2007
    By iox42.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-fpd, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fpd-3.6.0.16I
    Built on Tue Oct 2 14:48:41 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-doc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-doc-3.6.0.16I
    Built on Tue Oct 2 14:48:52 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-diags, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-diags-3.6.0.16I
    Built on Tue Oct 2 14:48:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-mgbl, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mgbl-3.6.0.16I
    Built on Tue Oct 2 14:20:33 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-mcast, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mcast-3.6.0.16I
    Built on Tue Oct 2 14:26:29 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-mls, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-mls-3.6.0.16I
    Built on Tue Oct 2 14:22:48 DST 2007
    By sjce-gf-061.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-rout, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-rout-3.6.0.16I
    Built on Tue Oct 2 14:06:14 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-k9sec, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-k9sec-3.6.0.16I
    Built on Tue Oct 2 14:43:56 DST 2007
    By sjce-gf-074.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-lc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-lc-3.6.0.16I
    Built on Tue Oct 2 14:02:24 DST 2007
    By iox26.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  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_IMAGE8
  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_IMAGE8
  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_IMAGE8
  hfr-os-mbi, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-os-mbi-3.6.0.1
    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

show tech-support l2vpn

Configuration register on node 0/4/CPU1 is 0x102
Boot device on node 0/4/CPU1 is disk0:
  Package active on node 0/4/CPU1:
  hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
    Built on Tue Oct 2 15:07:32 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.1
    Built on Tue Oct 2 15:58:47 DST 2007
    By iox42.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-fpd, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-fpd-3.6.0.16I
    Built on Tue Oct 2 14:48:41 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-doc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-doc-3.6.0.16I
    Built on Tue Oct 2 14:48:52 DST 2007
    By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
  hfr-diags, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-diags-3.6.0.16I

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
OL-26510-03
Configuration register on node 0/6/CPU0 is 0x102
Boot device on node 0/6/CPU0 is mem:
Package active on node 0/6/CPU0:
hfr-sbc, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-sbc-3.6.0.16I
Built on Tue Oct  2 15:07:32 DST 2007
By sjce-gf-071.cisco.com in /auto/ioxbuild2/production/3.6.0.16I.SIT1_IMAGE8
hfr-pagent, V 3.6.0.16I[SIT1_IMAGE1], Cisco Systems, at disk0:hfr-pagent-3.6.0.16I
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

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
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 \{rack\}
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0a:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1a:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiskb:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp:\ filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp:\ filename</code></td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
</tbody>
</table>
show tech-support lrd

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

**all**  
(Optional) Specifies all locations.

**rack**  
(Optional) Displays the list of racks.

### Command Modes

**EXEC**

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

**Tip**

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

Use the **show tech-support lrd** command for the LRD debugging, which controls the Secure Domain Router (SDR) architecture. The system always has at least one SDR at any time. It collects relevant information when issues arise with the SDR management within the system. This command can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

---

**Note**

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

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


### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

### Examples

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

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

```
-------------------------------------------------------------------------------
Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
OL-26510-03
```
show tech-support lrd

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_lrd_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

Client Vector for Node = node0_RP0_CPU0
Received 23 currently connected lrd clients
FID op eFLAGS cFLAGS
---
168027 0x1 0x4 0x3
77863 0x11 0x204 0x1
81963 0x10 0x200 0x0
168024 0x2 0x0 0x0
168026 0x2 0x0 0x0
200580 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
Tech-Support Commands

---LRD LOG START FOR NODE node0_RP0_CPU0---

10/11 10:19:16.309 1 main: ---LRD starting---
10/11 10:19:16.325 1 main: **********LRD on Node=0x201**********
10/11 10:19:16.327 1 main: mutex init for inv_mutex DONE.
10/11 10:19:17.772 1 lrd_get_dsc: dSC = 201
10/11 10:19:17.774 1 main: We are dSC.
10/11 10:19:17.776 1 main: Registering with SSM as service provider. Once

show tech-support lrd

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x

OL-26510-03
+++ lrdbg -I -1: lrd server inventory [17:21:35.603 UTC Fri Dec 18 2009] ++++

Success: node_count=8, ready=1
node=0x1(0/RSP0/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1
lr_name=Owner pd_card_type=0x100302, partner=0x11
node=0x11(0/RSP1/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2
lr_name=Owner pd_card_type=0x100302, partner=0x1
node=0x821(0/0/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x841(0/2/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x851(0/3/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=0, red_state=0
lr_name=Owner pd_card_type=0x3020a

---- lrdbg -I -1: lrd server inventory [17:21:36.023 UTC Fri Dec 18 2009] -----


lrdbg 'i' getting CONFIG INFO
Starting lrdbg commands for node = 0/RSP0/CPU0
lrdbg: temp_node_name copied is 0/RSP0/CPU0
node_name = node0_RSP0_CPU0 chan_name = /net/node0_RSP0_CPU0/dev/lrd_local
user_nodeid=1 user_lrname = Owner
Local nodeid=1 Local lrname=Owner
User nodeid=1 User lrname = Owner User lrid=0
lrdbg: Successfully connected to channel /net/node0_RSP0_CPU0/dev/lrd_local
Starting lrdbg commands for node = node0_RSP0_CPU0 lrid = 0
DLRSC Info for Node = node0_RSP0_CPU0 Nodeid = 0x1 lrid = 0
We are the dLRSC, Backup dLRSC is 0x11
Inventory Info for Node = node0_RSP0_CPU0 lrid = 0
Success: node_count=5, ready=1
node=0x1(0/RSP0/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1
lr_name=Owner pd_card_type=0x100302, partner=0x11
node=0x11(0/RSP1/CPU0), type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2
lr_name=Owner pd_card_type=0x100302, partner=0x1
node=0x821(0/0/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x841(0/2/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0
lr_name=Owner pd_card_type=0x30207
node=0x851(0/3/CPU0), type=2, memsize=256, cpus=1, speed=100, sw_state=0, red_state=0
lr_name=Owner pd_card_type=0x3020a

LR name Info for Node = node0_RSP0_CPU0
dSC node: 0/RSP0/CPU0
standby dSC node: 0/RSP1/CPU0
LRS (Configured, pre-existing) basic info:
Name LRId dLRSC backup_dLRSC
---------------------------------------------------------------------
Owner 0 0/RSP0/CPU0 0/RSP1/CPU0

LRs (Configured, pre-existing) basic info:
Lr-Names LRId dLRSC StbydLRSC Primary Primary1 McastAddr MacAddr
-----------------------------------------------------------------------------------------------
Owner 0 0/RSP0/CPU0 0/RSP1/CPU0 0/RSP0/CPU0 0/RSP1/CPU0 0 0211bfcfe7e

Client Vector for Node = node0_RSP0_CPU0
Received 25 currently connected lrd clients

<table>
<thead>
<tr>
<th>PID</th>
<th>op</th>
<th>eFLAGS</th>
<th>cFLAGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>213071</td>
<td>0x40</td>
<td>0x1</td>
<td>0x0</td>
</tr>
<tr>
<td>213090</td>
<td>0x1</td>
<td>0x4</td>
<td>0x3</td>
</tr>
<tr>
<td>163876</td>
<td>0x11</td>
<td>0x204</td>
<td>0x1</td>
</tr>
<tr>
<td>176173</td>
<td>0x10</td>
<td>0x200</td>
<td>0x0</td>
</tr>
<tr>
<td>184381</td>
<td>0x1</td>
<td>0x4</td>
<td>0x1</td>
</tr>
<tr>
<td>213099</td>
<td>0x2</td>
<td>0x0</td>
<td>0x0</td>
</tr>
<tr>
<td>208966</td>
<td>0x23</td>
<td>0x84</td>
<td>0x1</td>
</tr>
<tr>
<td>229494</td>
<td>0x1</td>
<td>0x4</td>
<td>0x1</td>
</tr>
<tr>
<td>221289</td>
<td>0x1</td>
<td>0x4</td>
<td>0xf</td>
</tr>
<tr>
<td>241796</td>
<td>0x41</td>
<td>0x15</td>
<td>0x3</td>
</tr>
<tr>
<td>245905</td>
<td>0x40</td>
<td>0x1</td>
<td>0x0</td>
</tr>
<tr>
<td>245902</td>
<td>0x1</td>
<td>0x14</td>
<td>0x7</td>
</tr>
<tr>
<td>245901</td>
<td>0x1</td>
<td>0x14</td>
<td>0x7</td>
</tr>
<tr>
<td>237682</td>
<td>0x1</td>
<td>0x4</td>
<td>0x7</td>
</tr>
<tr>
<td>237695</td>
<td>0x1</td>
<td>0x4</td>
<td>0x3</td>
</tr>
<tr>
<td>245908</td>
<td>0x40</td>
<td>0x1</td>
<td>0x0</td>
</tr>
<tr>
<td>245907</td>
<td>0x40</td>
<td>0x1</td>
<td>0x0</td>
</tr>
<tr>
<td>213092</td>
<td>0x1</td>
<td>0x14</td>
<td>0x3</td>
</tr>
<tr>
<td>254123</td>
<td>0x1</td>
<td>0x14</td>
<td>0x3</td>
</tr>
<tr>
<td>254124</td>
<td>0x1</td>
<td>0x4</td>
<td>0x4</td>
</tr>
<tr>
<td>262347</td>
<td>0x1</td>
<td>0x4</td>
<td>0x4</td>
</tr>
<tr>
<td>262351</td>
<td>0x1</td>
<td>0x14</td>
<td>0x4</td>
</tr>
<tr>
<td>270550</td>
<td>0x1</td>
<td>0x4</td>
<td>0x7</td>
</tr>
<tr>
<td>254139</td>
<td>0x40</td>
<td>0x1</td>
<td>0x4</td>
</tr>
<tr>
<td>270596</td>
<td>0x40</td>
<td>0x1</td>
<td>0x0</td>
</tr>
</tbody>
</table>

DLL loaded for Node = node0_RSP0_CPU0
liblrd_dl_node_state_0.dll 0.0
liblrd_dl_sw_state_0.dll 0.0
liblrd_dl_fwd_ldr_0.dll 0.0
liblrd_alpha_fwd.dll 1.0
liblrd_envmon_fwd.dll 1.0
liblrd_invmgr_fwd.dll 1.0

dll name version

Node State Info for Node = node0_RSP0_CPU0

<table>
<thead>
<tr>
<th>Type</th>
<th>Node</th>
<th>Nodeid</th>
<th>Prev State</th>
<th>Cur State</th>
<th>LRid (PD ctype)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP(0)</td>
<td>0/RSP0/CPU0</td>
<td>0x1</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0 (0x100302) (-1)</td>
</tr>
<tr>
<td>RP(0)</td>
<td>0/RSP1/CPU0</td>
<td>0x11</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0 (0x100302) (-1)</td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/0/CPU0</td>
<td>0x821</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0 (0x30207) (-1)</td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/2/CPU0</td>
<td>0x841</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0 (0x30207) (-1)</td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/3/CPU0</td>
<td>0x851</td>
<td>BRINGDOWN(7)</td>
<td>NOT_PRESENT(0)</td>
<td>0 (0x3020a) (-1)</td>
</tr>
</tbody>
</table>

Sw State Info for Node = node0_RSP0_CPU0

<table>
<thead>
<tr>
<th>Type</th>
<th>Node</th>
<th>Nodeid</th>
<th>PrevState</th>
<th>CurState</th>
<th>Red-Role/ (BAND)</th>
<th>Partner</th>
<th>Pair name</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP(0)</td>
<td>0/RSP0/CPU0</td>
<td>0x1</td>
<td>INFRA</td>
<td>FINAL</td>
<td>Active/Down</td>
<td>0x11</td>
<td></td>
</tr>
<tr>
<td>RP(0)</td>
<td>0/RSP1/CPU0</td>
<td>0x11</td>
<td>INFRA</td>
<td>FINAL</td>
<td>Standby/Down</td>
<td>0x1</td>
<td></td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/0/CPU0</td>
<td>0x821</td>
<td>INFRA</td>
<td>FINAL</td>
<td>Active/Down</td>
<td>0xffffffff</td>
<td></td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/2/CPU0</td>
<td>0x841</td>
<td>INFRA</td>
<td>FINAL</td>
<td>Active/Down</td>
<td>0xffffffff</td>
<td></td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/3/CPU0</td>
<td>0x851</td>
<td>INFRA</td>
<td>--</td>
<td>Unknown/Down</td>
<td>0xffffffff</td>
<td></td>
</tr>
</tbody>
</table>

Config Info for Node = node0_RSP0_CPU0
LRd basic configuration data:

```
node : 0x1
lr_id : 0
lr_name : Owner
dsc node : 0x1
dsc partner node : 0x11
dlrs node : 0x1
dlrs partner node : 0x11
am I dsc : Yes
am I stby dsc : NO
am I dlrs : Yes
am I stby dlrs : NO
primary node : 0x1
primary node1 : 0x11
mcast addr : 0x0
mac addr : 0x0211bfcfe7e
```


++++ lrd_show -I for this SDR-s DSDRSC [17:21:36.846 UTC Fri Dec 18 2009] ++++
Success: node_count=5, ready=1
node=0x1, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr_name=Owner,
pd_card_type=0x100302, partner=0x11
node=0x11, type=0, memsize=256, cpus=1, speed=100, sw_state=6, red_state=2, lr_name=Owner,
pd_card_type=0x100302, partner=0x1
node=0x821, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_name=Owner,
pd_card_type=0x30207
node=0x841, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_name=Owner,
pd_card_type=0x30207
node=0x851, type=2, memsize=256, cpus=1, speed=100, sw_state=0, red_state=0, lr_name=Owner,
pd_card_type=0x3020a


+++ lrdbg -n -1: lrd server node states [17:21:37.240 UTC Fri Dec 18 2009] ++++
```
<table>
<thead>
<tr>
<th>Type</th>
<th>Node</th>
<th>Nodeid</th>
<th>Prev State</th>
<th>Cur State</th>
<th>LRId</th>
<th>(PD ctype)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP(0)</td>
<td>0/RSP0/CPU0</td>
<td>0x1</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0</td>
<td>(0x100302) (-1)</td>
</tr>
<tr>
<td>RP(0)</td>
<td>0/RSP1/CPU0</td>
<td>0x11</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0</td>
<td>(0x100302) (-1)</td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/0/CPU0</td>
<td>0x821</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0</td>
<td>(0x30207) (-1)</td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/2/CPU0</td>
<td>0x841</td>
<td>RUNNING_MBI(5)</td>
<td>RUNNING_ENA(6)</td>
<td>0</td>
<td>(0x30207) (-1)</td>
</tr>
<tr>
<td>LC(2)</td>
<td>0/3/CPU0</td>
<td>0x851</td>
<td>BRINGDOWN(7)</td>
<td>NOT_PRESENT(0)</td>
<td>0</td>
<td>(0x3020a) (-1)</td>
</tr>
</tbody>
</table>
```


+++ lrdbg -n -1: lrd server node states [17:21:37.240 UTC Fri Dec 18 2009] ++++


+++ lrdbg -n -1: lrd server node states [17:21:37.766 UTC Fri Dec 18 2009] ++++

+++ lrdbg -s -1: lrd server software states [17:21:37.914 UTC Fri Dec 18 2009] ++++

--- lrdbg -s -1: lrd server software states [17:21:38.294 UTC Fri Dec 18 2009] ----

++++++++++ show ltrd-trace server [17:21:38.439 UTC Fri Dec 18 2009] ++++++++++
lrd_show_ltrace -F lrd/sntf -TP1

41 wrapping entries (1024 possible, 0 filtered, 41 total)

Shelfmgr Notfs Rcvd:

```
<table>
<thead>
<tr>
<th>R/S/I</th>
<th>node_state</th>
<th>cardstate</th>
<th>adminpower</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RUNNING_ENA</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Dec 14 11:19:58.255 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.259 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.264 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.267 lrd/sntf 0/RSP0/CPU0 t13 : 0/75/0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.268 lrd/sntf 0/RSP0/CPU0 t13 : 0/74/0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:59.320 lrd/sntf 0/RSP0/CPU0 t13 : 0/1/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:59.335 lrd/sntf 0/RSP0/CPU0 t13 : 0/225/0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:59.342 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:59.354 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:23.304 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:23.314 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:21:45.710 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:21:46.237 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:22:01.426 lrd/sntf 0/RSP0/CPU0 t13 : 0/1/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:22:01.426 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:23:21.504 lrd/sntf 0/RSP0/CPU0 t13 : 0/130/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:23:21.511 lrd/sntf 0/RSP0/CPU0 t13 : 0/132/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 15:42:37.504 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 15:42:37.608 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 15:42:37.614 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 15:43:02.999 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 15:43:48.408 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 15:45:05.176 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 15 14:53:15.444 lrd/sntf 0/RSP0/CPU0 t13 : 0/133/1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
show tech-support lrd

---------- show ltrd-trace server [17:21:38.840 UTC Fri Dec 18 2009] ----------

++++++++++ show ltrd-trace server [17:21:38.985 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/sntf -TP2
41 wrapping entries (1024 possible, 0 filtered, 41 total)

Shelfmgr

Notfs processed:

<table>
<thead>
<tr>
<th>n-state</th>
<th>pd-ctype</th>
<th>pi-ctype</th>
<th>nodeid</th>
<th>o-LRid</th>
<th>LRid</th>
<th>o-state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 14 11:19:58.261 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0 (0x841)         0 0 NOT_PRESENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.265 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/CPU0 (0x821)         0 0 NOT_PRESENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.268 lrd/sntf 0/RSP0/CPU0 t13 : 0/FT1/SP (0x4b0)         -1 -1 NOT_PRESENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:58.269 lrd/sntf 0/RSP0/CPU0 t13 : 0/FT0/SP (0x4a0)         -1 -1 NOT_PRESENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dec 14 11:19:59.327 lrd/sntf 0/RSP0/CPU0 t13 : 0/RSP1/CPU0(0x11 )        0 0 NOT_PRESENT |

Dec 14 11:20:23.306 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0 (0x841)         0 0 PRESENT |

Dec 14 11:19:59.341 lrd/sntf 0/RSP0/CPU0 t13 : 0/PM1/SP (0xe10)         -1 -1 NOT_PRESENT |

Dec 14 11:19:59.345 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0 (0x841)         0 0 PRESENT |

Dec 14 11:20:23.316 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/CPU0 (0x821)         0 0 BOOTING |

Dec 14 11:20:23.316 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0 (0x841)         0 0 BOOTING |

Dec 14 11:21:45.711 lrd/sntf 0/RSP0/CPU0 t13 : 0/0/CPU0 (0x821)         0 0 MBI_BOOTING |

Dec 14 11:21:46.239 lrd/sntf 0/RSP0/CPU0 t13 : 0/2/CPU0 (0x841)         0 0 MBI_BOOTING |

Dec 15 11:42:37.508 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0 (0x851)         0 0 NOT_PRESENT |

Dec 14 11:42:37.609 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0 (0x851)         0 0 PRESENT |

Dec 14 11:43:03.000 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0 (0x851)         0 0 BOOTING |

Dec 14 11:43:48.409 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0 (0x851)         0 0 MBI_BOOTING |

Dec 15 11:45:15.447 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0 (0x851)         0 0 RUNNING_ENA |

Dec 15 11:45:15.462 lrd/sntf 0/RSP0/CPU0 t13 : 0/3/CPU0 (0x851)         0 0 BRINGDOWN |


++++++++++ show ltrd-trace server [17:21:39.548 UTC Fri Dec 18 2009] ++++++++++

lrd_show_ltrace -F lrd/sreg -TP1
29 wrapping entries (64 possible, 0 filtered, 29 total)

Client New Registrations:

<table>
<thead>
<tr>
<th>jid</th>
<th>pid</th>
<th>Msg-op</th>
</tr>
</thead>
</table>

Dec 14 11:19:47.723 lrd/sreg 0/RSP0/CPU0 t15 : 389 213071 DLRSC
dlrsc-state Unknwn
Dec 14 11:19:47.725 lrd/sreg 0/RSP0/CPU0 t15 : 406 213090 Node State
<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Event-flags</th>
<th>Card-flags</th>
<th>jid</th>
<th>pid</th>
<th>Curr-msg-op</th>
<th>New-Msg-op</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 14 11:19:47.727</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 95</td>
<td>163876 Pri LR</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:47.731</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 168</td>
<td>176173 Pri LR</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:47.739</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 404</td>
<td>184381 Node State</td>
<td>RP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:47.746</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 283</td>
<td>213089 LR Crt/Del</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:47.755</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 225</td>
<td>208966 Node State</td>
<td>RP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:56.522</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 335</td>
<td>221289 Node State</td>
<td>RP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:00.929</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 213089</td>
<td>Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:04.054</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 245</td>
<td>245905 DLRSC</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:04.054</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 256</td>
<td>245902 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:04.054</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 241</td>
<td>245901 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:04.699</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 219</td>
<td>237682 Node State</td>
<td>RP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:09.686</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 289</td>
<td>237695 Node State</td>
<td>RP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:09.904</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 246</td>
<td>245908 DLRSC</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:11.607</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 266</td>
<td>245907 DLRSC</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:15.748</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 155</td>
<td>213092 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:20.401</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 341</td>
<td>254123 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:24.754</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 278</td>
<td>254124 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:29.079</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 144</td>
<td>262347 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:33.883</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 342</td>
<td>262351 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:34.194</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 181</td>
<td>270550 Node State</td>
<td>LP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:36.280</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 312</td>
<td>254139 DLRSC</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:53.951</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 398</td>
<td>270596 DLRSC</td>
<td>Unknown</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:19:47.757</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 95</td>
<td>163876 Pri LR</td>
<td>Node</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:00.940</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 348</td>
<td>241796 DLRSC</td>
<td>Node</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:46.317</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 225</td>
<td>208966 Node State</td>
<td>LR</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec 14 11:20:46.317</td>
<td>lrd/sreg 0/RSP0/CPU0 t15 : 225</td>
<td>208966 unknown</td>
<td>RP</td>
<td>Unknown</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

```
show ltrd-trace server [17:21:40.125 UTC Fri Dec 18 2009]
```

```
show ltrd-trace server [17:21:40.326 UTC Fri Dec 18 2009]
```

```
lrd_show_ltrace -F lrd/sreg -TP2
```

29 wrapping entries (64 possible, 0 filtered, 29 total)
No messages to display
lrd_show_ltrace -F lrd/sdwn -TP1

No messages to display
lrd_show_ltrace -F lrd/sdwn -TP2

20 wrapping entries (1024 possible, 0 filtered, 20 total)

red-role partner pi-ctype LRId nodeid o-state n-state
------------------------------------------------------------------------------------
Dec 14 11:19:47.645 lrd/supd 0/RSP0/CPU0 t3 : 0/RSP0/CPU0(0x1 ) NO STATE ARB BAND
Active 0x11 RP 0
Dec 14 11:19:56.368 lrd/supd 0/RSP0/CPU0 t4 : 0/RSP0/CPU0(0x1 ) ARB BAND ADMIN BAND
Active 0x11 RP 0
Dec 14 11:20:18.381 lrd/supd 0/RSP0/CPU0 t1 : 0/RSP0/CPU0(0x1 ) ADMIN BAND INFRA BAND
Active 0x11 RP 0
Dec 14 11:20:54.823 lrd/supd 0/RSP0/CPU0 t4 : 0/RSP0/CPU0(0x1 ) INFRA BAND FINAL BAND
Active 0x11 RP 0
show tech-support mpls ldp

To automatically run `show` commands that display information specific to Multiprotocol Label Switching (MPLS) Label Distribution Protocol (LDP) debugging, use the `show tech-support mpls ldp` command in EXEC mode.

```
show tech-support mpls ldp {file send-to [background] [compressed|uncompressed]} [terminal [page] [location node-id]]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0a: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1a: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiskb: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
</tbody>
</table>
show tech-support mpls ldp

(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.

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

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

This command generates LDP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html
<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>mpls-ldp</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support mpls optical-uni

To automatically run `show` commands that display information specific to Multiprotocol Label Switching (MPLS) Optical User Network Interface (O-UNI) debugging, use the `show tech-support mpls optical-uni` command in EXEC mode.

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>file</strong></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><strong>send-to</strong></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td><strong>background</strong></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><strong>compressed</strong></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><strong>uncompressed</strong></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td><strong>terminal</strong></td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td><strong>page</strong></td>
<td>(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 <code>Ctrl+C</code> keys to stop the command output.</td>
</tr>
</tbody>
</table>
Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Note

This command generates O-UNI debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>ouni</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support mpls rsvp

To automatically run `show` commands that display information specific to Multiprotocol Label Switching (MPLS) Resource Reservation Protocol (RSVP) debugging, use the `show tech-support mpls rsvp` command in EXEC mode.

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

### Syntax Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(Optional) Displays the command output on a page at a time. Use the Return key to display the next page of information. If not used, output scrolls (that is, it does not stop for page breaks).</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><code>sent-to</code></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><code>background</code></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><code>compressed</code></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><code>uncompressed</code></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
</tbody>
</table>
**Command Default**

The command output is not compressed.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

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

Use the `show tech-support mpls` command to run `show` commands that display information specific to MPLS RSVP debugging. This command generates RSVP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See 'Obtaining Documentation and Submitting a Service Request' section on page iii in the Preface for Cisco Technical Support contact information.

**Note**

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

The following `show` commands run automatically when you run the `show tech-support mpls rsvp` command:

- `show rsvp interface detail`
- `show rsvp counters pak`
- `show rsvp counters handles`
- `show rsvp counters database private`
- `show rsvp counters messages private`
- `show rsvp counters memory`
- `show rsvp counters events`
- `show rsvp counters notifications-client`
- `show rsvp counters request`
- `show rsvp counters destroy-reasons`
- `show rsvp counters policy`
- `show rsvp graceful-restart`
- `show rsvp fast-reroute summary`
• show rsvp graceful-restart neighbors detail
• show rsvp hello instance detail
• show rsvp sender detail
• show rsvp reservation detail
• show rsvp request detail
• show rsvp session detail
• show rsvp authentication
• show rsvp sender private
• show rsvp reservation private
• show rsvp request private
• show rsvp interface private
• show rsvp installed private
• show rsvp trace events
• show rsvp trace default
• show rsvp trace buffer
• show rsvp trace interface
• show rsvp trace errors
• show rsvp trace client
• show rsvp debug-error

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>mpls-te or ouni</td>
<td>read</td>
</tr>
</tbody>
</table>

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

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

INTERFACE: GigE0/1/0/0 (ifh=0x1180060).
VRF ID: 0x0 (Default).
BW (bits/sec): Max=1230M. MaxFlow=1230M.
Allocated=0 (0%). MaxSub=0.
Signalling: No DSCP marking. No rate limiting.
States in: 0. Max missed msgs: 4.
Expiry timer: Not running. Refresh interval: 45s.
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
show tech-support mpls rsvp

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 0
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 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 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

-------------------------- 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
<table>
<thead>
<tr>
<th>Command</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resv confirm</td>
<td>0</td>
</tr>
<tr>
<td>Async Resv create</td>
<td>0</td>
</tr>
<tr>
<td>Listener Path create</td>
<td>0</td>
</tr>
<tr>
<td>Listener Path change</td>
<td>0</td>
</tr>
<tr>
<td>Listener Path delete</td>
<td>0</td>
</tr>
<tr>
<td>Listener Path FRR</td>
<td>0</td>
</tr>
<tr>
<td>Listener Assign Backup err</td>
<td>0</td>
</tr>
<tr>
<td>Listener Resv create</td>
<td>0</td>
</tr>
<tr>
<td>Listener Resv change</td>
<td>0</td>
</tr>
<tr>
<td>Listener Resv delete</td>
<td>0</td>
</tr>
<tr>
<td>Restart Time</td>
<td>0</td>
</tr>
<tr>
<td>Recovery Done</td>
<td>0</td>
</tr>
</tbody>
</table>
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**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>forwarding</td>
<td>(Optional) Displays forwarding information for a tunnel.</td>
</tr>
<tr>
<td>tunnel-name</td>
<td>Specifies the tunnel name that is used by the RSVP process.</td>
</tr>
<tr>
<td>tunnel name</td>
<td>Name for the tunnel.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
</tbody>
</table>
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.

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

Tip

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

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

Note

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

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

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>mpls-te</td>
<td>read</td>
</tr>
</tbody>
</table>
Examples

The following example shows some of the `show tech-support mpls traffic-eng` command output that is displayed on the terminal:

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

-------------------------------------------------------------------------------
show tech-support mpls traffic-eng
-------------------------------------------------------------------------------

------------------- show mpls traffic-eng tunnels summary ---------------------
Signalling Summary:
  LSP Tunnels Process: running
  RSVP Process: running
  Forwarding: enabled
  Head: 0 interfaces, 0 active signalling attempts, 0 established
  0 explicit, 0 dynamic
  0 activations, 0 deactivations
  0 recovering, 0 recovered
  Mids: 2
  Tails: 0
  Periodic reoptimization: every 3600 seconds, next in 2703 seconds
  Periodic FRR Promotion: every 300 seconds, next in 106 seconds
  Periodic auto-bw collection: disabled

Fast ReRoute Summary:
  Head: 0 FRR tunnels, 0 protected, 0 rerouted
  Mid: 0 FRR tunnels, 0 protected, 0 rerouted
  Summary: 0 protected, 0 link protected, 0 node protected, 0 bw protected
  Backup: 0 tunnels, 0 assigned
  Interface: 0 protected, 0 rerouted

------------------- show mpls traffic-eng counters tunnels summary ----------------
Head: Mid: Tail:
  Total: 0 Total: 8 Total: 0
  Sender Create: 0 Path Create: 2 Path Create: 0
  Sender Modify: 0 Path Change: 0 Path Change: 0
  Sender Delete: 0 Path Delete: 0 Path Delete: 0
  RESV Create: 0 Receiver Create: 2 Receiver Create: 0
  RESV Change: 0 Receiver Modify: 0 Receiver Modify: 0
  RESV Delete: 0 Receiver Delete: 0 Receiver Delete: 0
  Path Error: 0 RESV Create: 2 RESV Create: 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
  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:

<table>
<thead>
<tr>
<th>Setup Requests</th>
<th>Setup Admits</th>
<th>Setup Rejects</th>
<th>Setup Errors</th>
<th>Tear Requests</th>
<th>Tear Preempts</th>
<th>Tear Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Path</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Resv</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

--- More --- Zero Nodes Found.
- Flooding Protocol: OSPF
- Flooding Status: flooded
- 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

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>0</td>
</tr>
<tr>
<td>Ready</td>
<td>0</td>
</tr>
<tr>
<td>Partial</td>
<td>0</td>
</tr>
</tbody>
</table>

------------------------ 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
show tech-support mpls traffic-eng

Checksum error drops packets : 0
show tech-support multicast

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

```
show tech-support multicast [address-family|classic] [group group-address] {terminal [page] | file send-to} [background|compressed|uncompressed] [source source-address] [location node-id] [rack] [vrf vrf-name]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>address-family</td>
<td>(Optional) Collects address family specific information. It can be either ipv4 or ipv6.</td>
</tr>
<tr>
<td>classic</td>
<td>(Optional) Retrieves multicast related information using the non-fast method.</td>
</tr>
<tr>
<td>group</td>
<td>(Optional) Specifies the multicast group address.</td>
</tr>
<tr>
<td>group-address</td>
<td>(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.</td>
</tr>
<tr>
<td>terminal</td>
<td>(Optional) Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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).</td>
</tr>
<tr>
<td>file</td>
<td>(Optional) Specifies that the command output is saved to a specified file.</td>
</tr>
</tbody>
</table>
show tech-support multicast

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

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>source</td>
<td>(Optional) Displays the multicast source address.</td>
</tr>
<tr>
<td>source address</td>
<td>(Optional) Source address for multicast.</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node. The node-id argument is entered in the</td>
</tr>
<tr>
<td>node-id</td>
<td>rack/slot/module notation.</td>
</tr>
<tr>
<td>rack</td>
<td>(Optional) Displays the list of racks.</td>
</tr>
<tr>
<td>vrf</td>
<td>(Optional) Specifies a VPN routing and forwarding (VRF) instance.</td>
</tr>
<tr>
<td>vrf-name</td>
<td>Name of VRF.</td>
</tr>
</tbody>
</table>

**Command Default**

Output is logged to the terminal screen.

**Command Modes**

EXEC
Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Use the `show tech-support multicast` command to run `show` commands that display information specific to multicast-related information for PIM, IGMP, and mcast. This command generates multicast information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note

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

The following `show` commands run automatically when you run the `show tech-support multicast` command:

- `show version`
- `show running-config`
- `show ip interface brief`
- `show install`
- `show processes aborts location all`
- `show processes blocked location all`
- `show context location all`
- `show memory summary location all`
- `show ip access-lists show ip mhost default-interface`
- `show msdp summary`
- `show msdp globals`
- `show msdp sa-cache summary`
- `show msdp statistics peer`
• show pim group-map
• show pim topology route-count
• show pim topology ip-address
• show pim rpf count
• show pim rpf
• show pim traffic
• show pim join-prune statistic
• show pim interface state-on
• show pim tunnel info all
• show pim neighbor
• show pim nsf
• show pim summary
• show igmp groups summary
• show igmp groups group-address
• show igmp interface
• show igmp traffic
• show igmp nsf
• show igmp summary
• show mrib client filter
• show mrib route summary
• show mrib route source-address
• show mrib nsf
• show cef ipv4 prefix location node-id
• show mfib route summary location node-id
• show mfib route source-address location node-id
• show mfib counter location node-id
• show mfib nsf location node-id
• show mfib hardware route mofrr location node-id
• show mfib hardware route olist detail source-address location node-id
• show mfib hardware interface detail location node-id
• show mfib hardware route statistics source-address location node-id
• show mfib hardware resource-counter location node-id
• show mfib hardware adjacency detail location node-id
The `show mfib hardware route accept-bitmap detail source-address location node-id` command can be used to display the status of multicast routes.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services or cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>multicast</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support netflow

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

`show tech-support netflow [file send-to [background] [compressed] [uncompressed]] [location node-id] [rack]`

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rep: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>location node-id</td>
<td>(Optional) Specifies a node. The <code>node-id</code> argument is entered in the rack/slot/module notation.</td>
</tr>
<tr>
<td>rack</td>
<td>(Optional) Displays the list of racks.</td>
</tr>
</tbody>
</table>

**Command Modes**

EXEC
Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.9.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

This command generates netflow debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
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] [rack]`

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(Optional) Specifies that the command output is displayed one page at a time.</td>
</tr>
<tr>
<td></td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td>Press the Ctrl+C keys to stop the command output.</td>
</tr>
<tr>
<td>rack</td>
<td>(Optional) Displays the list of racks.</td>
</tr>
</tbody>
</table>
### Command Modes

EXEC

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

---

**Tip**

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

Use the `show tech-support nrs` command to collect data for the NRS. The NRS is a central registration authority and is used by the Replication Data Services (RDS) and the Event Notification Services (ENS). This command generates NRS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

---

**Note**

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

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html
show tech-support password

To automatically run `show` commands that display information to include the password in the output for debugging, use the `show tech-support password` command in EXEC mode.

```
show tech-support password [file send-to [background] [compressed|uncompressed]] [location node-id] [terminal [page]]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>file</strong></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><strong>send-to</strong></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0a: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1a: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiskb: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><strong>background</strong></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><strong>compressed</strong></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><strong>uncompressed</strong></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td><strong>terminal</strong></td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td><strong>page</strong></td>
<td>(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 <code>Ctrl+C</code> keys to stop the command output.</td>
</tr>
</tbody>
</table>

---

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x

OL-26510-03
**location node-id**  
(Optional) Specifies a node. The `node-id` argument is entered in the `rack/slot/module` notation.

---

### Command Modes

**EXEC**

### Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

### Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with `.tgz` extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the `.tgz` file to a server or local machine. For example, `copy harddisk://showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

**Tip**

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

This command generates output to include the password for debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

**Note**

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: [http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html](http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html)

### Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
</tbody>
</table>
To automatically run `show` commands that display information specific to Packet Forwarding Infrastructure (PFI) debugging for all components, use the `show tech-support pfi` command in EXEC mode.

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

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>file</strong></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><strong>send-to</strong></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>- filename</td>
</tr>
<tr>
<td></td>
<td>- bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>- disk0: filename</td>
</tr>
<tr>
<td></td>
<td>- disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>- disk1: filename</td>
</tr>
<tr>
<td></td>
<td>- disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>- ftp: filename</td>
</tr>
<tr>
<td></td>
<td>- harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>- harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>- harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>- nvram: filename</td>
</tr>
<tr>
<td></td>
<td>- rcp: filename</td>
</tr>
<tr>
<td></td>
<td>- tftp: filename</td>
</tr>
<tr>
<td><strong>background</strong></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><strong>compressed</strong></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><strong>uncompressed</strong></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td><strong>terminal</strong></td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td><strong>page</strong></td>
<td>(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.</td>
</tr>
</tbody>
</table>

Press the Ctrl+C keys to stop the command output.
location node-id  
(Optional) Specifies a node. The node-id argument is entered in the rack/slot/module notation.

all  
Specifies all locations.

trace-only  
Displays only trace information.

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Use the show tech-support pfi command to collect information for the PFI, which consists of interface-related date with regards to netio and interface manager. This command generates output PFI debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note

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

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support pfi
show tech-support placement

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

```
show tech-support placement [terminal | page] | file send-to [background | compressed | uncompressed]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
</tbody>
</table>
show tech-support placement

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

Tip

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

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

Note

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
<tr>
<td>sysmgr</td>
<td>read</td>
</tr>
</tbody>
</table>

Examples

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

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

show tech-support placement

run lrd_show -I

Success: node_count=6, ready=1
node=0x11, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_0
node=0x41, type=1, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr_f
node=0x42, type=1, memsize=256, cpus=1, speed=100, sw_state=6, red_state=1, lr_f
node=0x61, type=2, memsize=256, cpus=1, speed=100, sw_state=6, red_state=0, lr_0
show tech-support placement

Oct 11 19:23:59.949 main bag_register_all_placed_mgmt_defa_bags rc = No error
Oct 11 19:23:59.980 main bag_register_all_placed_mgmt_bags rc = No error
Oct 11 19:24:06.420 main Checkpoint initialization succeeded
Oct 11 19:24:06.665 main Starting for the first time in this LR
Oct 11 19:24:06.725 nodes registered nodes bags, rc = 0 (No error)
Oct 11 19:24:06.728 nodes We are running on node 0/RP0/CPU0
Oct 11 19:24:06.734 nodes lrd_register_card_state ok
Oct 11 19:24:06.734 nodes Setting timer for 70 seconds, thread 1
Oct 11 19:24:06.748 nodes Successfully got inventory (attempt 1 of 30)
Oct 11 19:24:06.748 nodes Stopping timer
Oct 11 19:24:06.748 nodes LR inventory has 4 RP/DRP nodes
Oct 11 19:24:06.850 nodes update_node: nodeid 0/4/CPU1, pnodeid [NODEID_INV0
Oct 11 19:24:06.850 nodes Creating new node
Oct 11 19:24:06.877 nodes update_node: nodeid 0/4/CPU0, pnodeid [NODEID_INV0
Oct 11 19:24:06.877 nodes Creating new node
Oct 11 19:24:06.877 nodes update_node: nodeid 0/RP0/CPU0, pnodeid 0/RP1/CPU1
Oct 11 19:24:06.877 nodes Creating new node
Oct 11 19:24:06.917 nodes update_node: nodeid 0/RP1/CPU0, pnodeid 0/RP0/CPU2
Oct 11 19:24:06.917 nodes Nodeid 0/RP1/CPU0 is already in node object Place
Oct 11 19:24:06.917 nodes Information differs
Oct 11 19:24:06.917 nodes node 0/RP0/CPU0 is active
Oct 11 19:24:06.917 nodes node::_get_active_nodeid(Placed_node (482c1088) (0
Oct 11 19:24:06.917 nodes rescan_lrd_inventory rc = 0 (No error)
Oct 11 19:24:06.917 nodes apply_startup_type: no action required (0)
Oct 11 19:24:06.978 properties registered properties bags, rc = 0 (No error)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (48283504) (value 100)
Oct 11 19:24:06.978 properties inserting Classaffinity (482827b8) (value 250.00g
Oct 11 19:24:06.978 properties inserting Classaffinity (48282830) (value 250.00i
Oct 11 19:24:06.978 properties inserting Classaffinity (4828286c) (value 250.00g
Oct 11 19:24:06.978 properties inserting Classaffinity (482828a8) (value 250.00i
Oct 11 19:24:06.978 properties inserting Selfaffinity (483297ac) (value -160.00)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (483297e0) (value -50)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (48329814) (value 50.)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (48329848) (value 600)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (48282920) (value 70.00) i
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (48329918) (value -20)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832b818) (value 250)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832b880) (value -402)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832b8b4) (value -20)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832b8e8) (value 250)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832b950) (value -402)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832b9b8) (value -40)
Oct 11 19:24:06.978 properties inserting Nodetypeaffinity (4832ba0) (value 100)
show tech-support platform

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

```
show tech-support platform {terminal [page] [redundancy] file send-to] rack}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>redundancy</td>
<td>(Optional) Displays platform redundancy related diagnostics for tech-support.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>rack</td>
<td>(Optional) Displays the list of racks.</td>
</tr>
</tbody>
</table>

**Command Default**

No default behavior or values
Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

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.

Tip

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 plimasic statistics summary location node-id`

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


Examples

The following example shows some of the `show tech-support platform` command output:

```
RP/0/RP0/CPU0:router# show tech-support platform
---------------------------- show controller squid summary ----------------------------
Cpuctrl discovered 14 device on node 0/1/CPU0:
Cpuctrl HW version string for this node is:
Squid FPGA v2.07 Fri Jan 23 16:21:01 2004 userb
```
--- 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 : 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

--- show controller plim asic statistics summary location 0/1/CPU0 ---
From Egressq: 9317309  SIF Drop: 0
TLK Drop: 0

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

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

Port 2
To SPA: 8779564  From SPA: 8673556
RSI FIFO Drop: 0  QPM Drop: 0
QPM OVFL: 0  RPB Drop: 0
**show tech-support pos**

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

```
show tech-support pos {terminal [page] | file send-to [background] [compressed | uncompressed]} interface type instance [show-only] [trace-only] [location node-id] [all] [rack]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>interface</td>
<td>Collects information about a specific interface.</td>
</tr>
<tr>
<td>type</td>
<td>Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Instance</th>
<th>Either a physical interface instance or a virtual interface instance as follows:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Physical interface instance. Naming notation is <code>rack/slot/module/port</code> and a</td>
</tr>
<tr>
<td></td>
<td>slash between values is required as part of the notation.</td>
</tr>
<tr>
<td></td>
<td>• Virtual interface instance. Number range varies depending on interface type.</td>
</tr>
</tbody>
</table>

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

<p>| Command Modes   | EXEC                        |</p>
<table>
<thead>
<tr>
<th>Command History</th>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
Usage Guidelines

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.

Tip

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

Note

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

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


<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

Examples

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

```
RP/0/RP0/CPU0:router# show tech-support pos

show tech-support pos

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 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 713061E010803!
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 172.29.52.72 255.255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
description Connected to P2 CRS-8 Bundle-Ether 28
ipv4 address 10.12.28.1 255.255.255.0
bundle minimum-active links 1
bundle minimum-active bandwidth 1000000!
interface Bundle-Ether28.1
description Connected to P2_CRS-8 Bundle-Ether 28.1
ipv4 address 10.12.29.1 255.255.255.0
dot1q vlan 29!
interface Bundle-Ether28.2
description Connected to P2_CRS-8 Bundle-Ether 28.2
ipv4 address 10.12.30.1 255.255.255.0
dot1q vlan 30!
interface Bundle-Ether28.3
description Connected to P2_CRS-8 Bundle-Ether 28.3
ipv4 address 10.12.31.1 255.255.255.0
dot1q vlan 31!
interface Bundle-POS24
description Connected to P2_CRS-8 Bundle-POS 24
ipv4 address 10.12.24.1 255.255.255.0
bundle minimum-active links 1
bundle minimum-active bandwidth 2488320!
interface Loopback0
ipv4 address 10.1.1.1 255.255.255.255
!
interface MgmtEth0/4/CPU0/0
description Connected to Lab LAN
ipv4 address 172.29.52.46 255.255.255.0
!
interface MgmtEth0/4/CPU1/0
description Connected to Lab LAN
ipv4 address 172.29.52.47 255.255.255.0
!
interface MgmtEth0/RP0/CPU0/0
description Connected to Lab LAN
ipv4 address 172.29.52.70 255.255.255.0
!
show tech-support ppp

To automatically run `show` commands that display information specific to Point to Point Protocol (PPP) debugging, use the `show tech-support ppp` command in EXEC mode.

`show tech-support ppp [file send-to] [background] [compressed|uncompressed] [interface type instance] [location node-id] [rack]`

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>- <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk0a: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk1a: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>harddiskb: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>tftp: filename</code></td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>interface</td>
<td>Collects information about a specific interface.</td>
</tr>
<tr>
<td>type</td>
<td>Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Command</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>EXEC</td>
</tr>
</tbody>
</table>

**location**  
(Optional) Specifies a node.

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

**all**  
(Optional) Specifies all locations.

**rack**  
(Optional) Displays the list of racks.

**Command Modes**

<table>
<thead>
<tr>
<th>Command</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXEC</td>
<td></td>
</tr>
</tbody>
</table>

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.9.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

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

This command generates PPP debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router. See Obtaining Documentation and Submitting a Service Request section on page iii in the Preface for Cisco Technical Support contact information.
This command is not required during normal use of the router.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

Examples

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

```
RP/0/RP0/CPU0:router# show tech-support ppp

show tech-support ppp

show running-config

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

hostname P1_CRS-8
line console
  exec-timeout 600 0
  session-timeout 600
!
line default
  exec-timeout 600 0
  session-timeout 600
```
show tech-support qos

To automatically run `show` commands that display platform independent Quality of Service (QoS) debugging information, use the `show tech-support qos` command in EXEC mode.

```
show tech-support qos pi [file send-to] [background] [compressed|uncompressed] [location node-id|all] [rack]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pi</td>
<td>Collects platform independent QOS related information and saves to disk.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
</tbody>
</table>
| send-to   | Name of the file. The following valid options are listed:
|           | - *filename*  
|           | - *bootflash: filename*  
|           | - *disk0: filename*  
|           | - *disk0a: filename*  
|           | - *disk1: filename*  
|           | - *disk1a: filename*  
|           | - *ftp: filename*  
|           | - *harddisk: filename*  
|           | - *harddiska: filename*  
|           | - *harddiskb: filename*  
|           | - *nvram: filename*  
|           | - *rcp: filename*  
|           | - *tftp: filename*  |
| background | (Optional) Specifies that the command runs in the background. |
| compressed | (Optional) Displays compressed command output. |
| uncompressed | (Optional) Displays the command output with no compression. |
| location | (Optional) Specifies a node. |
| node-id | Node ID. The *node-id* argument is entered in the *rack/slot/module* notation. |
| rack | (Optional) Displays the list of racks. |
show tech-support qos

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.9.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Note

This command generates QoS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
**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] [rack]}
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
</tbody>
</table>
| 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. |
| rack               | (Optional) Displays the list of racks. |
Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines
This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

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

Use the show tech-support rdfs command to run show commands that display information specific to RDSFS debugging and is relevant to bring to a ready state. This command generates RDSFS debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

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

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

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

Examples
The following example shows how to run show tech-support rdfs command:

RP/0/RP0/CPU0:router# show tech-support rdfs
**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]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(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.</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><code>send-to</code></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>- <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk0a: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>disk1a: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>harddiskb: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>- <code>tftp: filename</code></td>
</tr>
<tr>
<td><code>background</code></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><code>compressed</code></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><code>uncompressed</code></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td><code>ipv4</code></td>
<td>(Optional) Displays the IPv4 command output.</td>
</tr>
</tbody>
</table>
ipv6 (Optional) Displays the IPv6 command output.

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router’s hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

The RIB data stores the best path information for the routing protocol that is sent to FIB to help build the data structures. This command generates RIB debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

Note

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
**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.

```plaintext
show tech-support routing bfd [terminal [page] | file send-to [background] [compressed|uncompressed] [rack]]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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 <strong>Ctrl-C</strong> keys to stop the command output.</td>
</tr>
<tr>
<td>file</td>
<td>(Optional) Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
</tbody>
</table>
show tech-support routing bfd

rack  (Optional) Displays the list of racks.

Command Default
The command output is not compressed.

Command Modes
EXEC

Command History
<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines
This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

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

Tip
Use the show tech-support routing bfd command to run show commands that display information specific to BFD debugging. This command generates BFD debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

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

Note
The following show commands run automatically when you run the show tech-support routing bfd command:

- show bfd session
- show bfd
- show memory heap fail all
- show memory summary location all
- show process blocked location all
- show adjacency
- show bfd location
show bfd session detail location node-id
• show bfd session agent detail location
• show bfd timer-groups location node-id
• show bfd index-mgrs location node-id
• show bfd session-array location node-id
• show bfd interfaces location node-id
• show bfd bundles detail location node-id
• show bfd counters packet invalid location node-id
• show bfd counters packet private location node-id
• show bfd client private
• show bfd trace all-cards
• show controllers cpuctrl summary
• show controllers cpuctrl client pdma bfd active location all
• show controllers cpuctrl ports ingressq pdma all active location node-id
• show controllers cpuctrl ports egressq pdma all active location node-id
• show controllers pse statistics location node-id

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

+-----------------+----------------+
| Task ID         | Operations     |
|-----------------+----------------|
| basic-services  | read           |
+-----------------+----------------+
show tech-support routing isis

To automatically run show commands that display information specific to Intermediate System-to-Intermediate System (IS-IS) debugging, use the show tech-support routing isis command in EXEC mode.

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

Syntax Description

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
</tbody>
</table>
show tech-support routing isis

Command Default
The command output is not compressed.

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

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.

Tip

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

The following `show` commands run automatically when you run the `show tech-support routing isis` command:

- `show isis trace all location all`
- `show isis all`
- `show clns statistics`
- `show imds interface all`
- `show ipv4 int brief`
- `show ipv6 int brief`
- `show route ipv4`
- `show route ipv6`
- `show inst which comp clns-isis`

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

The following example shows some of the `show tech-support routing isis` command output:

```
RP/0/RP0/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 08:38:18.451 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 08:38:18.451 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 08:38:18.536 isis/isp/sev 0/RP0/CPU0 t1 STARTUP_MODULE
Mar 29 08:38:19.274 isis/isp/sev 0/RP0/CPU0 t1 IO_PAK_SERVER_CONNECTED
Mar 29 08:38:19.551 isis/isp/sev 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/std 0/RP0/CPU0 t4 THREAD_FOP_PROCESS
Mar 29 08:38:27.622 isis/isp/std 0/RP0/CPU0 t4 SSM_TICK_TIMER_FIRES CR-SYNC-LSPDB
Mar 29 08:38:27.622 isis/isp/std 0/RP0/CPU0 t4 SSM_STATE_RESULT CR-SYNC-LSPDB
Mar 29 08:38:27.622 isis/isp/std 0/RP0/CPU0 t4 SSM_STATE_TIME_BUDGET CR-SYNC-LSPDB
Mar 29 08:38:27.622 isis/isp/std 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 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):
  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

<table>
<thead>
<tr>
<th>Interface</th>
<th>All</th>
<th>Adj</th>
<th>Adj Topos</th>
<th>Adv Topos</th>
<th>CLNS</th>
<th>MTU</th>
<th>Prio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OK</td>
<td>L1</td>
<td>Run/Cfg</td>
<td>Run/Cfg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POS0/1/0/0</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

No IS-IS isp mesh-groups found

IS-IS isp 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:

<table>
<thead>
<tr>
<th>State</th>
<th>L1</th>
<th>L2</th>
<th>L1L2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Init</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Failed</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

IS-IS isp neighbors:

<table>
<thead>
<tr>
<th>System Id</th>
<th>Interface</th>
<th>SNPA</th>
<th>State Holdtime</th>
<th>Type</th>
<th>IETF-NSF</th>
</tr>
</thead>
</table>

IS-IS isp Database Summary for all LSPs

<table>
<thead>
<tr>
<th>Fragment 0 Counts</th>
<th>L1</th>
<th>L2</th>
<th>Total</th>
<th>Purged</th>
<th>L1</th>
<th>L2</th>
<th>Total</th>
<th>All</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Router LSPs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pseudo-node LSPs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>All LSPs</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>L1</th>
<th>Reach</th>
<th>UnReach</th>
<th>Total</th>
<th>L2</th>
<th>Reach</th>
<th>UnReach</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Router nodes:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pseudo nodes:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total nodes:</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Interface</th>
<th>Handle</th>
<th>CircNum</th>
<th>DIS Areas</th>
<th>Adj Chkpt ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 ] [ no-trace ] [ active|standby ] { terminal [ page ]| file send-to [ background ] [ compressed|uncompressed ] }
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>process-id</code></td>
<td>(Optional) Name of the OSPF process.</td>
</tr>
<tr>
<td><code>no-trace</code></td>
<td>(Optional) Excludes trace information from the command output.</td>
</tr>
<tr>
<td><code>active</code></td>
<td>(Optional) Displays information from active route processor only.</td>
</tr>
<tr>
<td><code>standby</code></td>
<td>(Optional) Displays information from standby route processor only.</td>
</tr>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(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.</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
</tbody>
</table>
sent-to Name of the file. The following valid options are listed:

- filename
- bootflash: filename
- compactflash: filename
- disk0: filename
- disk1: filename
- flash: filename
- ftp: filename
- harddisk: filename
- harddiska: filename
- nvram: filename
- rcp: filename
- slot0: filename
- slot1: filename
- tftp: filename

background (Optional) Specifies that the command runs in the background.

compressed (Optional) Displays compressed command output.

uncompressed (Optional) Displays the command output with no compression.

Command Default The command output is not compressed.

Command Modes EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.2</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk://showtech/name.tgz tftp://server_path.
For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

**Tip**

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

Use the `show tech-support routing ospf` command to run `show` commands that display information specific to OSPF debugging. This command generates OSPF debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

**Note**

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

The following `show` commands run automatically when you run the `show tech-support routing ospf` command:

- `show ospf`
- `show ospf vrf all`
- `show ospf summary`
- `show ospf vrf all summary`
- `show ospf interface`
- `show ospf vrf all interface`
- `show ospf virtual-links`
- `show ospf vrf all virtual-links`
- `show ospf neighbor detail`
- `show ospf vrf all neighbor detail`
- `show ospf database database-summary`
- `show ospf vrf all database database-summary`
- `show ospf database router self-originate`
- `show ospf vrf all database router self-originate`
- `show ospf statistics prot`
- `show ospf statistics raw-io`
- `show ospf statistics te`
- `show ospf statistics spf`
- `show ospf statistics rib-thread`
- `show ospf statistics rib-batch`
- `show ospf message-queue`
- `show ospf border-routers`
• show ospf vrf all border-routers
• show ospf retransmission-list
• show ospf vrf all retransmission-list
• show ospf request-list
• show ospf vrf all request-list
• show ospf flood-list
• show ospf vrf all flood-list
• show ospf maxage-list
• show ospf vrf all maxage-list
• show ospf bad-checksum
• show ospf vrf all bad-checksum
• show ospf standby
• show ospf vrf all standby
• show ip interface brief
• show route ipv4 summary
• show route vrf all ipv4 summary
• show ospf trace all
• show logging process ospf

**Note**

- If you do not specify any options, all information is collected by default.
- Active and standby options are exclusive and only one of them can be used. When neither active or standby is used, the information is collected from both RPs.
- The no-trace option can be used with or without specifying the active or standby options.
- When standby option is specified, only ospf-related information from the standby RP is included in the output. The common non-ospf information such as version, placement info, logging and so on are not included.

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
</tbody>
</table>
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.

```bash
show tech-support routing ospfv3 [ instance ] [detail] {terminal [page]} file send-to [background] [compressed|uncompressed]}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>instance</code></td>
<td>(Optional) Name of the OSPFv3 instance.</td>
</tr>
<tr>
<td><code>detail</code></td>
<td>(Optional) Displays all available OSPFv3 information.</td>
</tr>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(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.</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><code>sent-to</code></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><code>background</code></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
</tbody>
</table>
compressed (Optional) Displays compressed command output.

uncompressed (Optional) Displays the command output with no compression.

**Command Default**

The command output is not compressed.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.3.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

**Tip**

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

Use the `show tech-support routing ospfv3` command to run `show` commands that display information specific to OSPFv3 debugging. This command generates OSPFv3 debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

**Note**

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

The following `show` commands run automatically when you run the `show tech-support routing ospfv3` command:

- `show version`
- `show run router ospfv3`
- `show route ipv6 ospf`
- `show ospfv3`
- `show ospfv3 interface`
- `show ospfv3 virtual-links`
• show ospfv3 neighbor
• show ospfv3 message-queue
• show ospfv3 request-list
• show ospfv3 retransmission-list
• show ospfv3 flood-list
• show ospfv3 border-routers
• show ospfv3 database database-summary
• show ospfv3 database
• show ospfv3 route

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

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support routing rpl

To automatically run `show` commands that display information specific to Routing Policy Language (RPL) debugging, use the `show tech-support routing rpl` command in EXEC mode.

```
show tech-support routing rpl [file send-to [background] [compressed|uncompressed]] [terminal | page]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>terminal</strong></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><strong>page</strong></td>
<td>(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.</td>
</tr>
<tr>
<td><strong>file</strong></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><strong>sent-to</strong></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><strong>background</strong></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><strong>compressed</strong></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><strong>uncompressed</strong></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
</tbody>
</table>
**Command Default**

The command output is not compressed.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 3.5.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

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.

**Tip**

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

The following `show` commands run automatically when you run the `show tech-support routing rpl` command:

- `show running-config rpl`
- `show process policy_repository`
- `show rpl route-policy policy-name pxl`
- `show sysdb reg notif path /ipc/gl/policy_lang/policies/routing/ policy-name /pxl s`

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html
<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
</tbody>
</table>
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.

```plaintext
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

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>interface</td>
<td>(Optional) Collects information about a specific interface.</td>
</tr>
<tr>
<td>type</td>
<td>Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
</tbody>
</table>

Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
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.

<table>
<thead>
<tr>
<th>show-only</th>
<th>(Optional) Collects only show command information.</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Specifies that the command output is displayed on the terminal.</td>
</tr>
<tr>
<td>trace-only</td>
<td>(Optional) Collects only trace information.</td>
</tr>
<tr>
<td>location node-id</td>
<td>(Optional) Specifies a node. The <code>node-id</code> argument is entered in the <code>rack/slot/module</code> notation.</td>
</tr>
<tr>
<td>all</td>
<td>(Optional) Specifies all locations.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
</tbody>
</table>

**Command Modes**

- EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>
This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

**Tip**

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

Use the `show tech-support serial` command for serial-related data, such as T1/E1. This command generates serial debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

**Note**

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
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 [rack]
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>terminal</code></td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td><code>page</code></td>
<td>(Optional) Displays the command output on a single page at a time. Use the</td>
</tr>
<tr>
<td></td>
<td>Return key to display the next line of output or use the space bar to display</td>
</tr>
<tr>
<td></td>
<td>the next page of information. If not used, the output scrolls (that is, it</td>
</tr>
<tr>
<td></td>
<td>does not stop for page breaks).</td>
</tr>
<tr>
<td></td>
<td>Press the Ctrl-C keys to stop the command output.</td>
</tr>
<tr>
<td><code>file</code></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><code>sent-to</code></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>•    <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>compactflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>flash: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>slot0: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>slot1: filename</code></td>
</tr>
<tr>
<td></td>
<td>•    <code>tftp: filename</code></td>
</tr>
<tr>
<td><code>background</code></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><code>compressed</code></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><code>uncompressed</code></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
</tbody>
</table>
location  (Optional) Specifies a node.

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

all  (Optional) Specifies all locations.

rack  (Optional) Displays the list of racks.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Tip**

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

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

**Note**

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
</tbody>
</table>

**Examples**

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

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

-------------------------------------------------------------------------------
Cisco IOS XR Advanced System Command Reference for the Cisco CRS Router, Release 4.2.x
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>
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
  encapsulation dot1q 29

interface Bundle-Ether28.2
  description <removed>
  ipv4 address 10.0.0.14 255.0.0.0
  encapsulation dot1q 30

interface Bundle-Ether28.3
  description <removed>
  ipv4 address 10.0.0.14 255.0.0.0
  encapsulation dot1q 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.

```plaintext
show tech-support services diversion \{terminal [page] file send-to [background] [compressed] uncompressed\} \{location node-id all\}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>diversion</td>
<td>Collects information about packet diversion.</td>
</tr>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
</tbody>
</table>
uncompressed (Optional) Displays the command output with no compression.

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

all (Optional) Specifies all locations.

**Command Modes**

EXEC

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

**Tip**

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

Use the `show tech-support services` command to run show commands that display information specific to the services diversion infrastructure, which is used with the service blade offerings for the Cisco IOS XR platforms. This command generates tech-support information that relates to services debugging information that can be useful for Cisco Technical Support representatives when troubleshooting a router.

**Note**

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support snmp

To automatically run show commands that display information specific to tech-support information related to Simple Network Management Protocol (SNMP) agent, use the show tech-support snmp command in EXEC mode.

Syntax Description

show tech-support snmp [entitymib] [ifmib] [rack] [location node-id all] file send-to

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>entitymib</td>
<td>(Optional) Displays the entitymib debugging information.</td>
</tr>
<tr>
<td>ifmib</td>
<td>(Optional) Displays the ifmib debugging information.</td>
</tr>
<tr>
<td>rack</td>
<td>(Optional) Displays the list of racks.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>send-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• compactflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• flash: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• slot0: filename</td>
</tr>
<tr>
<td></td>
<td>• slot1: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>location</td>
<td>(Optional) Specifies a node. The node-id argument is entered in the rack/slot/module notation.</td>
</tr>
<tr>
<td>node-id</td>
<td></td>
</tr>
</tbody>
</table>
show tech-support snmp

all (Optional) Specifies all locations.

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the `copy` command to copy the .tgz file to a server or local machine. For example, `copy harddisk:/showtech/name.tgz tftp://server_path`.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

Tip

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

Note

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

See the Cisco IOS XR Software command references for information about these commands and descriptions of their command output. The Cisco IOS XR Software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>basic-services</td>
<td>read</td>
</tr>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support spaipc

To automatically run `show` commands that display information specific to SPA Inter Process Communication (SPAIPC) debugging, use the `show tech-support spaipc` command in EXEC mode.

```
show tech-support spaipc {terminal [page] file send-to [background] [compressed|uncompressed]} [interface type interface-path-id] [show-only] [trace-only] [location node-id| all]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>file</strong></td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td><strong>sent-to</strong></td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• <code>filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>bootflash: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk0a: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>disk1a: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>ftp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddisk: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiska: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>harddiskb: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>nvram: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>rcp: filename</code></td>
</tr>
<tr>
<td></td>
<td>• <code>tftp: filename</code></td>
</tr>
<tr>
<td><strong>background</strong></td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td><strong>compressed</strong></td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td><strong>uncompressed</strong></td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td><strong>interface</strong></td>
<td>(Optional) Collects information about a specific interface.</td>
</tr>
<tr>
<td><strong>type</strong></td>
<td>Interface type. For more information, use the question mark (?) online help function.</td>
</tr>
</tbody>
</table>
show tech-support spaipc

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.

<table>
<thead>
<tr>
<th><strong>interface-path-id</strong></th>
<th>Physical interface or virtual interface.</th>
</tr>
</thead>
</table>

**show-only** (Optional) Collects only show command information.

**terminal** Displays the command output on the terminal.

**trace-only** (Optional) Collects only trace information.

**location** (Optional) Specifies a node.

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

**all** (Optional) Specifies all locations.

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

Press the **Ctrl-C** keys to stop the command output.

<table>
<thead>
<tr>
<th><strong>Command Modes</strong></th>
<th>EXEC</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Command History</strong></th>
<th><strong>Release</strong></th>
<th><strong>Modification</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Usage Guideline</strong></th>
<th><strong>Tip</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>This command can generate a very large amount of output. You may want to redirect the output to a file using the <strong>file send-to</strong> keyword and argument. Redirecting the output to a file also makes sending the output to your Cisco Technical Support representative easier.</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th><strong>Usage Guideline</strong></th>
<th><strong>Note</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>This command is not required during normal use of the router.</td>
<td></td>
</tr>
</tbody>
</table>
See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>

### Examples

The following example shows how to run the `show tech-support spaipc` command:

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

show tech-support spaipc

terminal page
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_rme 172.29.52.177
domain ipv4 host ce29_rme 172.29.52.179
domain lookup disable
username P2_CRS-8
  password 7'I3061E010803
  
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
collection-plane
management-plane
inband
    interface all
    allow all

ipv4 virtual address 172.29.52.72 255.255.255.0
hw-module service sbc location 0/4/CPU0
hw-module service sbc location 0/4/CPU1
interface Bundle-Ether28
description Connected to P2_CRS-8 Bundle-Ether 28
ipv4 address 10.12.28.1 255.255.255.0
bundle minimum-active links 1
bundle minimum-active bandwidth 1000000

interface Bundle-Ether28.1
description Connected to P2_CRS-8 Bundle-Ether 28.1
ipv4 address 10.12.29.1 255.255.255.0
encapsulation dot1q 29

interface Bundle-Ether28.2
description Connected to P2_CRS-8 Bundle-Ether 28.2
ipv4 address 10.12.30.1 255.255.255.0
encapsulation dot1q 30

interface Bundle-Ether28.3
description Connected to P2_CRS-8 Bundle-Ether 28.3
ipv4 address 10.12.31.1 255.255.255.0
encapsulation dot1q 31

interface Bundle-POS24
description Connected to P2_CRS-8 Bundle-POS 24
ipv4 address 10.12.24.1 255.255.255.0
bundle minimum-active links 1
bundle minimum-active bandwidth 2488320

interface Loopback0
ipv4 address 10.1.1.1 255.255.255.255

interface MgmtEth0/4/CPU0/0
description Connected to Lab LAN
ipv4 address 172.29.52.46 255.255.255.0

interface MgmtEth0/4/CPU1/0
description Connected to Lab LAN
ipv4 address 172.29.52.47 255.255.255.0

interface MgmtEth0/RP0/CPU0/0
description Connected to Lab LAN
ipv4 address 172.29.52.70 255.255.255.0

interface GigabitEthernet0/1/5/0
description Connected to P2_CRS-8 GE 0/1/5/0
ipv4 address 10.12.16.1 255.255.255.0

interface GigabitEthernet0/1/5/1
description Connected to P4_C12810 GE 5/2
ipv4 address 10.14.8.1 255.255.255.0
interface GigabitEthernet0/1/5/2
  description Connected to PE6_C12406 GE 0/4/0/1
  ipv4 address 10.16.4.1 255.255.255.0
!
interface GigabitEthernet0/1/5/3
  shutdown
!
interface GigabitEthernet0/1/5/4
  shutdown
!
interface GigabitEthernet0/1/5/5
show tech-support sysdb

To automatically run `show` commands that display information specific to the System Database (SysDB), use the `show tech-support sysdb` command in EXEC mode.

```
show tech-support sysdb {terminal [page] file send-to [background] [compressed|uncompressed]} [shared-plane| rack] [location node-id]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>terminal</td>
<td>Displays the command output on the terminal.</td>
</tr>
<tr>
<td>page</td>
<td>(Optional) Displays the command output on a single page at a time. Use the</td>
</tr>
<tr>
<td></td>
<td>Return key to display the next line of output or use the space bar to display the</td>
</tr>
<tr>
<td></td>
<td>next page of information. If not used, the output scrolls (that is, it does not stop</td>
</tr>
<tr>
<td></td>
<td>for page breaks).</td>
</tr>
<tr>
<td></td>
<td>Press the Ctrl-C keys to stop the command output.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies that the command output is saved to a specified file.</td>
</tr>
<tr>
<td>sent-to</td>
<td>Name of the file. The following valid options are listed:</td>
</tr>
<tr>
<td></td>
<td>• filename</td>
</tr>
<tr>
<td></td>
<td>• bootflash: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0: filename</td>
</tr>
<tr>
<td></td>
<td>• disk0a: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1: filename</td>
</tr>
<tr>
<td></td>
<td>• disk1a: filename</td>
</tr>
<tr>
<td></td>
<td>• ftp: filename</td>
</tr>
<tr>
<td></td>
<td>• harddisk: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiska: filename</td>
</tr>
<tr>
<td></td>
<td>• harddiskb: filename</td>
</tr>
<tr>
<td></td>
<td>• nvram: filename</td>
</tr>
<tr>
<td></td>
<td>• rcp: filename</td>
</tr>
<tr>
<td></td>
<td>• tftp: filename</td>
</tr>
<tr>
<td>background</td>
<td>(Optional) Specifies that the command runs in the background.</td>
</tr>
<tr>
<td>compressed</td>
<td>(Optional) Displays compressed command output.</td>
</tr>
<tr>
<td>uncompressed</td>
<td>(Optional) Displays the command output with no compression.</td>
</tr>
<tr>
<td>shared-plane</td>
<td>(Optional) Displays the data for the shared plane.</td>
</tr>
</tbody>
</table>
show tech-support sysdb

rack (Optional) Displays the list of racks.

location (Optional) Specifies a node.

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

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

This command generates tech-support information that is useful for Cisco Technical Support representatives when troubleshooting a router. By default, the output of this command is saved on the router's hard disk in a file with .tgz extension. You can share this file with Cisco Technical Support. To share, use the copy command to copy the .tgz file to a server or local machine. For example, copy harddisk:/showtech/name.tgz tftp://server_path.

For Cisco Technical Support contact information, see the 'Obtaining Documentation and Submitting a Service Request' section in the Preface.

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

Note
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.

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL: http://www.cisco.com/en/US/products/ps5845/prod_command_reference_list.html

Task ID

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>cisco-support</td>
<td>read</td>
</tr>
</tbody>
</table>
show tech-support terminal

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

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

Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>location</td>
<td>(Optional) Specifies a node.</td>
</tr>
<tr>
<td>node-id</td>
<td>(Optional). Node ID. The node-id argument is entered in the rack/slot/module notation.</td>
</tr>
<tr>
<td>all</td>
<td>(Optional) Specifies all locations.</td>
</tr>
<tr>
<td>page</td>
<td>(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.</td>
</tr>
</tbody>
</table>

Command Modes

EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

Usage Guidelines

Tip

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

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

Note

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

See the Cisco IOS XR software command references for information about these commands and descriptions of their command output. The Cisco IOS XR software command references are located at the following URL:
The following example shows some of the `show tech-support terminal` command output:

```plaintext
RP/0/RP0/CPU0:router# show tech-support terminal page
-------------------------------------------------------------------------------
show tech-support
-------------------------------------------------------------------------------
---------------------- show running-config (no password) ----------------------
Building configuration...
!! Last configuration change at Wed Oct 10 20:05:13 2007
! hostname P1_CRS-8
line console
  exec-timeout 600 0
  session-timeout 600
!
line default
  exec-timeout 600 0
  session-timeout 600
!
clock timezone PST 8
clock summer-time DST recurring 2 sunday march 02:00 first sunday november 02:00
logging console informational
telnet vrf default ipv4 server max-servers no-limit
domain ipv4 host p1 172.29.52.72
domain ipv4 host p2 172.29.52.77
domain ipv4 host ce6 172.29.52.73
domain ipv4 host ce8 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 ? <removed>
!
aps group 1
  revert 1
    channel 0 local SONETO/1/4/3
    channel 1 local SONETO/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>
show tech-support terminal

ppp authentication chap pap
ppp chap password encrypted <removed>
interface POS0/1/4/3