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debug qbm

To display debugging output for quality of service (QoS) bandwidth manager (QBM) options, use the **debug qbm** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qbm {**api** | **events**}
no debug qbm {**api** | **events**}

Syntax Description

api	Displays information about QBM client requests and notifications. See the "Usage Guidelines" section for additional information.
events	Displays information about QBM pool events.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(33)SRC	This command was introduced.
Cisco IOS XE Release 2.6	This command was integrated into Cisco IOS XE Release 2.6.

Usage Guidelines

Use the **debug qbm** command to troubleshoot QBM behavior.

Examples of client requests are when a client creates or destroys a bandwidth pool and when a client attempts to admit bandwidth into a pool. An example of a notification is when a client's previously admitted bandwidth gets preempted from a pool.

Examples

The following example shows how to enable the **debug qbm api**command:

```
Router# debug qbm api
QBM client requests and notifications debugging is on
```

The following example show how to enable the **debug qbm events**command:

```
Router# debug qbm events
QBM pool events debugging is on
```

The following example shows how to verify that QBM debugging is enabled:

```
Router# show debug
QoS Bandwidth Manager:
  QBM client requests and notifications debugging is on
  QBM pool events debugging is on
```

Related Commands

Command	Description
show qbm client	Displays registered QBM clients.
show qbm pool	Displays allocated QBM pools and associated objects.

debug qos dsmib error

To display Quality of Service (QoS) DiffServ MIB errors, use the **debug qos dsmib error** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qos dsmib error

no debug qos dsmib error

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
15.3(1)T	This command was introduced.
XE 3.8S	This command was modified. Support was added for the ASR 1000 Series Routers.

Usage Guidelines

To enable DiffServ MIB support for Qo) policy maps, you use the **qos diffservmib** command. For complete debug information on QoS DiffServ MIB related errors and events, you can enable additional debugging messages using the **debug qos dsmib event** and the **debug qos dsmib stats** commands.

Examples

```
Device# debug qos dsmib error
QoS dsmib error debugging is on
```

Related Commands

Command	Description
debug qos dsmib event	Enables debugging of QoS DiffServ MIB events.
debug qos dsmib stats	Displays QoS DiffServ MIB Statistics.
qos diffservmib	Enables DiffServ MIB support for QoS policy maps.

debug qos dsmib event

To enable debugging of Quality of Service (QoS) DiffServ MIB events, use the **debug qos dsmib event** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

no debug qos dsmib event
debug qos dsmib event

Syntax Description

This command has no arguments or keywords

Command Modes

Privileged EXEC

Command History

Release	Modification
15.3(1)T	This command was introduced.
XE 3.8S	This command was modified. Support was added for the ASR 1000 Series Routers.

Usage Guidelines

To enable DiffServ MIB support for Qo) policy maps, you use the **qos diffservmib** command. For complete debug information on QoS DiffServ MIB related errors and events, you can enable additional debugging messages using the **debug qos dsmib error** and the **debug qos dsmib stats** commands.

Examples

```
Device# debug qos dsmib event
QoS dsmib event debugging is on
```

Related Commands

Command	Description
debug qos dsmib error	Displays QoS DiffServ MIB errors.
debug qos dsmib stats	Displays QoS DiffServ MIB Statistics.
qos diffservmib	Enables DiffServ MIB support for QoS policy maps.

debug qos dsmib stats

To display Quality of Service (QoS) DiffServ MIB statistics, use the **debug qos dsmib error** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qos dsmib stats

no debug qos dsmib stats

Syntax Description

This command has no arguments or keywords

Command Modes

Privileged EXEC

Command History

Release	Modification
15.3(1)T	This command was introduced.
XE 3.8S	This command was modified. Support was added for the ASR 1000 Series Routers.

Usage Guidelines

To enable DiffServ MIB support for Qo) policy maps, you use the **qos diffservmib** command. For complete debug information on QoS DiffServ MIB related errors and events, you can enable additional debugging messages using the **debug qos dsmib error** and the **debug qos dsmib events** commands.

Examples

```
Device# debug qos dsmib stats
QoS dsmib stats debugging is on
```

Related Commands

Command	Description
debug qos dsmib errors	Displays QoS DiffServ MIB errors.
debug qos dsmib event	Enables debugging of QoS DiffServ MIB events.
qos diffservmib	Enables DiffServ MIB support for QoS policy maps.

debug qllc error

To display quality link line control (QLLC) errors, use the **debug qllc error** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qllc error
no debug qllc error

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Usage Guidelines

This command helps you track down errors in the QLLC interactions with X.25 networks. Use the **debug qllc error** command in conjunction with the **debug x25 all** command to see the connection. The data shown by this command only flows through the router on the X.25 connection. Some forms of this command can generate a substantial amount of output and network traffic.

Examples

The following is sample output from the **debug qllc error** command:

```
Router# debug qllc error

%QLLC-3-GENERRMSG: qllc_close - bad qllc pointer Caller 00407116 Caller 00400BD2
QLLC 4000.1111.0002: NO X.25 connection. Discarding XID and calling out
```

The following line indicates that the QLLC connection was closed:

```
%QLLC-3-GENERRMSG: qllc_close - bad qllc pointer Caller 00407116 Caller 00400BD2
```

The following line shows the virtual MAC address of the failed connection:

```
QLLC 4000.1111.0002: NO X.25 connection. Discarding XID and calling out
```

debug qllc event

To enable debugging of quality link line control (QLLC) events, use the **debug qllc event**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qllc event
no debug qllc event

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Usage Guidelines

Use the **debug qllc event** command to display primitives that might affect the state of a QLLC connection. An example of these events is the allocation of a QLLC structure for a logical channel indicator when an X.25 call has been accepted with the QLLC call user data. Other examples are the receipt and transmission of LAN explorer and exchange identification (XID) frames.

Examples

The following is sample output from the **debug qllc event** command:

```
Router# debug qllc event
QLLC: allocating new qllc lci 9
QLLC: tx POLLING TEST, da 4001.3745.1088, sa 4000.1111.0001
QLLC: rx explorer response, da 4000.1111.0001, sa c001.3745.1088, rif 08B0.1A91.1901.A040
QLLC: gen NULL XID, da c001.3745.1088, sa 4000.1111.0001, rif 0830.1A91.1901.A040, dsap 4,
 ssap 4
QLLC: rx XID response, da 4000.1111.0001, sa c001.3745.1088, rif 08B0.1A91.1901.A040
```

The following line indicates that a new QLLC data structure has been allocated:

```
QLLC: allocating new qllc lci 9
```

The following lines show transmission and receipt of LAN explorer or test frames:

```
QLLC: tx POLLING TEST, da 4001.3745.1088, sa 4000.1111.0001
QLLC: rx explorer response, da 4000.1111.0001, sa c001.3745.1088, rif 08B0.1A91.1901.A040
```

The following lines show XID events:

```
QLLC: gen NULL XID, da c001.3745.1088, sa 4000.1111.0001, rif 0830.1A91.1901.A040, dsap 4,
 ssap 4
QLLC: rx XID response, da 4000.1111.0001, sa c001.3745.1088, rif 08B0.1A91.1901.A040
```

debug qllc packet

To display quality link line control (QLLC) events and QLLC data packets, use the **debug qllc packet** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qllc packet
no debug qllc packet

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Usage Guidelines

This command helps you to track down errors in the QLLC interactions with X.25 networks. The data shown by this command only flows through the router on the X25 connection. Use the **debug qllc packet** command in conjunction with the **debug x25 all**command to see the connection and the data that flows through the router.

Examples

The following is sample output from the **debug qllc packet** command:

```
Router# debug qllc packet

14:38:05: Serial2/5 QLLC I: Data Packet.-RSP    9 bytes.
14:38:07: Serial2/6 QLLC I: Data Packet.-RSP 112 bytes.
14:38:07: Serial2/6 QLLC O: Data Packet. 128 bytes.
14:38:08: Serial2/6 QLLC I: Data Packet.-RSP    9 bytes.
14:38:08: Serial2/6 QLLC I: Data Packet.-RSP 112 bytes.
14:38:08: Serial2/6 QLLC O: Data Packet. 128 bytes.
14:38:08: Serial2/6 QLLC I: Data Packet.-RSP    9 bytes.
14:38:12: Serial2/5 QLLC I: Data Packet.-RSP 112 bytes.
14:38:12: Serial2/5 QLLC O: Data Packet. 128 bytes.
```

The following lines indicate that a packet was received on the interfaces:

```
14:38:05: Serial2/5 QLLC I: Data Packet.-RSP    9 bytes.
14:38:07: Serial2/6 QLLC I: Data Packet.-RSP 112 bytes.
```

The following lines show that a packet was sent on the interfaces:

```
14:38:07: Serial2/6 QLLC O: Data Packet. 128 bytes.
14:38:12: Serial2/5 QLLC O: Data Packet. 128 bytes.
```

debug qllc state

To enable debugging of quality link line control (QLLC) events, use the **debug qllc state**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qllc state
no debug qllc state

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Usage Guidelines

Use the **debug qllc state** command to show when the state of a QLLC connection has changed. The typical QLLC connection goes from states ADM to SETUP to NORMAL. The NORMAL state indicates that a QLLC connection exists and is ready for data transfer.

Examples

The following is sample output from the **debug qllc state** command:

```
Router# debug qllc state
Serial2 QLLC O: QSM-CMD
Serial2: X25 O D1 DATA (5) Q 8 lci 9 PS 4 PR 3
QLLC: state ADM -> SETUP
Serial2: X25 I D1 RR (3) 8 lci 9 PR 5
Serial2: X25 I D1 DATA (5) Q 8 lci 9 PS 3 PR 5
Serial2 QLLC I: QUA-RSPQLLC: addr 00, ctl 73
QLLC: qsetupstate: recvd qua rsp
QLLC: state SETUP -> NORMAL
```

The following line indicates that a QLLC connection attempt is changing state from ADM to SETUP:

```
QLLC: state ADM -> SETUP
```

The following line indicates that a QLLC connection attempt is changing state from SETUP to NORMAL:

```
QLLC: state SETUP -> NORMAL
```

debug qllc timer

To display quality link line control (QLLC) timer events, use the **debug qllc timer** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qllc timer
no debug qllc timer

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Usage Guidelines

The QLLC process periodically cycles and checks status of itself and its partner. If the partner is not found in the desired state, an LAPB primitive command is re-sent until the partner is in the desired state or the timer expires.

Examples

The following is sample output from the **debug qllc timer** command:

```
Router# debug qllc timer

14:27:24: Qllc timer lci 257, state ADM retry count 0 Caller 00407116 Caller 00400BD2
14:27:34: Qllc timer lci 257, state NORMAL retry count 0
14:27:44: Qllc timer lci 257, state NORMAL retry count 1
14:27:54: Qllc timer lci 257, state NORMAL retry count 1
```

The following line of output shows the state of a QLLC partner on a given X.25 logical channel identifier:

```
14:27:24: Qllc timer lci 257, state ADM retry count 0 Caller 00407116 Caller 00400BD2
```

Other messages are informational and appear every ten seconds.

debug qllc x25

To display X.25 packets that affect a quality link line control (QLLC) connection, use the **debugqllcx25** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug qllc x25
no debug qllc x25

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Usage Guidelines

This command is helpful to track down errors in the QLLC interactions with X.25 networks. Use the **debugqllcx25** command in conjunction with the **debugx25events**or**debugx25all**commands to see the X.25 events between the router and its partner.

Examples

The following is sample output from the **debugqllcx25** command:

```
Router# debug qllc x25

15:07:23: QLLC X25 notify lci 257 event 1
15:07:23: QLLC X25 notify lci 257 event 5
15:07:34: QLLC X25 notify lci 257 event 3 Caller 00407116 Caller 00400BD2
15:07:35: QLLC X25 notify lci 257 event 4
```

The following table describes the significant fields shown in the display.

Table 1: debug qllc x25 Field Descriptions

Field	Description
15:07:23	Displays the time of day.
QLLC X25 notify 257	Indicates that this is a QLLC X25 message.
event <*n*>	Indicates the type of event, *n*. Values for *n*can be as follows: • 1--Circuit is cleared • 2--Circuit has been reset • 3--Circuit is connected • 4--Circuit congestion has cleared • 5--Circuit has been deleted

debug qos accounting

To enable debugging for Quality of Service (QoS) accounting, use the **debug qos accounting** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug qos accounting {**error** | **event** | **ha**}

no debug qos accounting {**error** | **event** | **ha**}

Syntax Description

error	Enables QoS accounting error debugging.
event	Enables QoS accounting event debugging.
ha	Enables QoS accounting high availability debugging.

Command Default

QoS accounting debugging is disabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.2S	This command was introduced.
Cisco IOS XE Release 3.5S	This command was modified. The **error**, **event**, and **ha** keywords were added.

Usage Guidelines

When QoS policy accounting is enabled on the router, you can use the **debug qos accounting** command to display debugging and troubleshooting information.

Examples

The following example shows how to enable QoS accounting error debugging:

```
Router# debug qos accounting error
QoS accounting error debugging is on
```

The following shows how to disable QoS accounting error debugging:

```
Router# no debug qos accounting error
QoS accounting error debugging is off
```

The following is sample output from the **debug qos accounting ha** command:

```
Router# debug qos accounting ha
*Nov 14 11:12:40.315: PAC CCM HA: [12] add handle: 42000001
*Nov 14 11:12:40.315: PAC CCM HA: found COA cluster handle: 3
*Nov 14 11:12:40.315: PAC CCM HA: [12] set dyn sess required: 42000001 3 1
*Nov 14 11:12:40.315: PAC CCM HA: found COA cluster handle: 3
*Nov 14 11:12:40.315: PAC CCM HA: [12] aaa create flow: 42000001 3 0
*Nov 14 11:12:40.315: PAC CCM HA: found COA cluster handle: 3
*Nov 14 11:12:40.315: PAC CCM HA: [12] dyn sess ready: 42000001 3 1
*Nov 14 11:12:40.315: PAC CCM HA: [12] session sets to periodic updates
*Nov 14 11:12:40.316: PAC CCM HA: [12] get dynsess sync info: items 1, length 58 NAS#
```

```
*Nov 14 11:12:40.316: PAC CCM HA: [12] add all dynsess sync data - max 58
*Nov 14 11:12:40.316: PAC CCM HA: Pulling latest statistics from c3pl beforesync
*Nov 14 11:12:40.316: PAC CCM HA: Collecting HA stats from 2 instances
*Nov 14 11:12:40.316: PAC CCM HA: Collecting HA stats dir input  bytes 0 packets 0
*Nov 14 11:12:40.316: PAC CCM HA: Collecting HA stats dir output  bytes 0 packets 0
*Nov 14 11:12:40.316: PAC CCM HA: xmit xform message type 1
*Nov 14 11:12:40.316: PAC CCM HA: [12] added 58 of dynsess sync CCM data, max 58
```

The following is sample output from the **debug qos accounting event** command:

```
Router# debug qos accounting event
*Nov 14 11:10:33.654: pac: Same group-list mapping is entered
*Nov 14 11:10:33.654: pac: Existing group-list mapping with turbo-service><_GRP default
*Nov 14 11:10:33.656: %SYS-5-CONFIG_I: Configured from console by tty64
*Nov 14 11:10:33.660: pac: event=CLASS_ADD if_info=2A99BC9DB0 cid=0 dir=0 AAA uid=12
*Nov 14 11:10:33.660: pac: Enabling accounting on a class cid: 0 global-parent: [-1 -1 -1
-1] dir: 0
*Nov 14 11:10:33.660: pac: Inserting session 12 into wavl tree
*Nov 14 11:10:33.660: pac: Creating context for group
*Nov 14 11:10:33.660: pac: Added first instance to AAA id: 0xC, group: turbo-service><_GRP
*Nov 14 11:10:33.660: pac: Setting coa_push_mode for context 0x2A99CED228
*Nov 14 11:10:33.660: pac: Updating initial stats dir input bytes 0 packets 0
*Nov 14 11:10:33.661: pac: Username inherited for AAA flow Id
*Nov 14 11:10:33.661: pac: Successfully allocated flow hdl 0x2A000001, id 1 for AAA id 0xC
*Nov 14 11:10:33.661: pac: CoA progressing, WAIT_FOR_COA_ACK, aaa_id 0xC
*Nov 14 11:10:33.662: pac: event=CLASS_ADD if_info=2A99BC9D28 cid=0 dir=1 AAA uid=12
*Nov 14 11:10:33.662: pac: Enabling accounting on a class cid: 0 global-parent: [-1 -1 -1
-1] dir: 1
*Nov 14 11:10:33.662: pac: Adding instance to AAA id: 0xC, group: turbo-service><_GRP
*Nov 14 11:10:33.662: pac: Setting coa_push_mode for context 0x2A99CED228
*Nov 14 11:10:33.662: pac: Updating initial stats dir output bytes 0 packets 0
*Nov 14 11:10:33.663: pac: Preparing to send service start 0xC 0x2A000001 NAS#
*Nov 14 11:10:33.663: pac: Adding session and service static attributes
*Nov 14 11:10:33.663: pac: Service name Nturbo-service() returned with group
turbo-service><_GRP
*Nov 14 11:10:33.663: pac: Configuration: template
*Nov 14 11:10:33.663: pac: Sending Start ...
*Nov 14 11:10:33.663: peruser_acct_callback: Transmitted group in WAIT_FOR_COA_ACK, context
 0x2A99CED228
```

Related Commands

Command	Description
debug qos ha	Enables debugging for QoS high availability information on the networking device.
debug radius	Enables debugging for RADIUS configuration.

debug qos ha

To debug quality of service (QoS) information on the networking device, use the **debug qos ha**command in privileged EXEC mode. To disable the display of debugging output, use the **no** form of this command.

debug qos ha [**detail**]
no debug qos ha [**detail**]

Syntax Description

detail	(Optional) Displays detailed debug messages related to specified QoS information.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(25)S	This command was introduced.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(33)SXH	This command was integrated into Cisco IOS Release 12.2(33)SXH.

Usage Guidelines

Use to determine that QoS in running properly on your networking device.

Examples

The following example enables QoS debugging:

```
Router# debug qos ha
```

debug radius

To enable debugging for Remote Authentication Dial-In User Service (RADIUS) configuration, use the **debug radius** command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug radius [{**accounting** | **authentication** | **brief** | **elog** | **failover** | **retransmit** | **verbose**}]
no debug radius [{**accounting** | **authentication** | **brief** | **elog** | **failover** | **retransmit** | **verbose**}]

Syntax Description

accounting	(Optional) Enables debugging of RADIUS accounting collection.
authentication	(Optional) Enables debugging of RADIUS authentication packets.
brief	(Optional) Displays abbreviated debug output.
elog	(Optional) Enables RADIUS event logging.
failover	(Optional) Enables debugging of packets sent upon failover.
retransmit	(Optional) Enables retransmission of packets.
verbose	(Optional) Displays detailed debug output.

Command Default

RADIUS event logging and debugging output in ASCII format are enabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
11.2(1)T	This command was introduced.
12.0(2)T	The **brief** keyword was added. The default output format became ASCII from hexadecimal.
12.2(11)T	The **verbose** keyword was added.
12.3(2)T	The **elog** keyword was added.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

RADIUS is a distributed security system that secures networks against unauthorized access. Cisco supports RADIUS under the authentication, authorization, and accounting (AAA) security system. When RADIUS is used on the router, you can use the **debug radius** command to display debugging and troubleshooting information in ASCII format. Use the **debug radius brief** command for abbreviated output displaying client/server interaction and minimum packet information. Only the input and output transactions are recorded. Use the **debug radius verbose** command to include non-essential RADIUS debugs.

Examples

The following is sample output from the **debug radius** command:

```
Router# debug radius
Radius protocol debugging is on
Radius packet hex dump debugging is off
Router# show debug
00:19:20: RADIUS/ENCODE(00000015):Orig. component type = AUTH_PROXY
00:19:20: RADIUS(00000015): Config NAS IP: 0.0.0.0
00:19:20: RADIUS/ENCODE(00000015): acct_session_id: 21
00:19:20: RADIUS(00000015): sending
00:19:20: RADIUS/ENCODE: Best Local IP-Address 33.0.0.2 for Radius-Server 33.2.0.1
00:19:20: RADIUS(00000015): Send Access-Request to 33.2.0.1:1645 id 1645/21, len 159
00:19:20: RADIUS:  authenticator 2D 03 E5 A6 A5 30 1A 32 - F2 C5 EE E2 AC 5E 5D 22
00:19:20: RADIUS:  User-Name           [1]   11  "authproxy"
00:19:20: RADIUS:  User-Password       [2]   18  *
00:19:20: RADIUS:  Service-Type        [6]   6   Outbound                  [5]
00:19:20: RADIUS:  Message-Authenticato[80]  18
00:19:20: RADIUS:   85 EF E8 43 03 88 58 63 78 D2 7B E7 26 61 D3 3C          [ CXcx{&a<]
00:19:20: RADIUS:  Vendor, Cisco       [26]  49
00:19:20: RADIUS:   Cisco AVpair      [1]   43  "audit-session-id=0D00000200000013001112FD"
00:19:20: RADIUS:  NAS-Port-Type       [61]  6   Ethernet                  [15]
00:19:20: RADIUS:  NAS-Port            [5]   6   16480
00:19:20: RADIUS:  NAS-Port-Id         [87]  19  "FastEthernet1/0/3"
00:19:20: RADIUS:  NAS-IP-Address      [4]   6   33.0.0.2
00:19:20: RADIUS(00000015): Started 5 sec timeout
00:19:20: RADIUS: Received from id 1645/21 33.2.0.1:1645, Access-Accept, len 313
00:19:20: RADIUS:  authenticator E6 6E 1D 64 5A 15 FD AE - C9 60 C0 68 F5 10 E9 B7
00:19:20: RADIUS:  Filter-Id           [11]  8
00:19:20: RADIUS:   31 30 30 2E 69 6E           [ 100.in]
00:19:20: RADIUS:  Vendor, Cisco       [26]  19
00:19:20: RADIUS:   Cisco AVpair       [1]   13  "priv-lvl=15"
00:19:20: RADIUS:  Termination-Action  [29]  6   1
00:19:20: RADIUS:  Vendor, Cisco       [26]  45
00:19:20: RADIUS:   Cisco AVpair       [1]   39  "supplicant-name=Port-description test"
00:19:20: RADIUS:  Vendor, Cisco       [26]  38
00:19:20: RADIUS:   Cisco AVpair       [1]   32  "security-group-tag=2468-C0FFEE"
00:19:20: RADIUS:  Vendor, Cisco       [26]  33
00:19:20: RADIUS:   Cisco AVpair       [1]   27  "supplicant-group=engineer"
00:19:20: RADIUS:  Vendor, Cisco       [26]  36
00:19:20: RADIUS:   Cisco AVpair       [1]   30  "supplicant-group=idf_testing"
00:19:20: RADIUS:  Vendor, Cisco       [26]  28
00:19:20: RADIUS:   Cisco AVpair       [1]   22  "authz-directive=open"
00:19:20: RADIUS:  Vendor, Cisco       [26]  32
00:19:20: RADIUS:   Cisco AVpair       [1]   26  "supplicant-group=group-9"
00:19:20: RADIUS:  Class               [25]  30
00:19:20: RADIUS:   43 41 43 53 3A 63 2F 61 37 31 38 38 61 2F 32 31  [CACS:c/a7188a/21]
00:19:20: RADIUS:   30 30 30 30 30 32 2F 31 36 34 38 30      [ 000002/16480]
00:19:20: RADIUS:  Message-Authenticato[80]  18
00:19:20: RADIUS:   24 13 29 95 A1 5E 9F D3 CB ED 78 F1 F6 62 2B E3            [ $)^xb+]
00:19:20: RADIUS(00000015): Received from id 1645/21
00:19:20: RADIUS/DECODE: parse unknown cisco vsa "supplicant-group" - IGNORE
00:19:20: RADIUS/DECODE: parse unknown cisco vsa "supplicant-group" - IGNORE
00:19:20: RADIUS/DECODE: parse unknown cisco vsa "authz-directive" - IGNORE
00:19:20: RADIUS/DECODE: parse unknown cisco vsa "supplicant-group" - IGNORE
00:19:20: RADIUS/ENCODE(00000015):Orig. component type = AUTH_PROXY
00:19:20: RADIUS(00000015): Config NAS IP: 0.0.0.0
00:19:20: RADIUS(00000015): sending
00:19:20: RADIUS/ENCODE: Best Local IP-Address 33.0.0.2 for Radius-Server 33.2.0.1
00:19:20: RADIUS(00000015): Send Accounting-Request to 33.2.0.1:1646 id 1646/1, len 204
00:19:20: RADIUS:  authenticator A7 6B A0 94 F4 63 30 51 - 8A CE 8C F4 8A 8E 0B CC
00:19:20: RADIUS:  Acct-Session-Id     [44]  10  "00000015"
00:19:20: RADIUS:  Calling-Station-Id  [31]  10  "13.1.0.1"
00:19:20: RADIUS:  Vendor, Cisco       [26]  49
00:19:20: RADIUS:   Cisco AVpair      [1]   43  "audit-session-id=0D00000200000013001112FD"
```

The following is sample output from the **debug radius brief** command:

```
Router# debug radius brief
Radius protocol debugging is on
Radius packet hex dump debugging is off
Radius protocol in brief format debugging is on
00:05:21: RADIUS: Initial Transmit ISDN 0:D:23 id 6 10.0.0.1:1824, Accounting-Request, len
 358
00:05:21: %ISDN-6-CONNECT: Interface Serial0:22 is now connected to 4085274206
00:05:26: RADIUS: Retransmit id 6
00:05:31: RADIUS: Tried all servers.
00:05:31: RADIUS: No valid server found. Trying any viable server
00:05:31: RADIUS: Tried all servers.
00:05:31: RADIUS: No response for id 7
00:05:31: RADIUS: Initial Transmit ISDN 0:D:23 id 8 10.0.0.0:1823, Access-Request, len 171
00:05:36: RADIUS: Retransmit id 8
00:05:36: RADIUS: Received from id 8 1.7.157.1:1823, Access-Accept, len 115
00:05:47: %ISDN-6-DISCONNECT: Interface Serial0:22 disconnected from 4085274206, call lasted
 26 seconds
00:05:47: RADIUS: Initial Transmit ISDN 0:D:23 id 9 10.0.0.1:1824, Accounting-Request, len
 775
00:05:47: RADIUS: Received from id 9 1.7.157.1:1824, Accounting-response, len 20
```

The following example shows how to enable debugging of RADIUS accounting collection:

```
Router# debug radius accounting
Radius protocol debugging is on
Radius protocol brief debugging is off
Radius protocol verbose debugging is off
Radius packet hex dump debugging is off
Radius packet protocol (authentication) debugging is off
Radius packet protocol (accounting) debugging is on
Radius packet retransmission debugging is off
Radius server fail-over debugging is off
Radius elog debugging is off
```

Related Commands

Command	Description
debug aaa accounting	Displays information on accountable events as they occur.
debug aaa authentication	Displays information on AAA/TACACS+ authentication.

debug radius local-server

To control the display of debug messages for the local authentication server, use the **debug radius local-server**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug radius local-server {**client** | **error** | **packets**}
no debug radius local-server {**client** | **error** | **packets**}

Syntax Description

client	Displays error messages about failed client authentications.
error	Displays error messages about the local authentication server.
packets	Displays the content of the RADIUS packets that are sent and received.

Command Default

No default behavior or values

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.2(11)JA	This command was introduced on Cisco Aironet Access Point 1200 and Cisco Aironet Access Point 1100.
12.3(11)T	This command was implemented on the following platforms: Cisco 2600XM, Cisco 2691, Cisco 2811, Cisco 2821, Cisco 2851, Cisco 3700, and Cisco 3800 series routers.
12.4(2)T	This command was integrated into Cisco IOS Release 12.4(2)T.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

Use this command to control the display of debug messages for the local authentication server.

Examples

The following command shows how to display messages regarding failed client authentication:

```
Router# debug radius local-server
 client
```

Related Commands

Command	Description
clear radius local-server	Clears the statistics display or unblocks a user.
show radius local-server statistics	Displays statistics for a local network access server.
ssid	Specifies up to 20 SSIDs to be used by a user group.
user	Authorizes a user to authenticate using the local authentication server.

Command	Description
vlan	Specifies a VLAN to be used by members of a user group.

debug radius-proxy

To display debugging messages for Intelligent Services Gateway (ISG) RADIUS proxy functionality, use the **debug radius-proxy**command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug radius-proxy {**events** | **errors**}
no debug radius-proxy {**events** | **errors**}

Syntax Description

events	Displays debug messages related to ISG RADIUS proxy events.
errors	Displays debug messages related to ISG RADIUS proxy errors.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(31)SB2	This command was introduced.

Usage Guidelines

See the following caution before using **debug** commands.

Caution Because debugging output is assigned high priority in the CPU process, it can render the system unusable. For this reason, only use **debug** commands to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support staff. Moreover, it is best to use debug commands during periods of lower network flows and fewer users.

Examples

The following example shows output for the **debug radius-proxy** command with the **events** keyword:

```
Router# debug radius-proxy events
*Nov  7 07:53:11.411: RP-EVENT: Parse Request: Username = 12345679@cisco
*Nov  7 07:53:11.411: RP-EVENT: Parse Request: Caller ID = 12345679@cisco
*Nov  7 07:53:11.411: RP-EVENT: Parse Request: NAS id = localhost
*Nov  7 07:53:11.411: RP-EVENT: Found matching context for user Caller ID:12345679@cisco
Name:aa
*Nov  7 07:53:11.411: RP-EVENT: Received event client Access-Request in state activated
*Nov  7 07:53:11.411: RP-EVENT: User Caller ID:12345679@cisco  Name:12 re-authenticating
*Nov  7 07:53:11.411: RP-EVENT: Forwarding Request to method list (handle=1979711512)
*Nov  7 07:53:11.411: RP-EVENT: Sending request to server group EAP
*Nov  7 07:53:11.411: RP-EVENT: State changed activated --> wait for Access-Response
```

debug rai

To enable debugging for Resource Allocation Indication (RAI), use the **debug rai** command in privileged EXEC mode. To disable debugging for RAI, use the **no** form of this command.

debug rai
no debug rai

Syntax Description

This command has no arguments or keywords.

Command Default

Debugging is disabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
15.1(2)T	This command was introduced.

Usage Guidelines

You can use the **debug rai** command along with the **debug ccsip all** command to get the complete debugging information for RAI.

Examples

The following example shows how to enable resource allocation debugging:

```
Router# debug rai
Resource Availability debugging is on
*Dec 16 05:50:34.863: //1/rai_new_resource_index:New index created 1
*Dec 16 05:50:34.863: //1/rai_main:- event code:7
*Dec 16 05:50:34.863: //1/rai_process_new_rsc_group:New Resource Index created
*Dec 16 05:50:34.907: //1/rai_set_resource_info_config:Resource type 0
*Dec 16 05:50:34.907: //1/rai_set_resource_info_config:New system resource created 0x4961A38C
*Dec 16 05:50:34.907: //1/rai_set_resource_info_config:Resource New Config Event passed
*Dec 16 05:50:34.907: //1/rai_set_resource_info_config:Resource Type CPU Subtype 1-min-avg
 Low watermark 30High watermark 50
*Dec 16 05:50:34.907: //1/rai_main:- event code:4
```

Related Commands

Command	Description
periodic-report interval	Configures periodic reporting parameters for gateway resource entities.
rai target	Configures the SIP RAI mechanism.
resource (voice)	Configures parameters for monitoring resources, use the resource command in voice-class configuration mode.
show voice class resource-group	Displays the resource group configuration information for a specific resource group or all resource groups.
voice class resource-group	Enters voice-class configuration mode and assigns an identification tag number for a resource group.

debug ras

To display the types and addressing of Registration, Admission and Status (RAS) messages sent and received, use the **debug ras** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug ras
no debug ras

Syntax Description

This command has arguments or keywords.

Command Default

This command is disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3(6)NA2	This command was introduced.
12.2(2)XB1	This command was implemented on the Cisco AS5850 universal access router.
12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.

Usage Guidelines

Use the **debug ras** command to display the types and addressing of RAS messages sent and received. The debug output lists the message type using mnemonics defined in International Telecommunications Union-Telecommunication (ITU-T) specification H.225.

Examples

In the following output, gateway GW13.cisco.com sends a RAS registration request (RRQ) message to gatekeeper GK15.cisco.com at IP address 10.9.53.15. GW13.cisco.com then receives a registration confirmation (RCF) message from the gatekeeper. If there is no response, it could mean that the gatekeeper is offline or improperly addressed. If you receive a reject (RRJ) message, it could mean that the gatekeeper is unable to handle another gateway or that the registration information is incorrect.

```
Router# debug ras

*Mar 13 19:53:34.231:      RASlib::ras_sendto:msg length 105 from
                            10.9.53.13:8658 to 10.9.53.15:1719
*Mar 13 19:53:34.231:      RASLib::RASSendRRQ:RRQ (seq# 36939) sent
                            to 10.9.53.15
*Mar 13 19:53:34.247:      RASLib::RASRecvData:successfully rcvd
                            message of length 105 from 10.9.53.15:1719
*Mar 13 19:53:34.251:      RASLib::RASRecvData:RCF (seq# 36939) rcvd
                            from [10.9.53.15:1719] on sock [0x6168356C]
```

debug redundancy application group asymmetric-routing

To log debug information for an asymmetric routing redundancy application group, use the **debug redundancy application group asymmetric-routing** command in privileged EXEC mode. To disable the debug log, use the **no** form of this command.

debug redundancy application group asymmetric-routing [{**error** | **peer** | **tunnel**}]
no debug redundancy application group asymmetric-routing [{**error** | **peer** | **tunnel**}]

Syntax Description

error	(Optional) Specifies the asymmetric routing redundancy group errors.
peer	(Optional) Specifies the asymmetric routing redundancy group peer events.
tunnel	(Optional) Specifies the asymmetric routing redundancy tunnel events.

Command Default

Debugging of asymmetric routing redundancy group is not enabled.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
15.2(3)T	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group asymmetric-routing peer** command:

```
On standby :
*Mar  6 20:57:25.996: RG-AR-PEER: RG AR:group 1 start negotiation timer
*Mar  6 20:57:26.006: RG-AR-PEER: RG AR:group 1 stop negotiation timer
*Mar  6 20:57:26.006: RG-AR-PEER: RG AR:group 1 transport negotiated

On Active:
*Mar  6 20:57:26.006: RG-AR-PEER: RG AR:group 1 stop negotiation timer
*Mar  6 20:57:26.006: RG-AR-PEER: RG AR:group 1 transport negotiated
```

The following is sample output from the **debug redundancy application group asymmetric-routing tunnel** command:

```
On standby:
*Mar  6 20:52:25.886: RG-AR-TUNNEL: encap packet(len 114) for redirection, orig pak encsize
 14
*Mar  6 20:52:25.886: RG-AR-TUNNEL: packet(len 132) redirected successfully for feature (1)
 from rii (1000) group (1)

On Active:
Case 1: CEF enabled
*Mar  6 20:52:25.887: RG-AR-TUNNEL: packet(len 146) received in CEF path
*Mar  6 20:52:25.887: RG-AR-TUNNEL: packet received for group (1) rii (1000) forwarded using
 parent idb Ethernet1/3
Case 2: CEF disabled)
*Mar  6 20:54:45.449: RG-AR-TUNNEL: packet(len 100) received for group (1) rii (1000
Ethernet1/3) from standby received in process path
```

Related Commands

Command	Description
redundancy asymmetric-routing enable	Establishes an asymmetric flow diversion tunnel for each redundancy group.

debug redundancy application group config

To display the redundancy application group configuration, use the **debug redundancy application group config**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group config {**all** | **error** | **event** | **func**}
no debug redundancy application group config {**all** | **error** | **event** | **func**}

Syntax Description

all	Displays debug information about the configuration.
error	Displays information about the redundancy group's configuration errors.
event	Displays information about the redundancy group's configuration.
func	Displays information about the redundancy group's configuration functions entered.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group config all**command:

```
Router# debug redundancy application group config all

RG config all debugging is on
```

Related Commands

Command	Description
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy application group transport information.
debug redundancy application group vp	Displays the redundancy application group VP information.

debug redundancy application group faults

To display the redundancy application group faults, use the **debug redundancy application group faults**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group faults {**all** | **error** | **event** | **fault** | **func**}
no debug redundancy application group faults {**all** | **error** | **event** | **fault** | **func**}

Syntax Description

all	Displays fault information of a redundancy group.
error	Displays error information of a redundancy groups.
event	Displays event information of a redundancy group.
fault	Displays fault events information of a redundancy group.
func	Displays fault functions information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group faults error**command:

```
Router# debug redundancy application group faults error
RG Faults error debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy application group configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy group application group transport information.
debug redundancy application group vp	Displays the redundancy group application group VP information.

debug redundancy application group media

To display the redundancy application group media information, use the **debug redundancy application group media**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group media {**all** | **error** | **event** | **nbr** | **packet** {**rx** | **tx**} | **timer**}
no debug redundancy application group media {**all** | **error** | **event** | **nbr** | **packet** {**rx** | **tx**} | **timer**}

Syntax Description

all	Displays media information of a redundancy group.
error	Displays media error information of a redundancy group.
event	Displays media events information of a redundancy group.
nbr	Displays media neighbor (nbr) information of a redundancy group.
packet	Displays media packets information of a redundancy group.
rx	Displays the incoming packets information.
tx	Displays the outgoing packets information.
timer	Displays information about redundancy group media timer events.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group media timer**command:

```
Router# debug redundancy application group media timer
RG Media timer debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group protocol	Displays the redundancy group application group protocol information.
debug redundancy application group rii	Displays the redundancy group application group RII information.
debug redundancy application group transport	Displays the redundancy group application group transport information.

Command	Description
debug redundancy application group vp	Displays the redundancy application group VP information.

debug redundancy application group protocol

To display the redundancy application group protocol information, use the **debug redundancy application group protocol**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group protocol {**all** | **detail** | **error** | **event** | **media** | **peer**}
no debug redundancy application group protocol {**all** | **detail** | **error** | **event** | **media** | **peer**}

Syntax Description

all	Displays protocol information of a redundancy group.
detail	Displays event details of a redundancy group.
error	Displays protocol error information of a redundancy group.
event	Displays protocol events information of a redundancy group.
media	Displays protocol media events information of a redundancy group.
peer	Displays protocol peer information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group protocol peer**command:

```
Router# debug redundancy application group protocol peer

RG Protocol peer debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy application group transport information.

Command	Description
debug redundancy application group vp	Displays the redundancy application group VP information.

debug redundancy application group rii

To display the redundancy application group redundancy interface identifier (RII) information, use the **debug redundancy application group rii**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group rii {**error** | **event**}
no debug redundancy application group rii {**error** | **event**}

Syntax Description

error	Displays RII error information of a redundancy group.
event	Displays RII event information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group rii event**command:

```
Router# debug redundancy application group rii event

RG RII events debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy group application group protocol information.
debug redundancy application group vp	Displays the redundancy group application group VP information.

debug redundancy application group transport

To display the redundancy application group transport information, use the **debug redundancy application group transport**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group transport {**db** | **error** | **event** | **packet** | **timer** | **trace**}
no debug redundancy application group transport {**db** | **error** | **event** | **packet** | **timer** | **trace**}

Syntax Description

db	Displays transport information of a redundancy group.
error	Displays transport error information of a redundancy group.
event	Displays transport event information of a redundancy group.
packet	Displays transport packet information of a redundancy group.
timer	Displays transport timer information of a redundancy group.
trace	Displays transport trace information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group transport trace**command:

```
Router# debug redundancy application group transport trace
RG Transport trace debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.

debug redundancy application group vp

To display the redundancy application group virtual platform (VP) information, use the **debug redundancy application group vp**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group vp {**error** | **event**}
no debug redundancy application group vp {**error** | **event**}

Syntax Description

error	Displays VP error information of a redundancy group.
event	Displays VP event information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group vp event**command:

```
Router# debug redundancy application group vp event

RG VP events debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy application group transport information.

debug redundancy (RP)

To enable the display of events for troubleshooting dual Route Processors (RPs), use the **debug redundancy**command in privileged EXEC mode. To disable the display of debugging output, use the **no** form of this command.

debug redundancy {**ehsa** | **errors** | **fsm** | **kpa** | **msg** | **progression** | **status** | **timer**}
no debug redundancy {**ehsa** | **errors** | **fsm** | **kpa** | **msg** | **progression** | **status** | **timer**}

Syntax Description

ehsa	Displays redundancy facility (RF) enhanced high system availability (EHSA) information.
errors	Displays RF errors.
fsm	Displays RF feasible successor metrics (FSM) events.
kpa	Displays RF keepalive events.
msg	Displays RF messaging events.
progression	Displays RF progression events.
status	Displays RF status events.
timer	Displays RF timer events.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.3(6)AA	This command was introduced.
12.0(15)ST	This command was introduced on Cisco 10000 series Internet routers.
12.0(22)S	This command was introduced on Cisco 7500, 10000, and 12000 series Internet routers.
12.2(18)S	This command was integrated into Cisco IOS Release 12.2(18)S on Cisco 7500 series routers.
12.2(20)S	Support was added for the Cisco 7304 router. The Cisco 7500 series router is not supported in Cisco IOS Release 12.2(20)S.
12.2(28)SB	Support for this command was integrated into Cisco IOS Release 12.2(28)SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Examples

The following example enables debugging information for RF keepalive events:

```
Router# debug redundancy kpa
```

debug redundancy application group config

To display the redundancy application group configuration, use the **debug redundancy application group config**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group config {**all** | **error** | **event** | **func**}
no debug redundancy application group config {**all** | **error** | **event** | **func**}

Syntax Description

all	Displays debug information about the configuration.
error	Displays information about the redundancy group's configuration errors.
event	Displays information about the redundancy group's configuration.
func	Displays information about the redundancy group's configuration functions entered.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group config all**command:

```
Router# debug redundancy application group config all

RG config all debugging is on
```

Related Commands

Command	Description
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy application group transport information.
debug redundancy application group vp	Displays the redundancy application group VP information.

debug redundancy application group faults

To display the redundancy application group faults, use the **debug redundancy application group faults**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group faults {**all** | **error** | **event** | **fault** | **func**}
no debug redundancy application group faults {**all** | **error** | **event** | **fault** | **func**}

Syntax Description

all	Displays fault information of a redundancy group.
error	Displays error information of a redundancy groups.
event	Displays event information of a redundancy group.
fault	Displays fault events information of a redundancy group.
func	Displays fault functions information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group faults error**command:

```
Router# debug redundancy application group faults error
RG Faults error debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy application group configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy group application group transport information.
debug redundancy application group vp	Displays the redundancy group application group VP information.

debug redundancy application group media

To display the redundancy application group media information, use the **debug redundancy application group media**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group media {**all** | **error** | **event** | **nbr** | **packet** {**rx** | **tx**} | **timer**}
no debug redundancy application group media {**all** | **error** | **event** | **nbr** | **packet** {**rx** | **tx**} | **timer**}

Syntax Description

all	Displays media information of a redundancy group.
error	Displays media error information of a redundancy group.
event	Displays media events information of a redundancy group.
nbr	Displays media neighbor (nbr) information of a redundancy group.
packet	Displays media packets information of a redundancy group.
rx	Displays the incoming packets information.
tx	Displays the outgoing packets information.
timer	Displays information about redundancy group media timer events.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group media timer**command:

```
Router# debug redundancy application group media timer
RG Media timer debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group protocol	Displays the redundancy group application group protocol information.
debug redundancy application group rii	Displays the redundancy group application group RII information.
debug redundancy application group transport	Displays the redundancy group application group transport information.

Command	Description
debug redundancy application group vp	Displays the redundancy application group VP information.

debug redundancy application group protocol

To display the redundancy application group protocol information, use the **debug redundancy application group protocol**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group protocol {**all** | **detail** | **error** | **event** | **media** | **peer**}
no debug redundancy application group protocol {**all** | **detail** | **error** | **event** | **media** | **peer**}

Syntax Description

all	Displays protocol information of a redundancy group.
detail	Displays event details of a redundancy group.
error	Displays protocol error information of a redundancy group.
event	Displays protocol events information of a redundancy group.
media	Displays protocol media events information of a redundancy group.
peer	Displays protocol peer information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group protocol peer**command:

```
Router# debug redundancy application group protocol peer

RG Protocol peer debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy application group transport information.

Command	Description
debug redundancy application group vp	Displays the redundancy application group VP information.

debug redundancy application group rii

To display the redundancy application group redundancy interface identifier (RII) information, use the **debug redundancy application group rii**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group rii {**error** | **event**}
no debug redundancy application group rii {**error** | **event**}

Syntax Description

error	Displays RII error information of a redundancy group.
event	Displays RII event information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group rii event**command:

```
Router# debug redundancy application group rii event

RG RII events debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy group application group protocol information.
debug redundancy application group vp	Displays the redundancy group application group VP information.

debug redundancy application group transport

To display the redundancy application group transport information, use the **debug redundancy application group transport**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group transport {**db** | **error** | **event** | **packet** | **timer** | **trace**}
no debug redundancy application group transport {**db** | **error** | **event** | **packet** | **timer** | **trace**}

Syntax Description

db	Displays transport information of a redundancy group.
error	Displays transport error information of a redundancy group.
event	Displays transport event information of a redundancy group.
packet	Displays transport packet information of a redundancy group.
timer	Displays transport timer information of a redundancy group.
trace	Displays transport trace information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group transport trace**command:

```
Router# debug redundancy application group transport trace
RG Transport trace debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.

debug redundancy application group vp

To display the redundancy application group virtual platform (VP) information, use the **debug redundancy application group vp**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy application group vp {**error** | **event**}
no debug redundancy application group vp {**error** | **event**}

Syntax Description

error	Displays VP error information of a redundancy group.
event	Displays VP event information of a redundancy group.

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
Cisco IOS XE Release 3.1S	This command was introduced.

Examples

The following is sample output from the **debug redundancy application group vp event**command:

```
Router# debug redundancy application group vp event

RG VP events debugging is on
```

Related Commands

Command	Description
debug redundancy application group config	Displays the redundancy group application configuration.
debug redundancy application group media	Displays the redundancy application group media information.
debug redundancy application group protocol	Displays the redundancy application group protocol information.
debug redundancy application group rii	Displays the redundancy application group RII information.
debug redundancy application group transport	Displays the redundancy application group transport information.

debug redundancy as5850

To enable specific redundancy-related debug options, use the **debug redundancy as5850**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug redundancy as5850 {**fsm** | **lines** | **master** | **mode** | **rf-client**}
no debug redundancy as5850

Syntax Description

fsm	Finite-state-machine events.
lines	Hardware lines.
master	Master (active rather than standby) route-switch-controller (RSC).
mode	RSC's mode: classic-split or handover-split.
rf-client	Redundancy-related client-application information.

Command Default

This command is disabled

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(2)XB1	This command was introduced.
12.2(11)T	This command was integrated into Cisco IOS Release 12.2(11)T.

Usage Guidelines

Use the master form of the command to view redundancy-related debug entries. All debug entries continue to be logged even if you do not specify an option here, and you can always use the **show redundancy debug-log** command to view them.

Examples

The output from this command consists of event announcements that can be used by authorized troubleshooting personnel.

Related Commands

Command	Description
show redundancy debug-log	Displays up to 256 debug entries.

debug registry

To turn on the debugging output for registry events or errors when Cisco IOS Software Modularity software is running, use the **debug registry** command in privileged EXEC mode. To turn off debugging output, use the **no** form of this command or the **undebug**command.

debug registry {**events** | **errors**} [{*process-namepid*}]
no debug registry {**events** | **errors**} [{*process-namepid*}]

Syntax Description

events	Displays debugging messages about registry event messages.
errors	Displays debugging messages about registry error messages.
process-name	(Optional) Process name.
pid	(Optional) Process ID. Number in the range from 1 to 4294967295.

Command Modes

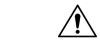
Privileged EXEC

Command History

Release	Modification
12.2(18)SXF4	This command was introduced to support Software Modularity images.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

Use the **debug registry** command to troubleshoot Software Modularity registry operations.



Caution Use any debugging command with caution because the volume of generated output can slow or stop the router operations. We recommend that this command be used only under the supervision of a Cisco engineer.

Examples

The following example turns on debugging messages for Software Modularity registry events for the TCP process:

```
Router# debug registry events tcp.proc
Debug registry events debugging is on
```

The following example turns on debugging messages for Software Modularity registry errors:

```
Router# debug registry errors
Debug registry errors debugging is on
```

debug resource policy notification

To trace the Embedded Resource Manager (ERM) notification activities for resources using the ERM feature, use the **debug resource policy notification** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug resource policy notification [**owner** *resource-owner-name*]
no debug resource policy notification [**owner** *resource-owner-name*]

Syntax Description

owner *resource-owner-name*	(Optional) Specifies the name of the resource owner (RO).

Command Default

Disabled

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(14)T	This command was introduced.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
12.2(33)SB	This command was integrated into Cisco IOS Release 12.2(33)SB.

Examples

The following example shows different instances of the **debug resource policy notification**command:

```
Router# debug resource policy notification
Enabled notif. debugs on all owners
```

When a threshold is violated, the following messages are displayed:

```
*Mar  3 09:50:44.081: Owner: 'memory' initiated a notification:
*Mar  3 09:50:44.081: %SYS-4-RESMEMEXCEED: Resource user usrr1 has exceeded the Major memory
 threshold
Pool: Processor Used: 42932864 Threshold :42932860
*Mar  3 09:50:46.081: Notification from Owner: 'memory' is dispatched for User: 'usrr1'
(ID: 0x10000B9)
*Mar  3 09:50:46.081: %SYS-4-RESMEMEXCEED: Resource user usrr1 has exceeded the Major memory
 threshold
Pool: Processor Used: 42932864 Threshold :42932860
Router# no debug resource manager notification

Disabled notif. debugs on all owners
Router# debug resource manager notification owner cpu

Enabled notif. debugs on owner 'cpu'
Router# no debug resource manager notification owner cpu

Disabled notif. debugs on owner 'cpu'
Router# debug resource manager notification owner memory
```

```
Enabled notif. debugs on owner 'memory'
Router# no debug resource manager notification owner memory

Disabled notif. debugs on owner 'memory'
Router# debug resource manager notification owner Buffer

Enabled notif. debugs on owner 'Buffer'
Router# no debug resource manager notification owner Buffer

Disabled notif. debugs on owner 'Buffer'
Router# no debug resource manager notification owner Buffer
Disabled notif. debugs on owner 'Buffer'
```

Related Commands

Command	Description
debug resource policy registration	Displays the resource policy registration debug information for the ERM resources.

debug resource policy registration

To trace the Embedded Resource Manager (ERM) registration activities for resources using the ERM feature, use the **debug resource policy registration**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug resource policy registration
no debug resource policy registration

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Privileged EXEC (#)

Command History

Release	Modification
12.3(14)T	This command was introduced.
12.2(33)SRB	This command was integrated into Cisco IOS Release 12.2(33)SRB.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
12.2(33)SB	This command was integrated into Cisco IOS Release 12.2(33)SB.

Examples

The following example shows output from the **debug resource policy registration**command:

```
Router# debug resource policy registration

Registrations debugging is on
```

When a Resource User (RU) is created, the following message is displayed:

```
*Mar  3 09:35:58.304: resource_user_register: RU: ruID: 0x10000B8, rutID: 0x1, rg_ID: 0x0
name: usrr1
```

When an RU is deleted, the following message is displayed:

```
*Mar  3 09:41:09.500: resource_user_unregister: RU: ruID: 0x10000B8, rutID: 0x1, rg_ID: 0x0
 name: usrr1
```

Related Commands

Command	Description
debug resource policy notification	Displays the resource policy notification debug information for the ERM resources.

debug resource-pool

To see and trace resource pool management activity, use the **debugresource-pool** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug resource-pool
no debug resource-pool

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(4)XI	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Enter the **debugresource-pool** command to see and trace resource pool management activity. The following table describes the resource pooling states.

Table 2: Resource Pooling States

State	Description
RM_IDLE	No call activity.
RM_RES_AUTHOR	Call waiting for authorization, message sent to authentication, authorization, and accounting (AAA).
RM_RES_ALLOCATING	Call authorized, resource-grp-mgr allocating.
RM_RES_ALLOCATED	Resource allocated, connection acknowledgment sent to signalling state. Call should get connected and become active.
RM_AUTH_REQ_IDLE	Signalling module disconnected call while in RM_RES_AUTHOR. Waiting for authorization response from AAA.
RM_RES_REQ_IDLE	Signalling module disconnected call while in RM_RES_ALLOCATING. Waiting for resource allocation response from resource-group manager.
RM_DNIS_AUTHOR	An intermediate state before proceeding with Route Processor Module (RPM) authorization.
RM_DNIS_AUTH_SUCCEEDED	Dialed number identification service (DNIS) authorization succeeded.
RM_DNIS_RES_ALLOCATED	DNIS resource allocated.
RM_DNIS_AUTH_REQ_IDLE	DNIS authorization request idle.

State	Description
RM_DNIS_AUTHOR_FAIL	DNIS authorization failed.
RM_DNIS_RES_ALLOC_SUCCESS	DNIS resource allocation succeeded.
RM_DNIS_RES_ALLOC_FAIL	DNIS resource allocation failed.
RM_DNIS_RPM_REQUEST	DNIS resource pool management requested.

You can use the resource pool state to isolate problems. For example, if a call fails authorization in the RM_RES_AUTHOR state, investigate further with AAA authorization debugs to determine whether the problem lies in the resource-pool manager, AAA, or dispatcher.

Examples

The following example shows different instances where you can use the **debugresource-pool**command:

```
Router# debug resource-pool
RM general debugging is on
Router# show debug
General OS:
  AAA Authorization debugging is on
Resource Pool:
  resource-pool general debugging is on
Router #
Router #ping 21.1.1.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 21.1.1.10, timeout is 2 seconds:
*Jan  8 00:10:30.358: RM state:RM_IDLE event:DIALER_INCALL DS0:0:0:0:1
*Jan  8 00:10:30.358: RM: event incoming call
/* An incoming call is received by RM */
*Jan  8 00:10:30.358: RM state:RM_DNIS_AUTHOR event:RM_DNIS_RPM_REQUEST
DS0:0:0:0:1
/* Receives an event notifying to proceed with RPM authorization while
in DNIS authorization state */
*Jan  8 00:10:30.358: RM:RPM event incoming call
*Jan  8 00:10:30.358: RPM profile cp1 found
/* A customer profile "cp1" is found  matching for the incoming call, in
the local database */
*Jan  8 00:10:30.358: RM state:RM_RPM_RES_AUTHOR
event:RM_RPM_RES_AUTHOR_SUCCESS DS0:0:0:0:1
/* Resource authorization success event received while in  resource
authorization state*/
*Jan  8 00:10:30.358: Allocated resource from res_group isdn1
*Jan  8 00:10:30.358: RM:RPM profile "cp1", allocated resource "isdn1"
successfully
*Jan  8 00:10:30.358: RM state:RM_RPM_RES_ALLOCATING
event:RM_RPM_RES_ALLOC_SUCCESS DS0:0:0:0:1
/* Resource allocation sucess event received while attempting to
allocate a resource */
*Jan  8 00:10:30.358: Se0:1 AAA/ACCT/RM: doing resource-allocated
(local) (nothing to do)
*Jan  8 00:10:30.366: %LINK-3-UPDOWN: Interface Serial0:1, changed state
to up
*Jan  8 00:10:30.370: %LINK-3-UPDOWN: Interface Serial0:1, changed state
to down
*Jan  8 00:10:30.570: Se0:1 AAA/ACCT/RM: doing resource-update (local)
cp1 (nothing to do)
*Jan  8 00:10:30.578: %LINK-3-UPDOWN: I.nterface Serial0:0, changed
```

```
state to up
*Jan  8 00:10:30.582: %DIALER-6-BIND: Interface Serial0:0 bound to
profile Dialer0...
Success rate is 0 percent (0/5)
Router #
*Jan  8 00:10:36.662: %ISDN-6-CONNECT: Interface Serial0:0 is now
connected to 71017
*Jan  8 00:10:52.990: %DIALER-6-UNBIND: Interface Serial0:0 unbound from
profile Dialer0
*Jan  8 00:10:52.990: %ISDN-6-DISCONNECT: Interface Serial0:0
disconnected from 71017 , call lasted 22 seconds
*Jan  8 00:10:53.206: %LINK-3-UPDOWN: Interface Serial0:0, changed state
to down
*Jan  8 00:10:53.206: %ISDN-6-DISCONNECT: Interface Serial0:1
disconnected from unknown , call lasted 22 seconds
*Jan  8 00:10:53.626: RM state:RM_RPM_RES_ALLOCATED event:DIALER_DISCON
DS0:0:0:0:1
/* Received  Disconnect event from signalling stack  for a call which
has a resource allocated. */
*Jan  8 00:10:53.626: RM:RPM event call drop
/* RM processing the disconnect event */
*Jan  8 00:10:53.626: Deallocated resource from res_group isdn1
*Jan  8 00:10:53.626: RM state:RM_RPM_DISCONNECTING
event:RM_RPM_DISC_ACK DS0:0:0:0:1
/* An intermediate state while the DISCONNECT event is being processed
by external servers, before RM goes back into IDLE state.
*/
```

The following table describes the significant fields shown in the display.

Table 3: debug resource-pool Field Descriptions

Field	Description
RM state:RM_IDLE	Resource manager state that displays no active calls.
RM state:RM_RES_AUTHOR	Resource authorization state.
RES_AUTHOR_SUCCESS DS0: shelf:slot:port:channel	Actual physical resource that is used
Allocated resource from res_group	Physical resource group that accepts the call.
RM profile <x>, allocated resource <x>	Specific customer profile and resource group names used to accept the call.
RM state: RM_RES_ALLOCATING	Resource manager state that unifies a call with a physical resource.

debug rif

To display information on entries entering and leaving the routing information field (RIF) cache, use the **debugrif** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rif
no debug rif

Syntax Description

This command has no arguments or keywords.

Command Modes

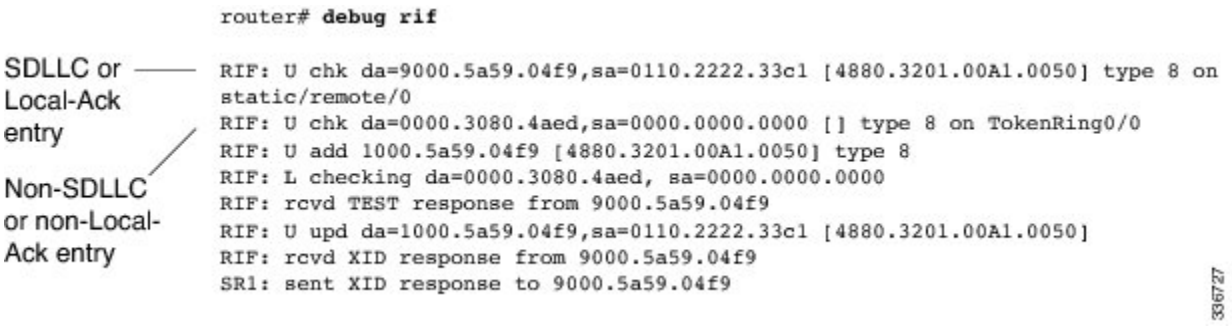
Privileged EXEC

Usage Guidelines

In order to use the **debugrif** command to display traffic source-routed through an interface, fast switching of source route bridging (SRB) frames must first be disabled with the **nosource-bridgeroute-cache** interface configuration command.

Examples

The following is sample output from the **debugrif** command:



The first line of output is an example of a RIF entry for an interface configured for SDLC Logical Link Control (SDLLC) or Local-Ack. The following table describes significant fields shown in the display.

Table 4: debug rif Field Descriptions

Field	Description
RIF:	This message describes RIF debugging output.
U chk	Update checking. The entry is being updated; the timer is set to zero (0).
da=9000.5a59.04f9	Destination MAC address.
sa=0110.2222.33c1	Source MAC address. This field contains values of zero (0000.0000.0000) in a non-SDLLC or non-Local-Ack entry.
[4880.3201.00A1.0050]	RIF string. This field is blank (null RIF) in a non-SDLLC or non-Local-Ack entry.

Field	Description
type 8	Possible values follow: • 0--Null entry • 1--This entry was learned from a particular Token Ring port (interface) • 2--Statically configured • 4--Statically configured for a remote interface • 8--This entry is to be aged • 16--This entry (which has been learned from a remote interface) is to be aged • 32--This entry is not to be aged • 64--This interface is to be used by LAN Network Manager (and is not to be aged)
on static/remote/0	This route was learned from a real Token Ring port, in contrast to a virtual ring.

The following line of output is an example of a RIF entry for an interface that is not configured for SDLLC or Local-Ack:

```
RIF: U chk da=0000.3080.4aed,sa=0000.0000.0000 [] type 8 on TokenRing0/0
```

Notice that the source address contains only zero values (0000.0000.0000), and that the RIF string is null ([ ]). The last element in the entry indicates that this route was learned from a virtual ring, rather than a real Token Ring port.

The following line shows that a new entry has been added to the RIF cache:

```
RIF: U add 1000.5a59.04f9 [4880.3201.00A1.0050] type 8
```

The following line shows that a RIF cache lookup operation has taken place:

```
RIF: L checking da=0000.3080.4aed, sa=0000.0000.0000
```

The following line shows that a TEST response from address 9000.5a59.04f9 was inserted into the RIF cache:

```
RIF: rcvd TEST response from 9000.5a59.04f9
```

The following line shows that the RIF entry for this route has been found and updated:

```
RIF: U upd da=1000.5a59.04f9,sa=0110.2222.33c1 [4880.3201.00A1.0050]
```

The following line shows that an XID response from this address was inserted into the RIF cache:

```
RIF: rcvd XID response from 9000.5a59.04f9
```

The following line shows that the router sent an XID response to this address:

```
SR1: sent XID response to 9000.5a59.04f9
```

The following table explains the other possible lines of **debugrif** command output.

Table 5: Additional debug rif Field Descriptions

Field	Description
RIF: L Sending XID for <*address*>	Router/bridge wanted to send a packet to *address* but did not find it in the RIF cache. It sent an XID explorer packet to determine which RIF it should use. The attempted packet is dropped.
RIF: L No buffer for XID to <*address*>	Similar to the previous description; however, a buffer in which to build the XID packet could not be obtained.
RIF: U remote rif too small <*rif*>	Packet's RIF was too short to be valid.
RIF: U rej <*address*> too big <*rif*>	Packet's RIF exceeded the maximum size allowed and was rejected. The maximum size is 18 bytes.
RIF: U upd interface <*address*>	RIF entry for this router/bridge's interface has been updated.
RIF: U ign <*address*> interface update	RIF entry that would have updated an interface corresponding to one of this router's interfaces.
RIF: U add <*address*><*rif*>	RIF entry for *address* has been added to the RIF cache.
RIF: U no memory to add rif for <*address*>	No memory to add a RIF entry for *address*.
RIF: removing rif entry for <*address*,*typecode*>	RIF entry for *address* has been forcibly removed.
RIF: flushed <*address*>	RIF entry for *address* has been removed because of a RIF cache flush.
RIF: expired <*address*>	RIF entry for *address* has been aged out of the RIF cache.

Related Commands

Command	Description
debug list	Filters debugging information on a per-interface or per-access list basis.

debug route-map ipc

To display a summary of the one-way Inter-process Communications (IPC) messages set from the route processor (RP) to the Versatile Interface Processor (VIP) about NetFlow policy routing when distributed Cisco Express Forwarding (dCEF) is enabled, use the **debug route-map ipc**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug route-map ipc commanddebug route-map ipc
no debug route-map ipc commanddebug route-map ipc

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(3)T	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

This command is especially helpful for policy routing with dCEF switching.

This command displays a summary of one-way IPC messages from the RP to the VIP about NetFlow policy routing. If you execute this command on the RP, the messages are shown as “Sent.” If you execute this command on the VIP console, the IPC messages are shown as “Received.”

Examples

The following is sample output from the **debug route-map ipc**command executed at the RP:

```
Router# debug route-map ipc
Routemap related IPC debugging is on

Router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)# ip cef distributed
Router(config)#^Z
Router#
RM-IPC: Clean routemap config in slot 0
RM-IPC: Sent clean-all-routemaps; len 12
RM-IPC: Download all policy-routing related routemap config to slot 0
RM-IPC: Sent add routemap test(seq:10); n_len 5; len 17
RM-IPC: Sent add acl 1 of routemap test(seq:10); len 21
RM-IPC: Sent add min 10 max 300 of routemap test(seq:10); len 24
RM-IPC: Sent add preced 1 of routemap test(seq:10); len 17
RM-IPC: Sent add tos 4 of routemap test(seq:10); len 17
RM-IPC: Sent add nexthop 50.0.0.8 of routemap test(seq:10); len 20
RM-IPC: Sent add default nexthop 50.0.0.9 of routemap test(seq:10); len 20
RM-IPC: Sent add interface Ethernet0/0/3(5) of routemap test(seq:10); len 20
RM-IPC: Sent add default interface Ethernet0/0/2(4) of routemap test(seq:10); len 20
```

The following is sample output from the **debug route-map ipc**command executed at the VIP:

```
VIP-Slot0# debug route-map ipc
Routemap related IPC debugging is on
```

```
VIP-Slot0#
RM-IPC: Rcvd clean-all-routemaps; len 12
RM-IPC: Rcvd add routemap test(seq:10); n_len 5; len 17
RM-IPC: Rcvd add acl 1 of routemap test(seq:10); len 21
RM-IPC: Rcvd add min 10 max 300 of routemap test(seq:10); len 24
RM-IPC: Rcvd add preced 1 of routemap test(seq:10); len 17
RM-IPC: Rcvd add tos 4 of routemap test(seq:10); len 17
RP-IPC: Rcvd add nexthop 50.0.0.8 of routemap test(seq:10); len 20
RP-IPC: Rcvd add default nexthop 50.0.0.9 of routemap test(seq:10); len 20
RM-IPC: Rcvd add interface Ethernet0/3 of routemap tes; len 20
RM-IPC: Rcvd add default interface Ethernet0/2 of routemap test(seq:10); len 20
```

debug rpms-proc preauth

To enable diagnostic reporting of preauthentication information, use the **debugrpms-procpreauth** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rpms-proc preauth {**all** | **h323** | **sip**}
no debug rpms-proc preauth {**all** | **h323** | **sip**}

Syntax Description

all	Provides information for all calls.
h323	Provides information for H.323 calls.
sip	Provides information for Session Initiation Protocol (SIP) calls.

Command Default

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(11)T	This command was introduced.

Examples

The following example shows debugging output for two calls. The first is a leg 3 SIP call, and the second is a leg 3 H.323 call:

```
Router# debug rpms-proc preauth all
All RPMS Process preauth tracing is enabled
Feb 10 14:00:07.236: Entering rpms_proc_print_preauth_req
Feb 10 14:00:07.236: Request = 0
Feb 10 14:00:07.236: Preauth id = 8
Feb 10 14:00:07.236: EndPt Type  = 1
Feb 10 14:00:07.236: EndPt = 192.168.80.70
Feb 10 14:00:07.236: Resource Service = 1
Feb 10 14:00:07.236: Call_origin = answer
Feb 10 14:00:07.236: Call_type = voip
Feb 10 14:00:07.236: Calling_num = 2220001
Feb 10 14:00:07.236: Called_num = 1120001
Feb 10 14:00:07.236: Protocol  = 1
Feb 10 14:00:07.236:rpms_proc_create_node:Created node with preauth_id = 8
Feb 10 14:00:07.236:rpms_proc_send_aaa_req:uid got is 19
Feb 10 14:00:07.240:rpms_proc_preauth_response:Context is for preauth_id 8, aaa_uid 19
Feb 10 14:00:07.240:rpms_proc_preauth_response:Deleting Tree node for preauth id 8 uid 19
Feb 10 14:00:07.284: Entering rpms_proc_print_preauth_req
Feb 10 14:00:07.284: Request = 0
Feb 10 14:00:07.284: Preauth id = 9
Feb 10 14:00:07.284: EndPt Type  = 1
Feb 10 14:00:07.284: EndPt = 192.168.81.102
Feb 10 14:00:07.284: Resource Service = 1
Feb 10 14:00:07.284: Call_origin = answer
Feb 10 14:00:07.284: Call_type = voip
Feb 10 14:00:07.284: Calling_num = 2210001
Feb 10 14:00:07.284: Called_num = 1#1110001
Feb 10 14:00:07.284: Protocol  = 0
Feb 10 14:00:07.288:rpms_proc_create_node:Created node with preauth_id = 9
```

```
Feb 10 14:00:07.288:rpms_proc_send_aaa_req:uid got is 21
Feb 10 14:00:07.300:rpms_proc_preauth_response:Context is for preauth_id 9, aaa_uid 21
Feb 10 14:00:07.300:rpms_proc_preauth_response:Deleting Tree node for preauth id 9 uid 21
```

The following example shows the output for a single leg 3 H.323 call:

```
Router# debug rpms-proc preauth h323

RPMS Process H323 preauth tracing is enabled
Feb 10 14:04:57.867: Entering rpms_proc_print_preauth_req
Feb 10 14:04:57.867: Request = 0
Feb 10 14:04:57.867: Preauth id = 10
Feb 10 14:04:57.867: EndPt Type  = 1
Feb 10 14:04:57.867: EndPt = 192.168.81.102
Feb 10 14:04:57.867: Resource Service = 1
Feb 10 14:04:57.867: Call_origin = answer
Feb 10 14:04:57.867: Call_type = voip
Feb 10 14:04:57.867: Calling_num = 2210001
Feb 10 14:04:57.867: Called_num = 1#1110001
Feb 10 14:04:57.867: Protocol  = 0
Feb 10 14:04:57.867:rpms_proc_create_node:Created node with preauth_id = 10
Feb 10 14:04:57.867:rpms_proc_send_aaa_req:uid got is 25
Feb 10 14:04:57.875:rpms_proc_preauth_response:Context is for preauth_id 10, aaa_uid 25
Feb 10 14:04:57.875:rpms_proc_preauth_response:Deleting Tree node for preauth id 10 uid 25
```

The following example shows output for a single leg 3 SIP call:

```
Router# debug rpms-proc preauth sip
RPMS Process SIP preauth tracing is enabled
Feb 10 14:08:02.880: Entering rpms_proc_print_preauth_req
Feb 10 14:08:02.880: Request = 0
Feb 10 14:08:02.880: Preauth id = 11
Feb 10 14:08:02.880: EndPt Type  = 1
Feb 10 14:08:02.880: EndPt = 192.168.80.70
Feb 10 14:08:02.880: Resource Service = 1
Feb 10 14:08:02.880: Call_origin = answer
Feb 10 14:08:02.880: Call_type = voip
Feb 10 14:08:02.880: Calling_num = 2220001
Feb 10 14:08:02.880: Called_num = 1120001
Feb 10 14:08:02.880: Protocol  = 1
Feb 10 14:08:02.880:rpms_proc_create_node:Created node with preauth_id = 11
Feb 10 14:08:02.880:rpms_proc_send_aaa_req:uid got is 28
Feb 10 14:08:02.888:rpms_proc_preauth_response:Context is for preauth_id 11, aaa_uid 28
Feb 10 14:08:02.888:rpms_proc_preauth_response:Deleting Tree node for preauth id 11 uid 28
```

The following table describes the significant fields shown in the display.

Table 6: debug rpms-proc preauth Field Descriptions

Field	Description
Request	Request Type--0 for preauthentication, 1 for disconnect.
Preauth id	Identifier for the preauthentication request.
EndPt Type	Call Origin End Point Type--1 for IP address, 2 for Interzone ClearToken (IZCT) value.
EndPt	Call Origin End Point Value--An IP address or IZCT value.
Resource Service	Resource Service Type--1 for Reservation, 2 for Query.

Field	Description
Call_origin	Answer.
Call_type	Voice over IP (VoIP).
Calling_num	Calling party number (calling line identification, or CLID).
Called_num	Called party number (dialed number identification service, or DNIS).
Protocol	0 for H.323, 1 for SIP.
function reports	Various identifiers and status reports for executed functions.

debug rtpspi all

To debug all Routing Table Protocol (RTP) security parameter index (SPI) errors, sessions, and in/out functions, use the **debug rtpspi all** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtpspi all
no debug rtpspi all

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(7)XK	This command was introduced on the Cisco MC3810 and Cisco 3600 series routers (except the Cisco 3620).
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Caution Be careful when you use this command because it can result in console flooding and reduced voice quality.

Examples

The following example shows a debug trace for RTP SPI errors, sessions, and in/out functions on a gateway:

```
Router# debug rtpspi all
RTP SPI Error, Session and function in/out tracings are enabled.
*Mar  1 00:38:59.381:rtpspi_allocate_rtp_port:Entered.
*Mar  1 00:38:59.381:rtpspi_allocate_rtp_port:allocated RTP port 16544
*Mar  1 00:38:59.381:rtpspi_allocate_rtp_port:Success. port = 16544. Leaving.
*Mar  1 00:38:59.381:rtpspi_call_setup_request:entered.
        Call Id = 5, dest = 0.0.0.0;   callInfo:
        final dest flag = 0,
        rtp_session_mode = 0x2,
        local_ip_addrs = 0x5000001,remote_ip_addrs = 0x0,
        local rtp port = 16544, remote rtp port = 0
*Mar  1 00:38:59.381:rtpspi_call_setup_request:spi_info copied for rtpspi_app_data_t.
*Mar  1 00:38:59.385:rtpspi_call_setup_request:leaving
*Mar  1 00:38:59.385:rtpspi_call_setup() entered
*Mar  1 00:38:59.385:rtpspi_initialize_ccb:Entered
*Mar  1 00:38:59.385:rtpspi_initialize_ccb:leaving
*Mar  1 00:38:59.385:rtpspi_call_setup:rtp_session_mode = 0x2
*Mar  1 00:38:59.385:rtpspi_call_setup:mode = CC_CALL_NORMAL.
        destianation number = 0.0.0.0
*Mar  1 00:38:59.385:rtpspi_call_setup:Passed local_ip_addrs=0x5000001
*Mar  1 00:38:59.385:rtpspi_call_setup:Passed local_rtp_port = 16544
*Mar  1 00:38:59.385:rtpspi_call_setup:Saved RTCP Session = 0x1AF57E0
```

```
*Mar  1 00:38:59.385:rtpspi_call_setup:Passed remote rtp port = 0.
*Mar  1 00:38:59.389:rtpspi_start_rtcp_session:entered. rtp session mode=0x2, rem rtp=0,
rem ip=0x0
*Mar  1 00:38:59.389:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x2
*Mar  1 00:38:59.389:rtpspi_start_rtcp_session:Starting RTCP session.
        Local IP addr = 0x5000001, Remote IP addr = 0x0,
        Local RTP port = 16544, Remote RTP port = 0, mode = 0x2
*Mar  1 00:38:59.389:rtpspi_start_rtcp_session:RTP Session creation Success.
*Mar  1 00:38:59.389:rtpspi_call_setup:RTP Session creation Success.
*Mar  1 00:38:59.389:rtpspi_call_setup:calling cc_api_call_connected()
*Mar  1 00:38:59.389:rtpspi_call_setup:Leaving.
*Mar  1 00:38:59.393:rtpspi_bridge:entered. conf id = 1, src i/f = 0x1859E88,
        dest i/f = 0x1964EEC, src call id = 5, dest call id = 4
        call info = 0x1919140, xmit fn = 0xDA7494, tag = 0
*Mar  1 00:38:59.393:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x2
*Mar  1 00:38:59.393:rtpspi_modify_rtcp_session_parameters():xmit fn=0xDA7494,
dstIF=0x1964EEC, dstCallID=4, voip_mode=0x2, rtp_mode=0x2, ssrc_status=0
*Mar  1 00:38:59.393:rtpspi_bridge:Calling cc_api_bridge_done() for 5(0x1AF5400) and 4(0x0).
*Mar  1 00:38:59.393:rtpspi_bridge:leaving.
*Mar  1 00:38:59.397:rtpspi_caps_ind:Entered. vdb = 0x1859E88 call id = 5, srcCallId = 4
*Mar  1 00:38:59.397:rtpspi_caps_ind:caps from VTSP:codec=0x83FB, codec_bytes=0x50,
                   fax rate=0x7F, vad=0x3 modem=0x0
*Mar  1 00:38:59.397:rtpspi_get_rtcp_session_parameters():CURRENT VALUES:
dstIF=0x1964EEC, dstCallID=4, current_seq_num=0x0
*Mar  1 00:38:59.397:rtpspi_get_rtcp_session_parameters():NEW VALUES:
dstIF=0x1964EEC, dstCallID=4, current_seq_num=0x261C
*Mar  1 00:38:59.397:rtpspi_caps_ind:Caps Used:codec=0x1, codec bytes=80,
        fax rate=0x1, vad=0x1, modem=0x1, dtmf_relay=0x1, seq_num_start=0x261D
*Mar  1 00:38:59.397:rtpspi_caps_ind:calling cc_api_caps_ind().
*Mar  1 00:38:59.397:rtpspi_caps_ind:Returning success
*Mar  1 00:38:59.397:rtpspi_caps_ack:Entered. call id = 5, srcCallId = 4
*Mar  1 00:38:59.397:rtpspi_caps_ack:leaving.
*Mar  1 00:38:59.618:rtpspi_call_modify:entered. call-id=5, nominator=0x7, params=0x18DD440
*Mar  1 00:38:59.618:rtpspi_call_modify:leaving
*Mar  1 00:38:59.618:rtpspi_do_call_modify:Entered. call-id = 5
*Mar  1 00:38:59.622:rtpspi_do_call_modify:Remote RTP port changed. New port=16432
*Mar  1 00:38:59.622:rtpspi_do_call_modify:Remote IP addrs changed. New IP addrs=0x6000001
*Mar  1 00:38:59.622:rtpspi_do_call_modify:new mode 2 is the same as the current mode
*Mar  1 00:38:59.622:rtpspi_do_call_modify:Starting new RTCP session.
*Mar  1 00:38:59.622:rtpspi_start_rtcp_session:entered. rtp session mode=0x2, rem rtp=16432,
 rem ip=0x6000001
*Mar  1 00:38:59.622:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x2
*Mar  1 00:38:59.622:rtpspi_start_rtcp_session:Removing old RTCP session.
*Mar  1 00:38:59.622:rtpspi_start_rtcp_session:Starting RTCP session.
        Local IP addr = 0x5000001, Remote IP addr = 0x6000001,
        Local RTP port = 16544, Remote RTP port = 16432, mode = 0x2
*Mar  1 00:38:59.622:rtpspi_start_rtcp_session:RTCP Timer creation Success. (5)*(5000)
*Mar  1 00:38:59.622:rtpspi_start_rtcp_session:RTP Session creation Success.
*Mar  1 00:38:59.622:rtpspi_do_call_modify:RTP Session creation Success.
*Mar  1 00:38:59.622:rtpspi_do_call_modify:Calling cc_api_call_modify(), result=0x0
*Mar  1 00:38:59.626:rtpspi_do_call_modify:success. leaving
*Mar  1 00:39:05.019:rtpspi_call_modify:entered. call-id=5, nominator=0x7, params=0x18DD440
*Mar  1 00:39:05.019:rtpspi_call_modify:leaving
*Mar  1 00:39:05.019:rtpspi_do_call_modify:Entered. call-id = 5
*Mar  1 00:39:05.019:rtpspi_do_call_modify:New remote RTP port = old rtp port = 16432
*Mar  1 00:39:05.019:rtpspi_do_call_modify:New remote IP addrs = old IP addrs = 0x6000001
*Mar  1 00:39:05.019:rtpspi_do_call_modify:Mode changed. new = 3, old = 2
*Mar  1 00:39:05.019:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x3
*Mar  1 00:39:05.023:rtpspi_modify_rtcp_session_parameters():xmit fn=0xDA7494,
dstIF=0x1964EEC, dstCallID=4, voip_mode=0x3, rtp_mode=0x3, ssrc_status=2
*Mar  1 00:39:05.023:rtpspi_do_call_modify:RTCP Timer start.
*Mar  1 00:39:05.023:rtpspi_do_call_modify:Calling cc_api_call_modify(), result=0x0
*Mar  1 00:39:05.023:rtpspi_do_call_modify:success. leaving
*Mar  1 00:40:13.786:rtpspi_bridge_drop:entered. src call-id=5, dest call-id=4, tag=0
```

```
*Mar  1 00:40:13.786:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x3
*Mar  1 00:40:13.786:rtpspi_modify_rtcp_session_parameters():xmit fn=0x0,
dstIF=0x0, dstCallID=0, voip_mode=0x3, rtp_mode=0x3, ssrc_status=2
*Mar  1 00:40:13.786:rtpspi_bridge_drop:leaving
*Mar  1 00:40:13.790:rtpspi_call_disconnect:entered. call-id=5, cause=16, tag=0
*Mar  1 00:40:13.790:rtpspi_call_disconnect:leaving.
*Mar  1 00:40:13.790:rtpspi_do_call_disconnect:Entered. call-id = 5
*Mar  1 00:40:13.790:rtpspi_do_call_disconnect:calling rtpspi_call_cleanup(). call-id=5
*Mar  1 00:40:13.794:rtpspi_call_cleanup:entered. ccb = 0x1AF5400, call-id=5, rtp port =
16544
*Mar  1 00:40:13.794:rtpspi_call_cleanup:releasing ccb cache. RTP port=16544
*Mar  1 00:40:13.794:rtpspi_store_call_history_entry():Entered.
*Mar  1 00:40:13.794:rtpspi_store_call_history_entry():Leaving.
*Mar  1 00:40:13.794:rtpspi_call_cleanup:RTCP Timer Stop.
*Mar  1 00:40:13.794:rtpspi_call_cleanup:deallocating RTP port 16544.
*Mar  1 00:40:13.794:rtpspi_free_rtcp_session:Entered.
*Mar  1 00:40:13.794:rtpspi_free_rtcp_session:Success. Leaving
*Mar  1 00:40:13.794::rtpspi_call_cleanup freeing ccb (0x1AF5400)
*Mar  1 00:40:13.794:rtpspi_call_cleanup:leaving
*Mar  1 00:40:13.794:rtpspi_do_call_disconnect:leaving
```

Related Commands

Command	Description
debug rtpspi errors	Debugs RTP SPI errors.
debug rtpspi inout	Debugs RTP SPI in/out functions.
debug rtpspi send-nse	Triggers the RTP SPI to send a triple redundant NSE.
debug sgcp errors	Debugs SGCP errors.
debug sgcp events	Debugs SGCP events.
debug sgcp packet	Debugs SGCP packets.
debug vtsp send-nse	Sends and debugs a triple redundant NSE from the DSP to a remote gateway.

debug rtpspi errors

To debug Routing Table Protocol (RTP) security parameter index (SPI) errors, use the **debug rtpspi errors**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtpspi errors
no debug rtpspi errors

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(7)XK	This command was introduced on the Cisco MC3810 device and Cisco 3600 series routers (except the Cisco 3620).
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Caution Be careful when you use this command because it can result in console flooding and reduced voice quality.

Examples

This example shows a debug trace for RTP SPI errors on two gateways. The following example shows the debug trace on the first gateway:

```
Router# debug rtpspi errors
00:54:13.272:rtpspi_do_call_modify:new mode 2 is the same as the current mode
00:54:18.738:rtpspi_do_call_modify:New remote RTP port = old rtp port = 16452
00:54:18.738:rtpspi_do_call_modify:New remote IP addrs = old IP addrs = 0x6000001
```

The following example shows the debug trace on the second gateway:

```
Router# debug rtpspi errors
00:54:08:rtpspi_process_timers:
00:54:08:rtpspi_process_timers:Timer 0x1A5AF9C expired.
00:54:08:rtpspi_process_timers:Timer expired for callID 0x3
00:54:08:rtpspi_process_timers:
00:54:08:rtpspi_process_timers:Timer 0x1A5AF9C expired.
00:54:08:rtpspi_process_timers:Timer expired for callID 0x3
00:54:08:rtpspi_process_timers:
00:54:08:rtpspi_process_timers:Timer 0x1A5AF9C expired.
00:54:08:rtpspi_process_timers:Timer expired for callID 0x3
00:54:09:rtpspi_process_timers:
00:54:09:rtpspi_process_timers:Timer 0x1A5AFBC expired.
00:54:09:rtpspi_process_timers:Timer expired for callID 0x3
00:54:09:rtpspi_process_timers:
00:54:09:rtpspi_process_timers:Timer 0x1A5B364 expired.
00:54:09:rtpspi_process_timers:Timer expired for callID 0x3
```

Related Commands

Command	Description
debug rtpspi all	Debugs all RTP SPI errors, sessions, and in/out functions.
debug rtpspi inout	Debugs RTP SPI in/out functions.
debug rtpspi send-nse	Triggers the RTP SPI to send a triple redundant NSE.
debug sgcp errors	Debugs SGCP errors.
debug sgcp events	Debugs SGCP events.
debug sgcp packet	Debugs SGCP packets.
debug vtsp send-nse	Sends and debugs a triple redundant NSE from the DSP to a remote gateway.

debug rtpspi inout

To debug Routing Table Protocol (RTP) security parameter index (SPI) in/out functions, use the **debug rtpspi inout**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtpspi inout
no debug rtpspi inout

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

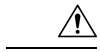
Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(7)XK	This command was introduced on the Cisco MC3810 device and Cisco 3600 series routers (except the Cisco 3620 device).
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines



Caution Be careful when you use this command because it can result in console flooding and reduced voice quality.

Examples

The following example shows a debug trace for RTP SPI in/out functions on a gateway:

```
Router#
debug rtpspi inout
*Mar  1 00:57:24.565:rtpspi_allocate_rtp_port:Entered.
*Mar  1 00:57:24.565:rtpspi_allocate_rtp_port:Success. port = 16520. Leaving.
*Mar  1 00:57:24.565:rtpspi_call_setup_request:entered.
        Call Id = 9, dest = 0.0.0.0;   callInfo:
        final dest flag = 0,
        rtp_session_mode = 0x2,
        local_ip_addrs = 0x5000001,remote_ip_addrs = 0x0,
        local rtp port = 16520, remote rtp port = 0
*Mar  1 00:57:24.565:rtpspi_call_setup_request:spi_info copied for rtpspi_app_data_t.
*Mar  1 00:57:24.565:rtpspi_call_setup_request:leaving
*Mar  1 00:57:24.569:rtpspi_call_setup() entered
*Mar  1 00:57:24.569:rtpspi_initialize_ccb:Entered
*Mar  1 00:57:24.569:rtpspi_initialize_ccb:leaving
*Mar  1 00:57:24.569:rtpspi_start_rtcp_session:entered. rtp session mode=0x2, rem rtp=0,
rem ip=0x0
*Mar  1 00:57:24.569:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x2
*Mar  1 00:57:24.569:rtpspi_call_setup:Leaving.
*Mar  1 00:57:24.573:rtpspi_bridge:entered. conf id = 3, src i/f = 0x1859E88,
        dest i/f = 0x1964EEC, src call id = 9, dest call id = 8
        call info = 0x1919140, xmit fn = 0xDA7494, tag = 0
*Mar  1 00:57:24.573:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x2
*Mar  1 00:57:24.573:rtpspi_bridge:leaving.
*Mar  1 00:57:24.573:rtpspi_caps_ind:Entered. vdb = 0x1859E88 call id = 9, srcCallId = 8
```

```
*Mar  1 00:57:24.577:rtpspi_caps_ind:Returning success
*Mar  1 00:57:24.577:rtpspi_caps_ack:Entered. call id = 9, srcCallId = 8
*Mar  1 00:57:24.577:rtpspi_caps_ack:leaving.
*Mar  1 00:57:24.818:rtpspi_call_modify:entered. call-id=9, nominator=0x7, params=0x18DD440
*Mar  1 00:57:24.818:rtpspi_call_modify:leaving
*Mar  1 00:57:24.818:rtpspi_do_call_modify:Entered. call-id = 9
*Mar  1 00:57:24.818:rtpspi_start_rtcp_session:entered. rtp session mode=0x2, rem rtp=16396,
 rem ip=0x6000001
*Mar  1 00:57:24.822:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x2
*Mar  1 00:57:24.822:rtpspi_do_call_modify:success. leaving
*Mar  1 00:57:30.296:rtpspi_call_modify:entered. call-id=9, nominator=0x7, params=0x18DD440
*Mar  1 00:57:30.296:rtpspi_call_modify:leaving
*Mar  1 00:57:30.300:rtpspi_do_call_modify:Entered. call-id = 9
*Mar  1 00:57:30.300:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x3
*Mar  1 00:57:30.300:rtpspi_do_call_modify:success. leaving
*Mar  1 00:58:39.055:rtpspi_bridge_drop:entered. src call-id=9, dest call-id=8, tag=0
*Mar  1 00:58:39.055:rtpspi_get_rtcp_mode:entered. rtp_mode = 0x3
*Mar  1 00:58:39.055:rtpspi_bridge_drop:leaving
*Mar  1 00:58:39.059:rtpspi_call_disconnect:entered. call-id=9, cause=16, tag=0
*Mar  1 00:58:39.059:rtpspi_call_disconnect:leaving.
*Mar  1 00:58:39.059:rtpspi_do_call_disconnect:Entered. call-id = 9
*Mar  1 00:58:39.059:rtpspi_call_cleanup:entered. ccb = 0x1AF5400, call-id=9, rtp port =
16520
*Mar  1 00:58:39.059:rtpspi_store_call_history_entry():Entered.
*Mar  1 00:58:39.059:rtpspi_store_call_history_entry():Leaving.
*Mar  1 00:58:39.059:rtpspi_free_rtcp_session:Entered.
*Mar  1 00:58:39.059:rtpspi_free_rtcp_session:Success. Leaving
*Mar  1 00:58:39.063:rtpspi_call_cleanup:leaving
*Mar  1 00:58:39.063:rtpspi_do_call_disconnect:leaving
```

Related Commands

Command	Description
debug rtpspi all	Debugs all RTP SPI errors, sessions, and in/out functions.
debug rtpspi errors	Debugs RTP SPI errors.
debug rtpspi send-nse	Triggers the RTP SPI to send a triple redundant NSE.
debug sgcp errors	Debugs SGCP errors.
debug sgcp events	Debugs SGCP events.
debug sgcp packet	Debugs SGCP packets.
debug vtsp send-nse	Sends and debugs a triple redundant NSE from the DSP to a remote gateway.

debug rtpspi send-nse

To trigger the Routing Table Protocol (RTP) security parameter index (SPI) software module to send a triple redundant NSE, use the **debug rtpspi send-nse**command in privileged EXEC mode. To disable this action, use the **no** form of the command.

debug rtpspi send-nse *call-ID NSE-event-ID*
no debug rtpspi send-nse *call-ID NSE-event-ID*

Syntax Description

call-ID	Specifies the call ID of the active call. The valid range is from 0 to 65535.
NSE-event-ID	Specifies the NSE Event ID. The valid range is from 0 to 255.

Command Default

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(7)XK	This command was introduced on the Cisco MC3810 device and Cisco 3600 series routers (except the Cisco 3620 router).
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Examples

The following example shows the RTP SPI software module set to send an NSE:

```
Router# debug rtpspi send-nse
```

Related Commands

Command	Description
debug rtpspi all	Debugs all RTP SPI errors, sessions, and in/out functions.
debug rtpspi errors	Debugs RTP SPI errors.
debug rtpspi inout	Debugs RTP SPI in/out functions.
debug sgcp errors	Debugs SGCP errors.
debug sgcp events	Debugs SGCP events.
debug sgcp packet	Debugs SGCP packets.
debug vtsp send-nse	Sends and debugs a triple redundant NSE from the DSP to a remote gateway.

debug rtpspi session

To debug all Routing Table Protocol (RTP) security parameter index (SPI) sessions, use the **debug rtpspi session**command in privileged EXEC mode. To disable debugging, use the **no** form of this command.

debug rtpspi session
no debug rtpspi session

Syntax Description

This command has no arguments or keywords.

Command Default

No default behavior or values

Command Modes

Privileged EXEC

Command History

Release	Modification
12.0(7)XK	This command was introduced on the Cisco MC3810 device and Cisco 3600 series routers (except the Cisco 3620 router).
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Examples

The following example shows a debug trace for RTP SPI sessions on a gateway:

```
Router# debug rtpspi session
*Mar  1 01:01:51.593:rtpspi_allocate_rtp_port:allocated RTP port 16406
*Mar  1 01:01:51.593:rtpspi_call_setup:rtp_session_mode = 0x2
*Mar  1 01:01:51.593:rtpspi_call_setup:mode = CC_CALL_NORMAL.
       destianation number = 0.0.0.0
*Mar  1 01:01:51.593:rtpspi_call_setup:Passed local_ip_addrs=0x5000001
*Mar  1 01:01:51.593:rtpspi_call_setup:Passed local_rtp_port = 16406
*Mar  1 01:01:51.593:rtpspi_call_setup:Saved RTCP Session = 0x1AFDFBC
*Mar  1 01:01:51.593:rtpspi_call_setup:Passed remote rtp port = 0.
*Mar  1 01:01:51.598:rtpspi_start_rtcp_session:Starting RTCP session.
       Local IP addr = 0x5000001, Remote IP addr = 0x0,
       Local RTP port = 16406, Remote RTP port = 0, mode = 0x2
*Mar  1 01:01:51.598:rtpspi_start_rtcp_session:RTP Session creation Success.
*Mar  1 01:01:51.598:rtpspi_call_setup:RTP Session creation Success.
*Mar  1 01:01:51.598:rtpspi_call_setup:calling cc_api_call_connected()
*Mar  1 01:01:51.598:rtpspi_modify_rtcp_session_parameters():xmit fn=0xDA7494,
dstIF=0x1964EEC, dstCallID=10, voip_mode=0x2, rtp_mode=0x2, ssrc_status=0
*Mar  1 01:01:51.598:rtpspi_bridge:Calling cc_api_bridge_done() for 11(0x1AF5400) and
10(0x0).
*Mar  1 01:01:51.602:rtpspi_caps_ind:caps from VTSP:codec=0x83FB, codec_bytes=0x50,
                  fax rate=0x7F, vad=0x3 modem=0x0
*Mar  1 01:01:51.602:rtpspi_get_rtcp_session_parameters():CURRENT VALUES:
dstIF=0x1964EEC, dstCallID=10, current_seq_num=0x0
*Mar  1 01:01:51.602:rtpspi_get_rtcp_session_parameters():NEW VALUES:
dstIF=0x1964EEC, dstCallID=10, current_seq_num=0xF1E
*Mar  1 01:01:51.602:rtpspi_caps_ind:Caps Used:codec=0x1, codec bytes=80,
       fax rate=0x1, vad=0x1, modem=0x1, dtmf_relay=0x1, seq_num_start=0xF1F
*Mar  1 01:01:51.602:rtpspi_caps_ind:calling cc_api_caps_ind().
*Mar  1 01:01:51.822:rtpspi_do_call_modify:Remote RTP port changed. New port=16498
*Mar  1 01:01:51.822:rtpspi_do_call_modify:Remote IP addrs changed. New IP addrs=0x6000001
*Mar  1 01:01:51.822:rtpspi_do_call_modify:Starting new RTCP session.
*Mar  1 01:01:51.822:rtpspi_start_rtcp_session:Removing old RTCP session.
```

```
*Mar  1 01:01:51.822:rtpspi_start_rtcp_session:Starting RTCP session.
        Local IP addr = 0x5000001, Remote IP addr = 0x6000001,
        Local RTP port = 16406, Remote RTP port = 16498, mode = 0x2
*Mar  1 01:01:51.822:rtpspi_start_rtcp_session:RTCP Timer creation Success. (5)*(5000)
*Mar  1 01:01:51.826:rtpspi_start_rtcp_session:RTP Session creation Success.
*Mar  1 01:01:51.826:rtpspi_do_call_modify:RTP Session creation Success.
*Mar  1 01:01:51.826:rtpspi_do_call_modify:Calling cc_api_call_modify(), result=0x0
*Mar  1 01:01:57.296:rtpspi_do_call_modify:Mode changed. new = 3, old = 2
*Mar  1 01:01:57.296:rtpspi_modify_rtcp_session_parameters():xmit fn=0xDA7494,
dstIF=0x1964EEC, dstCallID=10, voip_mode=0x3, rtp_mode=0x3, ssrc_status=2
*Mar  1 01:01:57.296:rtpspi_do_call_modify:RTCP Timer start.
*Mar  1 01:01:57.296:rtpspi_do_call_modify:Calling cc_api_call_modify(), result=0x0
*Mar  1 01:03:06.108:rtpspi_modify_rtcp_session_parameters():xmit fn=0x0,
dstIF=0x0, dstCallID=0, voip_mode=0x3, rtp_mode=0x3, ssrc_status=2
*Mar  1 01:03:06.112:rtpspi_do_call_disconnect:calling rtpspi_call_cleanup(). call-id=11
*Mar  1 01:03:06.112:rtpspi_call_cleanup:releasing ccb cache. RTP port=16406
*Mar  1 01:03:06.112:rtpspi_call_cleanup:RTCP Timer Stop.
*Mar  1 01:03:06.112:rtpspi_call_cleanup:deallocating RTP port 16406.
*Mar  1 01:03:06.112::rtpspi_call_cleanup freeing ccb (0x1AF5400)
```

Related Commands

Command	Description
debug rtpspi all	Debugs all RTP SPI errors, sessions, and in/out functions.
debug rtpspi errors	Debugs RTP SPI errors.
debug rtpspi inout	Debugs RTP SPI in/out functions.
debug rtpspi send-nse	Triggers the RTP SPI to send a triple redundant NSE.
debug sgcp errors	Debugs SGCP errors.
debug sgcp events	Debugs SGCP events.
debug sgcp packet	Debugs SGCP packets.
sgcp	Starts and allocates resources for the SCGP daemon.
debug vtsp send-nse	Sends and debugs a triple redundant NSE from the DSP to a remote gateway.

debug rtr error

Note Effective with Cisco IOS Release 12.2(31)SB2, the **debugrtrerror**command is replaced by the **debugipslamonitorerror**command. Effective with Cisco IOS Release 12.2(33)SRB, the **debugrtrerror**command is replaced by the **debugipslaerror**command. See the **debugipslamonitorerror** and **debugipslaerror** commands for more information.

To enable debugging output of Cisco IOS IP Service Level Agreements (SLAs) operation run-time errors, use the **debugrtrerror**command in privileged EXEC mode. To disable debugging output, use the **no**form of this command.

debug rtr error [*operation-number*]
no debug rtr error [*operation-number*]

Syntax Description

operation-number	(Optional) Identification number of the operation for which debugging output is to be enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.0(5)T	This command was modified.
12.3(14)T	This command was replaced by the **debugipslamonitorerror**command.
12.2(31)SB2	This command was replaced by the **debugipslamonitorerror**command.
12.2(33)SRB	This command was replaced by the **debugipslaerror**command.

Usage Guidelines

The **debugrtrerror**command displays run-time errors. When an operation number other than 0 is specified, all run-time errors for that operation are displayed when the operation is active. When the operation number is 0, all run-time errors relating to the IP SLAs scheduler process are displayed. When no operation number is specified, all run-time errors for all active operations configured on the router are displayed.

Note Use the **debugrtrerror**command before using the **debugrtrtrace** command because the **debugrtrerror**command generates a lesser amount of debugging output.

Examples

The following is sample output from the **debugrtrerror** command. The output indicates failure because the target is not there or because the responder is not enabled on the target. All debugging output for IP SLAs (including the output from the **debugrtrtrace** command) has the following format.

```
Router# debug rtr error
```

```
May  5 05:00:35.483: control message failure:1
May  5 05:01:35.003: control message failure:1
May  5 05:02:34.527: control message failure:1
May  5 05:03:34.039: control message failure:1
May  5 05:04:33.563: control message failure:1
May  5 05:05:33.099: control message failure:1
May  5 05:06:32.596: control message failure:1
May  5 05:07:32.119: control message failure:1
May  5 05:08:31.643: control message failure:1
May  5 05:09:31.167: control message failure:1
May  5 05:10:30.683: control message failure:1
```

The following table describes the significant fields shown in the display.

Table 7: debug rtr error Field Descriptions

Field	Description
RTR 1	Number of the operation generating the message.
Error Return Code	Message identifier indicating the error type (or error itself).
LU0 RTR Probe 1	Name of the process generating the message.
in echoTarget on call luReceive LuApiReturnCode of InvalidHandle - invalid host name or API handle	Supplemental messages that pertain to the message identifier.

Related Commands

Command	Description
debug rtr trace	Traces the execution of an IP SLAs operation.

debug rtr mpls-lsp-monitor

Note Effective with Cisco IOS Release 12.2(31)SB2, the **debug rtr mpls-lsp-monitor**command is replaced by the **debug ip sla monitor mpls-lsp-monitor**command. Effective with Cisco IOS Release 12.2(33)SRB, the **debug rtr mpls-lsp-monitor**command is replaced by the **debug ip sla mpls-lsp-monitor**command. See the **debug ip sla monitor mpls-lsp-monitor** and **debug ip sla mpls-lsp-monitor** commands for more information.

To enable debugging output for the IP Service Level Agreements (SLAs) label switched path (LSP) Health Monitor, use the **debug rtr mpls-lsp-monitor**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtr mpls-lsp-monitor [*operation-number*]
no debug rtr mpls-lsp-monitor [*operation-number*]

Syntax Description

operation-number	(Optional) Number of the LSP Health Monitor operation for which the debugging output will be displayed.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.2(27)SBC	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SB2	This command was replaced by the **debug ip sla monitor mpls-lsp-monitor**command.
12.2(33)SRB	This command was replaced by the **debug ip sla mpls-lsp-monitor**command.

Examples

The following is sample output from the **debug rtr mpls-lsp-monitor** command. This output shows that three VPNs associated with router 10.10.10.8 (red, blue, and green) were discovered and that this information was added to the LSP Health Monitor scan queue. Also, since router 10.10.10.8 is a newly discovered Border Gateway Protocol (BGP) next hop neighbor, a new IP SLAs operation for router 10.10.10.8 (Probe 100005) is being created and added to the LSP Health Monitor multioperation schedule. Even though router 10.10.10.8 belongs to three VPNs, only one IP SLAs operation is being created.

```
Router# debug rtr mpls-lsp-monitor
SAA MPLSLM debugging for all entries is on
*Aug 19 19:59: SAA MPLSLM(1):Next hop 10.10.10.8 added in AddQ
*Aug 19 19:59: SAA MPLSLM(1):Next hop 10.10.10.8 added in AddQ
*Aug 19 19:59: SAA MPLSLM(1):Next hop 10.10.10.8 added in AddQ
*Aug 19 19:59: SAA MPLSLM(1):Adding vrf red into tree entry 10.10.10.8
*Aug 19 19:59: SAA MPLSLM(1):Adding Probe 100005
*Aug 19 19:59: SAA MPLSLM(1):Adding ProbeID 100005 to tree entry 10.10.10.8 (1)
```

```
*Aug 19 19:59: SAA MPLSLM(1):Adding vrf blue into tree entry 10.10.10.8
*Aug 19 19:59: SAA MPLSLM(1):Duplicate in AddQ 10.10.10.8
*Aug 19 19:59: SAA MPLSLM(1):Adding vrf green into tree entry 10.10.10.8
*Aug 19 19:59: SAA MPLSLM(1):Duplicate in AddQ 10.10.10.8
*Aug 19 19:59: SAA MPLSLM(1):Added Probe(s) 100005 will be scheduled after 26 secs over
schedule period 60
```

Related Commands

Command	Description
rtr mpls-lsp-monitor	Begins configuration for an IP SLAs LSP Health Monitor operation and enters SAA MPLS configuration mode.

debug rtr trace

Note Effective with Cisco IOS Release 12.2(31)SB2, the **debug rtr trace**command is replaced by the **debug ip sla monitor trace**command. Effective with Cisco IOS Release 12.2(33)SRB, the **debug rtr trace**command is replaced by the **debug ip sla trace**command. See the **debug ip sla monitor trace** and **debug ip sla trace** commands for more information.

To trace the execution of a Cisco IOS IP Service Level Agreements (SLAs) operation, use the **debug rtr trace**command in privileged EXEC mode. To disable trace debugging output, use the **no**form of this command.

debug rtr trace [*operation-number*]
no debug rtr trace [*operation-number*]

Syntax Description

operation-number	(Optional) Identification number of the operation for which debugging output is to be enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.0(5)T	This command was modified.
12.3(14)T	This command was replaced by the **debug ip sla monitor trace**command.
12.2(31)SB2	This command was replaced by the **debug ip sla monitor trace**command.
12.2(33)SRB	This command was replaced by the **debug ip sla trace**command.

Usage Guidelines

When an operation number other than 0 is specified, execution for that operation is traced. When the operation number is 0, the IP SLAs scheduler process is traced. When no operation number is specified, all active operations are traced.

The **debug rtr trace** command also enables **debug rtr error** command for the specified operation. However, the **no debug rtr trace** command does not disable the **debug rtr error** command. You must manually disable the command by using the **no debug rtr error** command.

All debuggng output (including **debug rtr error** command output) has the format shown in the **debug rtr error** command output example.

Note The **debug rtr trace**command can generate a large number of debug messages. First use the **debug rtr error** command, and then use the **debug rtr trace** on a per-operation basis.

Examples

The following is sample output from the **debug rtr trace** command. In this example, an operation is traced through a single operation attempt: the setup of a connection to the target, and the attempt at an echo to calculate UDP packet response time.

```
Router# debug rtr trace
Router# RTR 1:Starting An Echo Operation - IP RTR Probe 1
May  5 05:25:08.584:rtt hash insert :3.0.0.3 3383
May  5 05:25:08.584:    source=3.0.0.3(3383)  dest-ip=5.0.0.1(9)
May  5 05:25:08.588:sending control msg:
May  5 05:25:08.588: Ver:1 ID:51 Len:52
May  5 05:25:08.592:cmd:command:RTT_CMD_UDP_PORT_ENABLE, ip:5.0.0.1, port:9, duration:5000
May  5 05:25:08.607:receiving reply
May  5 05:25:08.607: Ver:1 ID:51 Len:8
May  5 05:25:08.623:    local delta:8
May  5 05:25:08.627:    delta from responder:1
May  5 05:25:08.627:    received <16> bytes and      responseTime = 3 (ms)
May  5 05:25:08.631:rtt hash remove:3.0.0.3 3383RTR 1:Starting An Echo Operation - IP RTR
Probe 1
May  5 05:26:08.104:rtt hash insert :3.0.0.3 2974
May  5 05:26:08.104:    source=3.0.0.3(2974)  dest-ip=5.0.0.1(9)
May  5 05:26:08.108:sending control msg:
May  5 05:26:08.108: Ver:1 ID:52 Len:52
May  5 05:26:08.112:cmd:command:RTT_CMD_UDP_PORT_ENABLE, ip:5.0.0.1, port:9, duration:5000
May  5 05:26:08.127:receiving reply
May  5 05:26:08.127: Ver:1 ID:52 Len:8
May  5 05:26:08.143:    local delta:8
May  5 05:26:08.147:    delta from responder:1
May  5 05:26:08.147:    received <16> bytes and      responseTime = 3 (ms)
May  5 05:26:08.151:rtt hash remove:3.0.0.3 2974RTR 1:Starting An Echo Operation - IP RTR
Probe 1
```

Related Commands

Command	Description
debug rtr error	Enables debugging output of IP SLAs operation run-time errors.

debug rtsp

To show the status of the Real-Time Streaming Protocol (RTSP) client or server, use the **debug rtsp** command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp *type* [{**all** | **api** | **error** | **pmh** | **session** | **socket**}]
[**no**] **debug rtsp** *type* [{**all** | **api** | **pmh** | **session** | **socket**}]

Syntax Description

type	Type of debug messages to display. The keywords are as follows: • all--(Optional) Displays debug output for all clients or servers. • api--(Optional) Displays debug output for the client or server API. • error--(Optional) Displays errors when they are errors otherwise no output is displayed. • pmh--(Optional) Displays debug output for the Protocol Message Handler (PMH). • session--(Optional) Displays debug output for the client or server session. • socket--(Optional) Displays debug output for the client or server socket data.

Command Default

This command is disabled by default.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	The new debug header was added to the following Cisco routers: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660 series; on the following universal gateways: Cisco AS5350, Cisco AS5400, and Cisco AS5850; on the following access servers: Cisco AS5300, and Cisco AS5800; and, on the Cisco MC3810 multiservice access concentrators.

Examples

The following is sample output that displays when the **debug rtsp command is entered with the api**keyword:

```
Router# debug rtsp api
!
RTSP client API debugging is on
!
Jan  1 00:23:15.775:rtsp_api_create_session:sess_id=0x61A07C78,evh=0x60D6E62C
context=0x61A07B28
Jan  1 00:23:15.775:rtsp_api_request:msg=0x61C2B10C
Jan  1 00:23:15.775:rtsp_api_handle_req_set_params:msg=0x61C2B10C
Jan  1 00:23:15.775:rtsp_api_free_msg_buffer:msg=0x61C2B10C
Jan  1 00:23:15.775:rtsp_api_request:msg=0x61C293CC
Jan  1 00:23:15.775:rtsp_api_handle_req_set_params:msg=0x61C293CC
Jan  1 00:23:15.775:rtsp_api_free_msg_buffer:msg=0x61C293CC
Jan  1 00:23:15.775:rtsp_api_request:msg=0x61C2970C
```

```
Jan  1 00:23:15.775:rtsp_api_handle_req_set_params:msg=0x61C2970C
Jan  1 00:23:15.775:rtsp_api_free_msg_buffer:msg=0x61C2970C
!
Jan  1 00:23:15.775:rtsp_api_request:msg=0x61C29A4C
!
Jan  1 00:23:22.099:rtsp_api_free_msg_buffer:msg=0x61C29A4C
Jan  1 00:23:22.115:rtsp_api_request:msg=0x61C2A40C
Jan  1 00:23:22.115:rtsp_api_free_msg_buffer:msg=0x61C2A40C
```

Related Commands

Command	Description
debug rtsp api	Displays debug output for the RTSP client API.
debug rtsp client session	Displays debug output for the RTSP client data.
debug rtsp socket	Displays debug output for the RTSP client socket data.

debug rtsp all

To display all related information about the Real Time Streaming Protocol (RTSP) data, use the **debugrtspall**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp all
no debug rtsp all

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660, Cisco AS5350, Cisco AS5400, Cisco AS5850, Cisco AS5300, Cisco AS5800, and Cisco MC3810.

Usage Guidelines

We recommend that you log output from the **debugrtspall** command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Examples

The following example shows debugging output for the**debugrtspall**command. The **showdebug** command shows which RTSP modules are traced.

```
Router# debug rtsp all
All RTSP client debugging is on
Router# show debug
RTSP:
  RTSP client Protocol Error debugging is on
  RTSP client Protocol Message Handler debugging is on
  RTSP client API debugging is on
  RTSP client socket debugging is on
  RTSP client session debugging is on
Router#
Router#!call initiated
Router#
*Mar 11 03:14:23.471: //-1//RTSP:/rtsp_get_new_scb:
*Mar 11 03:14:23.471: //-1//RTSP:/rtsp_initialize_scb:
*Mar 11 03:14:23.471: //-1//RTSP:/rtsplib_init_svr_session: 0x63A5FE6C
*Mar 11 03:14:23.471: //-1//RTSP:/rtsp_api_create_session: evh=0x6155F0D4 context=0x6345042C
*Mar 11 03:14:23.471: //-1//RTSP:/rtsp_get_new_scb:
*Mar 11 03:14:23.471: //-1//RTSP:/rtsp_initialize_scb:
*Mar 11 03:14:23.471: //-1//RTSP:/rtsplib_init_svr_session: 0x63A5D874
*Mar 11 03:14:23.471: //-1//RTSP:/rtsp_api_create_session: evh=0x6155F204 context=0x6345046C
*Mar 11 03:14:23.471: //-1//RTSP:RS45:/rtsp_api_request: msg=0x63A59FB8
*Mar 11 03:14:23.471: //-1//RTSP:RS45:/rtsp_api_handle_req_set_params: msg=0x63A59FB8
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_free_msg_buffer: msg=0x63A59FB8
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_request: msg=0x63A5A304
```

```
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_handle_req_set_params: msg=0x63A5A304
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_free_msg_buffer: msg=0x63A5A304
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_request: msg=0x63A5A650
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_handle_req_set_params: msg=0x63A5A650
*Mar 11 03:14:23.475: //166//RTSP:LP:RS45:/rtsp_api_handle_req_set_params:
*Mar 11 03:14:23.475: //-1//RTSP:RS45:/rtsp_api_free_msg_buffer: msg=0x63A5A650
*Mar 11 03:14:23.475: //-1//RTSP:RS46:/rtsp_api_request: msg=0x63A5A99C
*Mar 11 03:14:23.475: //-1//RTSP:RS46:/rtsp_api_handle_req_set_params: msg=0x63A5A99C
*Mar 11 03:14:23.475: //166//RTSP:LP:RS46:/rtsp_api_handle_req_set_params:
*Mar 11 03:14:23.475: //-1//RTSP:RS46:/rtsp_api_free_msg_buffer: msg=0x63A5A99C
Router#
Router#!call answered
Router#
Router#!digits dialed
Router#
Router#!call terminated
Router#
*Mar 11 03:14:51.603: //-1//RTSP:RS45:/rtsp_api_request: msg=0x63A5ACE8
*Mar 11 03:14:51.603: //-1//RTSP:RS46:/rtsp_api_request: msg=0x63A5B034
*Mar 11 03:14:51.607: //-1//RTSP:RS45:/rtsp_control_process_msg:
*Mar 11 03:14:51.607: //166//RTSP:/rtsp_control_process_msg: received MSG request of TYPE
0
*Mar 11 03:14:51.607: //166//RTSP:/rtsp_set_event: api_req_msg_type=RTSP_API_REQ_DESTROY
*Mar 11 03:14:51.607: //166//RTSP:/rtsp_session_cleanup:
*Mar 11 03:14:51.607: //-1//RTSP:/rtsplib_free_svr_session:
*Mar 11 03:14:51.607: //-1//RTSP:/rtsplib_stop_timer: timer(0x638D5DDC) stops
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_create_session_history: scb=0x63A5FE6C, callID=0xA6
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_create_session_history: No streams in session control
 block
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_session_cleanup: deleting session: scb=0x63A5FE6C
*Mar 11 03:14:51.611: //-1//RTSP:RS45:/rtsp_api_free_msg_buffer: msg=0x63A5ACE8
*Mar 11 03:14:51.611: //-1//RTSP:RS46:/rtsp_control_process_msg:
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_control_process_msg: received MSG request of TYPE
0
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_set_event: api_req_msg_type=RTSP_API_REQ_DESTROY
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_session_cleanup:
*Mar 11 03:14:51.611: //-1//RTSP:/rtsplib_free_svr_session:
*Mar 11 03:14:51.611: //-1//RTSP:/rtsplib_stop_timer: timer(0x63A60110) stops
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_create_session_history: scb=0x63A5D874, callID=0xA6
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_create_session_history: No streams in session control
 block
*Mar 11 03:14:51.611: //166//RTSP:/rtsp_session_cleanup: deleting session: scb=0x63A5D874
*Mar 11 03:14:51.611: //-1//RTSP:RS46:/rtsp_api_free_msg_buffer: msg=0x63A5B034
```

The following table describes the significant fields shown in the display.

Table 8: debug rtsp all Field Descriptions

Field	Description
//-1/	Indicates that the CallEntry ID for the module is unavailable.
//166/	Identifies the CallEntry ID.
RTSP:	Identifies the RTSP module.
rtsp_*functionname*	Identifies the function name.

Related Commands

Command	Description
debug rtsp api	Displays debugging output for the RTSP client API.
debug rtsp error	Displays error message for RTSP data.
debug rtsp pmh	Displays debugging messages for the PMH.
debug rtsp socket	Displays debugging output for the RTSP client socket data.
voice call debug	Allows configuration of the voice call debugging output.

debug rtsp api

To display information about the Real Time Streaming Protocol (RTSP) application programming interface (API) messages passed down to the RTSP client, use the **debugrtspapi**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp api
no debug rtsp api

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660, Cisco AS5350, Cisco AS5400, Cisco AS5850, Cisco AS5300, Cisco AS5800, and Cisco MC3810.

Usage Guidelines

We recommend that you log output from the **debugrtspapi** command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Examples

The following example shows output from the**debugrtspapi**command:

```
Router# debug rtsp api
RTSP client API debugging is on
Router# !call initiated
*Mar 11 03:04:41.699: //-1//RTSP:/rtsp_api_create_session: evh=0x6155F0D4 context=0x6345088C
*Mar 11 03:04:41.699: //-1//RTSP:/rtsp_api_create_session: evh=0x6155F204 context=0x634508CC
*Mar 11 03:04:41.699: //-1//RTSP:RS35:/rtsp_api_request: msg=0x63A59FB8
*Mar 11 03:04:41.699: //-1//RTSP:RS35:/rtsp_api_handle_req_set_params: msg=0x63A59FB8
*Mar 11 03:04:41.699: //-1//RTSP:RS35:/rtsp_api_free_msg_buffer: msg=0x63A59FB8
*Mar 11 03:04:41.699: //-1//RTSP:RS35:/rtsp_api_request: msg=0x63A5A304
*Mar 11 03:04:41.699: //-1//RTSP:RS35:/rtsp_api_handle_req_set_params: msg=0x63A5A304
*Mar 11 03:04:41.699: //-1//RTSP:RS35:/rtsp_api_free_msg_buffer: msg=0x63A5A304
*Mar 11 03:04:41.703: //-1//RTSP:RS35:/rtsp_api_request: msg=0x63A5A650
*Mar 11 03:04:41.703: //-1//RTSP:RS35:/rtsp_api_handle_req_set_params: msg=0x63A5A650
*Mar 11 03:04:41.703: //146//RTSP:LP:RS35:/rtsp_api_handle_req_set_params:
*Mar 11 03:04:41.703: //-1//RTSP:RS35:/rtsp_api_free_msg_buffer: msg=0x63A5A650
*Mar 11 03:04:41.703: //-1//RTSP:RS36:/rtsp_api_request: msg=0x63A5A99C
*Mar 11 03:04:41.703: //-1//RTSP:RS36:/rtsp_api_handle_req_set_params: msg=0x63A5A99C
*Mar 11 03:04:41.703: //146//RTSP:LP:RS36:/rtsp_api_handle_req_set_params:
*Mar 11 03:04:41.703: //-1//RTSP:RS36:/rtsp_api_free_msg_buffer: msg=0x63A5A99C
Router!call answered
Router#!digits dialed
Router#!call terminated
*Mar 11 03:05:15.367: //-1//RTSP:RS35:/rtsp_api_request: msg=0x63A5ACE8
*Mar 11 03:05:15.367: //-1//RTSP:RS36:/rtsp_api_request: msg=0x63A5B034
*Mar 11 03:05:15.367: //-1//RTSP:RS35:/rtsp_api_free_msg_buffer: msg=0x63A5ACE8
*Mar 11 03:05:15.367: //-1//RTSP:RS36:/rtsp_api_free_msg_buffer: msg=0x63A5B034
```

The following table describes the significant fields shown in the display.

Table 9: debug rtsp api Field Descriptions

Field	Description
//-1/	Indicates that the CallEntry ID for the module is unavailable.
//146/	Identifies the CallEntry ID.
RTSP:	Identifies the RTSP module.
rtsp_*functionname*	Identifies the function name.

Related Commands

Command	Description
debug rtsp error	Displays error message for RTSP data.
debug rtsp pmh	Displays debugging messages for the PMH.
debug rtsp socket	Displays debugging output for the RTSP client socket data.
voice call debug	Allows configuration of the voice call debugging output.

debug rtsp client

Note Effective with Release 12.3(4), the **debug rtsp cleint** command is replaced by the **debug rtsp session** command. See the **debug rtsp session** command for more information.

To display client information and stream information for the stream that is currently active for the Real Time Streaming Protocol (RTSP) client, use the **debug rtsp client**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp client
no debug rtsp client

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.3(4)T	This command was replaced by the **debug rtsp session** command.

Usage Guidelines

We recommend that you log output from the **debug rtsp client** command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Related Commands

Command	Description
debug rtsp api	Displays debugging output for the RTSP client API.
debug rtsp error	Displays error message for RTSP data.
debug rtsp pmh	Displays debugging messages for the PMH.
debug rtsp socket	Displays debugging output for the RTSP client socket data.
voice call debug	Allows configuration of the voice call debugging output.

debug rtsp client session

Note Effective with Release 12.3(4), the **debug rtsp cleint session**command is replaced by the **debug rtsp session** command. See the **debug rtsp session** command for more information.

To display debug messages about the Real Time Streaming Protocol (RTSP) client or the current session, use the **debug rtsp**command. To disable debugging output, use the **no** form of this command.

debug rtsp [{**client** | **session**}]
no debug rtsp [{**client** | **session**}]

Syntax Description

client	(Optional) Displays client information and stream information for the stream that is currently active.
session	(Optional) Displays cumulative information about the session, packet statistics, and general call information such as call ID, session ID, individual RTSP stream URLs, packet statistics, and play duration.

Command Default

Debug is not enabled.

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.3(4)T	This command was replaced by the **debug rtsp session** command.

Examples

The following example displays the debug messages of the RTSP session:

```
Router# debug rtsp session
RTSP client session debugging is on
router#
Jan  1 00:08:36.099:rtsp_get_new_scb:
Jan  1 00:08:36.099:rtsp_initialize_scb:
Jan  1 00:08:36.099:rtsp_control_process_msg:
Jan  1 00:08:36.099:rtsp_control_process_msg:received MSG request of TYPE 0
Jan  1 00:08:36.099:rtsp_set_event:
Jan  1 00:08:36.099:rtsp_set_event:api_req_msg_type=RTSP_API_REQ_PLAY
Jan  1 00:08:36.103:rtsp_set_event:url:[rtsp://rtsp-cisco.cisco.com:554/en_welcome.au]
Jan  1 00:08:36.103:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:36.103:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_IDLE
                    rtsp_event = RTSP_EV_PLAY_OR_REC
Jan  1 00:08:36.103:act_idle_event_play_or_rec_req:
Jan  1 00:08:36.103:rtsp_resolve_dns:
Jan  1 00:08:36.103:rtsp_resolve_dns:IP Addr = 1.13.79.6:
Jan  1 00:08:36.103:rtsp_connect_to_svr:
Jan  1 00:08:36.103:rtsp_connect_to_svr:socket=0, connection_state = 2
Jan  1 00:08:36.103:rtsp_start_timer:timer (0x62128FD0)starts - delay (10000)
Jan  1 00:08:36.107:rtsp_control_main:SOCK= 0 Event=0x1
Jan  1 00:08:36.107:rtsp_stop_timer:timer(0x62128FD0) stops
Jan  1 00:08:36.107:rtsp_process_async_event:SCB=0x62128F08
```

```
Jan  1 00:08:36.107:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_IDLE
                    rtsp_event = RTSP_EV_SVR_CONNECTED
Jan  1 00:08:36.107:act_idle_event_svr_connected:
Jan  1 00:08:36.107:rtsp_control_main:SOCK= 0 Event=0x1
Jan  1 00:08:36.783:rtsp_control_main:SOCK= 0 Event=0x1
Jan  1 00:08:36.783:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:36.783:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_READY
                    rtsp_event = RTSP_EV_SVR_DESC_OR_ANNOUNCE_RESP
Jan  1 00:08:36.783:act_ready_event_desc_or_announce_resp:
Jan  1 00:08:36.783:act_ready_event_desc_or_announce_resp:RTSP_STATUS_DESC_OR_ANNOUNCE_RESP_OK
Jan  1 00:08:37.287:rtsp_control_main:SOCK= 0 Event=0x1
Jan  1 00:08:37.287:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:37.287:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_READY
                    rtsp_event = RTSP_EV_SVR_SETUP_RESP
Jan  1 00:08:37.287:act_ready_event_setup_resp:
Jan  1 00:08:37.287:act_ready_event_setup_resp:Remote RTP Port=13344
Jan  1 00:08:37.287:rtsp_rtp_stream_setup:scb=0x62128F08, callID=0x7 record=0
Jan  1 00:08:37.287:rtsp_rtp_stream_setup:Starting RTCP session.
       Local IP addr = 1.13.79.45, Remote IP addr = 1.13.79.6,
       Local RTP port = 18748, Remote RTP port = 13344 CallID=8
Jan  1 00:08:37.291:xmit_func = 0x0 vdbptr = 0x61A0FC98
Jan  1 00:08:37.291:rtsp_control_main:CCAPI Queue Event
Jan  1 00:08:37.291:rtsp_rtp_associate_done:ev=0x62070E08, callID=0x7
Jan  1 00:08:37.291:rtsp_rtp_associate_done:scb=0x62128F08
Jan  1 00:08:37.291:rtsp_rtp_associate_done:callID=0x7, pVdb=0x61F4FBC8,
Jan  1 00:08:37.291:                  spi_context=0x6214145C
Jan  1 00:08:37.291:                  disposition=0, playFunc=0x60CA2238,
Jan  1 00:08:37.291:                  codec=0x5, vad=0, mediaType=6,
Jan  1 00:08:37.291:                  stream_assoc_id=1
Jan  1 00:08:37.291:rtsp_rtp_modify_session:scb=0x62128F08, callID=0x7
Jan  1 00:08:37.291:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:37.291:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_READY
                    rtsp_event = RTSP_EV_ASSOCIATE_DONE
Jan  1 00:08:37.291:act_ready_event_associate_done:
Jan  1 00:08:37.291:rtsp_get_stream:
Jan  1 00:08:37.783:rtsp_control_main:SOCK= 0 Event=0x1
Jan  1 00:08:37.783:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:37.783:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_READY
                    rtsp_event = RTSP_EV_SVR_PLAY_OR_REC_RESP
Jan  1 00:08:37.783:act_ready_event_play_or_rec_resp:
Jan  1 00:08:37.783:rtsp_start_timer:timer (0x62128FB0)starts - delay (4249)
rtsp-5#
Jan  1 00:08:42.035:rtsp_process_timer_events:
Jan  1 00:08:42.035:rtsp_process_timer_events:PLAY OR RECORD completed
Jan  1 00:08:42.035:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:42.035:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_PLAY_OR_REC
                    rtsp_event = RTSP_EV_PLAY_OR_REC_TIMER_EXPIRED
Jan  1 00:08:42.035:act_play_event_play_done:
Jan  1 00:08:42.035:act_play_event_play_done:elapsed play time = 4249 total play time =
4249
Jan  1 00:08:42.035:rtsp_send_teardown_to_svr:
Jan  1 00:08:42.487:rtsp_control_main:SOCK= 0 Event=0x1
Jan  1 00:08:42.487:rtsp_process_async_event:SCB=0x62128F08
Jan  1 00:08:42.487:rtsp_process_async_event:rtsp_state = RTSP_SES_STATE_PLAY_OR_REC
                    rtsp_event = RTSP_EV_SVR_TEARDOWN_RESP
Jan  1 00:08:42.487:act_play_event_teardown_resp:
Jan  1 00:08:42.487:rtsp_server_closed:
Jan  1 00:08:42.487:rtsp_send_resp_to_api:
Jan  1 00:08:42.487:rtsp_send_resp_to_api:sending RESP=RTSP_STATUS_PLAY_COMPLETE
Jan  1 00:08:42.491:rtsp_rtp_teardown_stream:scb=0x62128F08, callID=0x7
Jan  1 00:08:42.491:rtsp_rtp_stream_cleanup:scb=0x62128F08, callID=0x7
Jan  1 00:08:42.491:rtsp_update_stream_stats:scb=0x62128F08, stream=0x61A43350,
Jan  1 00:08:42.491:call_info=0x6214C67C, callID=0x7
Jan  1 00:08:42.491:rtsp_update_stream_stats:rx_bytes = 25992
```

```
Jan  1 00:08:42.491:rtsp_update_stream_stats:rx_packetes = 82
Jan  1 00:08:42.491:rtsp_reinitialize_scb:
Jan  1 00:08:42.503:rtsp_control_process_msg:
Jan  1 00:08:42.503:rtsp_control_process_msg:received MSG request of TYPE 0
Jan  1 00:08:42.503:rtsp_set_event:
Jan  1 00:08:42.503:rtsp_set_event:api_req_msg_type=RTSP_API_REQ_DESTROY
Jan  1 00:08:42.503:rtsp_session_cleanup:
Jan  1 00:08:42.503:rtsp_create_session_history:scb=0x62128F08, callID=0x7
Jan  1 00:08:42.503:rtsp_insert_session_history_record:current=0x6214BDC8, callID=0x7
Jan  1 00:08:42.503:rtsp_insert_session_history_record:count = 3
Jan  1 00:08:42.503:rtsp_insert_session_history_record:starting history record deletion_timer
 of10 minutes
Jan  1 00:08:42.503:rtsp_session_cleanup:deleting session:scb=0x62128F08
Router#
```

Related Commands

Command	Description
debug rtsp all	Displays debugging output for the RTSP client API.
debug rtsp pmh	Displays debugging messages for the PMH.
debug rtsp socket	Displays debugging output for the RTSP client socket data.

debug rtsp error

To display error information about the Real-Time Streaming Protocol (RTSP) client, use the **debug rtsp error**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp error
no debug rtsp error

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660, Cisco AS5350, Cisco AS5400, Cisco AS5850, Cisco AS5300, Cisco AS5800, and Cisco MC3810.

Usage Guidelines

We recommend that you log output from the **debug rtsp error**command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Related Commands

Command	Description
debug rtsp api	Displays debugging output for the RTSP client API.
debug rtsp pmh	Displays debugging messages for the PMH.
debug rtsp socket	Displays debugging output for the RTSP client socket data.
voice call debug	Allows configuration of the voice call debugging output.

debug rtsp pmh

To display debugging information about the Protocol Message Handler (PMH), use the **debug rtsp pmh**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp pmh
no debug rtsp pmh

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660, Cisco AS5350, Cisco AS5400, Cisco AS5850, Cisco AS5300, Cisco AS5800, and Cisco MC3810.

Usage Guidelines

We recommend that you log output from the **debug rtsp pmh** command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Related Commands

Command	Description
debug rtsp api	Displays debugging output for the RTSP client API.
debug rtsp error	Displays error message for RTSP data.
debug rtsp socket	Displays debugging output for the RTSP client socket data.
voice call debug	Allows configuration of the voice call debugging output.

debug rtsp session

To display client information and stream information for the stream that is currently active for the Real Time Streaming Protocol (RTSP) client, use the **debugrtspsession**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp session
no debug rtsp session

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660, Cisco AS5350, Cisco AS5400, Cisco AS5850, Cisco AS5300, Cisco AS5800, and Cisco MC3810.
12.3(4)T	This command replaces the **debugrtspclient** command and the **debugrtspclientsession** command.

Usage Guidelines

We recommend that you log output from the **debugrtspsession** command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Examples

The following example shows the display of the debugging messages of the RTSP session:

```
Router# debug rtsp session
RTSP client session debugging is on
Router#
Router#!call initiated
Router#
*Mar 11 03:09:58.123: //-1//RTSP:/rtsp_get_new_scb:
*Mar 11 03:09:58.123: //-1//RTSP:/rtsp_initialize_scb:
*Mar 11 03:09:58.123: //-1//RTSP:/rtsplib_init_svr_session: 0x63A5FE6C
*Mar 11 03:09:58.123: //-1//RTSP:/rtsp_get_new_scb:
*Mar 11 03:09:58.123: //-1//RTSP:/rtsp_initialize_scb:
*Mar 11 03:09:58.123: //-1//RTSP:/rtsplib_init_svr_session: 0x63A5D874
Router#
Router#!call answered
Router#
Router#!digits dialed
Router#
Router#!call terminated
Router#
*Mar 11 03:10:38.139: //-1//RTSP:RS41:/rtsp_control_process_msg:
*Mar 11 03:10:38.139: //158//RTSP:/rtsp_control_process_msg: received MSG request of TYPE
0
*Mar 11 03:10:38.139: //158//RTSP:/rtsp_set_event: api_req_msg_type=RTSP_API_REQ_DESTROY
*Mar 11 03:10:38.139: //158//RTSP:/rtsp_session_cleanup:
```

```
*Mar 11 03:10:38.139: //-1//RTSP:/rtsplib_free_svr_session:
*Mar 11 03:10:38.139: //-1//RTSP:/rtsplib_stop_timer: timer(0x638D5DDC) stops
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_create_session_history: scb=0x63A5FE6C, callID=0x9E
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_create_session_history: No streams in session control
 block
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_session_cleanup: deleting session: scb=0x63A5FE6C
*Mar 11 03:10:38.143: //-1//RTSP:RS42:/rtsp_control_process_msg:
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_control_process_msg: received MSG request of TYPE
0
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_set_event: api_req_msg_type=RTSP_API_REQ_DESTROY
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_session_cleanup:
*Mar 11 03:10:38.143: //-1//RTSP:/rtsplib_free_svr_session:
*Mar 11 03:10:38.143: //-1//RTSP:/rtsplib_stop_timer: timer(0x63A60110) stops
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_create_session_history: scb=0x63A5D874, callID=0x9E
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_create_session_history: No streams in session control
 block
*Mar 11 03:10:38.143: //158//RTSP:/rtsp_session_cleanup: deleting session: scb=0x63A5D874
```

The following table describes the significant fields shown in the display.

Table 10: debug rtsp session Field Descriptions

Field	Description
//-1/	Indicates that the CallEntry ID for the module is unavailable.
//158/	Identifies the CallEntry ID.
RTSP:	Identifies the RTSP module.
rtsp_*functionname*	Identifies the function name.

Related Commands

Command	Description
debug rtsp api	Displays debugging output for the RTSP client API.
debug rtsp error	Displays error message for RTSP data.
debug rtsp pmh	Displays debugging messages for the PMH.
debug rtsp socket	Displays debugging output for the RTSP client socket data.
voice call debug	Allows configuration of the voice call debugging output.

debug rtsp socket

To display debugging messages about the packets received or sent on the TCP or User Datagram Protocol (UDP) sockets, use the **debug rtsp socket**command in privileged EXEC mode. To disable debugging output, use the **no** form of this command.

debug rtsp socket
no debug rtsp socket

Syntax Description

This command has no arguments or keywords.

Command Default

Debug is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(3)T	This command was introduced.
12.2(11)T	This command was implemented on the following platforms: Cisco 2600 series, Cisco 3620, Cisco 3640, and Cisco 3660, Cisco AS5350, Cisco AS5400, Cisco AS5850, Cisco AS5300, Cisco AS5800, and Cisco MC3810.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.

Usage Guidelines

Each Real-Time Streaming Protocol (RTSP) session has a TCP port for control and a UDP (RTP) port for delivery of data. The control connection (TCP socket) is used to exchange a set of messages (request from the RTSP client and the response from the server) for displaying a prompt. The **debug rtsp socket** command enables the user to debug the message exchanges being done on the TCP control connection.

Note We recommend that you log output from the **debug rtsp socket** command to a buffer rather than sending the output to the console; otherwise, the size of the output could severely impact the performance of the gateway.

Related Commands

Command	Description
debug rtsp api	Displays debugging output for the RTSP client API.
debug rtsp error	Displays error message for RTSP data.
debug rtsp pmh	Displays debugging messages for the PMH.
voice call debug	Allows configuration of the voice call debugging output.

debug rudpv1

For debug information for Reliable User Datagram Protocol (RUDP), use the **debug rudpv1** command in privileged EXEC mode. To disable debugging output, use the **no**form of this command.

debug rudpv1 {**application** | **performance** | **retransmit** | **segment** | **signal** | **state** | **timer** | **transfer**}
no debug rudpv1 {**application** | **performance** | **retransmit** | **segment** | **signal** | **state** | **timer** | **transfer**}

Syntax Description

application	Application debugging.
performance	Performance debugging.
retransmit	Retransmit/soft reset debugging.
segment	Segment debugging.
signal	Signals sent to applications.
state	State transitions.
timer	Timer debugging.
transfer	Transfer state information.

Command Default

Debugging for rudpv1 is not enabled.

Command Modes

Privileged EXEC

Command History

Release	Modification
12.1(1)T	This command was introduced.
12.2(4)T	This command was implemented on the Cisco 2600 series, Cisco 3600 series, and Cisco MC3810.
12.2(2)XB	This command was implemented on the Cisco AS5350 and Cisco AS5400 universal gateways.
12.2(2)XB1	This command was implemented on the Cisco AS5850 platform.
12.2(8)T	This command was implemented on Cisco IAD2420 series integrated access devices (IADs).
12.2(11)T	This command was implemented on the Cisco AS5350, Cisco AS5400, and Cisco AS5850 platforms.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.

Usage Guidelines

Use this command only during times of low traffic.

Examples

The following is sample output from the **debug rudpv1 application** command:

```
Router# debug rudpv1 application
Rudpv1:Turning application debugging on
*Jan  1 00:20:38.271:Send to appl (61F72B6C), seq 12
*Jan  1 00:20:48.271:Send to appl (61F72B6C), seq 13
*Jan  1 00:20:58.271:Send to appl (61F72B6C), seq 14
*Jan  1 00:21:08.271:Send to appl (61F72B6C), seq 15
*Jan  1 00:21:18.271:Send to appl (61F72B6C), seq 16
*Jan  1 00:21:28.271:Send to appl (61F72B6C), seq 17
*Jan  1 00:21:38.271:Send to appl (61F72B6C), seq 18
*Jan  1 00:21:48.275:Send to appl (61F72B6C), seq 19
*Jan  1 00:21:58.275:Send to appl (61F72B6C), seq 20
*Jan  1 00:22:08.275:Send to appl (61F72B6C), seq 21
*Jan  1 00:22:18.275:Send to appl (61F72B6C), seq 22
*Jan  1 00:22:28.275:Send to appl (61F72B6C), seq 23
*Jan  1 00:22:38.275:Send to appl (61F72B6C), seq 24
*Jan  1 00:22:48.279:Send to appl (61F72B6C), seq 25
*Jan  1 00:22:58.279:Send to appl (61F72B6C), seq 26
*Jan  1 00:23:08.279:Send to appl (61F72B6C), seq 27
*Jan  1 00:23:18.279:Send to appl (61F72B6C), seq 28
*Jan  1 00:23:28.279:Send to appl (61F72B6C), seq 29
```

The following is sample output from the **debug rudpv1 performance** command:

```
Router# debug rudpv1 performance
Rudpv1:Turning performance debugging on
corsair-f#
*Jan  1 00:44:27.299:
*Jan  1 00:44:27.299:Rudpv1 Sent:Pkts 11,  Data Bytes 236,  Data Pkts 9
*Jan  1 00:44:27.299:Rudpv1 Rcvd:Pkts 10,  Data Bytes 237,  Data Pkts 9
*Jan  1 00:44:27.299:Rudpv1 Discarded:0,  Retransmitted 0
*Jan  1 00:44:27.299:
*Jan  1 00:44:37.299:
*Jan  1 00:44:37.299:Rudpv1 Sent:Pkts 11,  Data Bytes 236,  Data Pkts 9
*Jan  1 00:44:37.299:Rudpv1 Rcvd:Pkts 10,  Data Bytes 237,  Data Pkts 9
*Jan  1 00:44:37.299:Rudpv1 Discarded:0,  Retransmitted 0
*Jan  1 00:44:37.299:
*Jan  1 00:44:47.299:
*Jan  1 00:44:47.299:Rudpv1 Sent:Pkts 11,  Data Bytes 236,  Data Pkts 9
*Jan  1 00:44:47.299:Rudpv1 Rcvd:Pkts 11,  Data Bytes 236,  Data Pkts 9
*Jan  1 00:44:47.299:Rudpv1 Discarded:0,  Retransmitted 0
*Jan  1 00:44:47.299:
```

The following is sample output from the **debug rudpv1 retransmit** command:

```
Router# debug rudpv1 retransmit
Rudpv1:Turning retransmit/softreset debugging on
*Jan  1 00:52:59.799:Retrans timer, set to ack 199
*Jan  1 00:52:59.903:Retrans timer, set to ack 200
*Jan  1 00:53:00.003:Retrans timer, set to ack 201
*Jan  1 00:53:00.103:Retrans timer, set to ack 202
*Jan  1 00:53:00.203:Retrans timer, set to ack 203
*Jan  1 00:53:00.419:Retrans timer, set to ack 97
*Jan  1 00:53:00.503:Retrans handler fired, 203
*Jan  1 00:53:00.503:Retrans:203:205:
*Jan  1 00:53:00.503:
*Jan  1 00:53:00.607:Retrans timer, set to ack 207
*Jan  1 00:53:00.907:Retrans timer, set to ack 210
*Jan  1 00:53:01.207:Retrans handler fired, 210
*Jan  1 00:53:01.207:Retrans:210:211:212:
*Jan  1 00:53:01.207:
*Jan  1 00:53:01.207:Retrans timer, set to ack 213
*Jan  1 00:53:01.311:Retrans timer, set to ack 214
```

```
*Jan  1 00:53:01.419:Retrans timer, set to ack 98
*Jan  1 00:53:01.611:Retrans timer, set to ack 215
*Jan  1 00:53:01.711:Retrans timer, set to ack 218
*Jan  1 00:53:01.811:Retrans timer, set to ack 219
*Jan  1 00:53:01.911:Retrans timer, set to ack 220
*Jan  1 00:53:02.011:Retrans timer, set to ack 221
*Jan  1 00:53:02.311:Retrans handler fired, 221
*Jan  1 00:53:02.311:Retrans:221:
*Jan  1 00:53:02.311:
*Jan  1 00:53:02.311:Retrans timer, set to ack 222
*Jan  1 00:53:02.415:Retrans timer, set to ack 225
```

The following is sample output from the **debug rudpv1 segment** command:

```
Router# debug rudpv1 segment
Rudpv1:Turning segment debugging on
*Jan  1 00:41:36.359:Rudpv1: (61F72DAC) Rcvd ACK 61..198 (32)
*Jan  1 00:41:36.359:Rudpv1: (61F72DAC) Send ACK 199..61 (32)
*Jan  1 00:41:36.459:Rudpv1: (61F72DAC) Rcvd ACK 62..199 (8)
*Jan  1 00:41:36.459:Rudpv1: (61F72DAC) Rcvd ACK 62..199 (32)
*Jan  1 00:41:36.459:Rudpv1: (61F72DAC) Send ACK 200..62 (32)
*Jan  1 00:41:36.559:Rudpv1: (61F72DAC) Rcvd ACK 63..200 (32)
*Jan  1 00:41:36.559:Rudpv1: (61F72DAC) Send ACK 201..63 (32)
*Jan  1 00:41:36.659:Rudpv1: (61F72DAC) Rcvd ACK 64..201 (32)
*Jan  1 00:41:36.659:Rudpv1: (61F72DAC) Send ACK 202..64 (32)
*Jan  1 00:41:36.759:Rudpv1: (61F72DAC) Rcvd ACK 65..202 (32)
*Jan  1 00:41:36.759:Rudpv1: (61F72DAC) Send ACK 203..65 (32)
*Jan  1 00:41:36.859:Rudpv1: (61F72DAC) Rcvd ACK 66..202 (32)
*Jan  1 00:41:36.859:Rudpv1: (61F72DAC) Send ACK 204..66 (32)
*Jan  1 00:41:36.959:Rudpv1: (61F72DAC) Rcvd ACK 67..202 (32)
*Jan  1 00:41:36.959:Rudpv1: (61F72DAC) Rcvd ACK EAK 68..202 (9)
*Jan  1 00:41:36.959:Rudpv1: (61F72DAC) Send ACK 203..67 (32)
*Jan  1 00:41:36.963:Rudpv1: (61F72DAC) Send ACK 205..67 (32)
*Jan  1 00:41:36.963:Rudpv1: (61F72DAC) Rcvd ACK 68..204 (8)
*Jan  1 00:41:37.051:Rudpv1: (61F72B6C) Send ACK NUL 118..96 (8)
*Jan  1 00:41:37.051:Rudpv1: (61F72B6C) Rcvd ACK 97..118 (8)
*Jan  1 00:41:37.059:Rudpv1: (61F72DAC) Rcvd ACK 68..205 (32)
*Jan  1 00:41:37.063:Rudpv1: (61F72DAC) Send ACK 206..68 (32)
*Jan  1 00:41:37.263:Rudpv1: (61F72DAC) Rcvd ACK 70..206 (32)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Send ACK EAK 207..68 (9)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Rcvd ACK 71..206 (32)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Rcvd ACK 69..206 (32)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Send ACK 207..71 (8)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Send ACK 207..71 (32)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Send ACK 208..71 (32)
*Jan  1 00:41:37.363:Rudpv1: (61F72DAC) Send ACK 209..71 (32)
*Jan  1 00:41:37.367:Rudpv1: (61F72DAC) Rcvd ACK 72..209 (8)
*Jan  1 00:41:37.463:Rudpv1: (61F72DAC) Rcvd ACK 72..209 (32)
*Jan  1 00:41:37.463:Rudpv1: (61F72DAC) Send ACK 210..72 (32)
*Jan  1 00:41:37.563:Rudpv1: (61F72DAC) Rcvd ACK 73..210 (32)
*Jan  1 00:41:37.563:Rudpv1: (61F72DAC) Send ACK 211..73 (32)
```

The following is sample output from the **debug rudpv1 signal** command:

```
Router# debug rudpv1 signal
Rudpv1:Turning signal debugging on
*Jan  1 00:39:59.551:Rudpv1:Sent CONN_FAILED to connID 61F72DAC, sess 33
*Jan  1 00:39:59.551:
*Jan  1 00:39:59.551:Rudpv1:Sent CONN_TRANS_STATE to connID 61F72B6C, sess 34
*Jan  1 00:39:59.551:
*Jan  1 00:39:59.551:Rudpv1:Sent CONN_TRANS_STATE to connID 61F72DAC, sess 33
*Jan  1 00:39:59.551:
*Jan  1 00:39:59.551:Rudpv1:Sent CONN_OPEN to connID 61F72B6C, sess 34
```

```
*Jan  1 00:39:59.551:Rudpv1:Sent AUTO_RESET to connID 61F72DAC, sess 33
*Jan  1 00:39:59.551:
*Jan  1 00:40:00.739:%LINK-5-CHANGED:Interface FastEthernet0, changed state
to administratively down
*Jan  1 00:40:01.739:%LINEPROTO-5-UPDOWN:Line protocol on Interface
FastEthernet0, changed state to down
*Jan  1 00:40:04.551:Rudpv1:Sent CONN_RESET to connID 61F72DAC, sess 33
*Jan  1 00:40:04.551:
*Jan  1 00:40:05.051:Rudpv1:Clearing conn rec values, index 2, connid
61F72DAC
*Jan  1 00:40:10.051:Rudpv1:Sent CONN_RESET to connID 61F72DAC, sess 33
*Jan  1 00:40:10.051:
*Jan  1 00:40:10.551:Rudpv1:Clearing conn rec values, index 2, connid
61F72DAC
*Jan  1 00:40:15.551:Rudpv1:Sent CONN_RESET to connID 61F72DAC, sess 33
*Jan  1 00:40:15.551:
*Jan  1 00:40:16.051:Rudpv1:Clearing conn rec values, index 2, connid
61F72DAC
*Jan  1 00:40:21.051:Rudpv1:Sent CONN_RESET to connID 61F72DAC, sess 33
*Jan  1 00:40:21.051:
*Jan  1 00:40:21.551:Rudpv1:Clearing conn rec values, index 2, connid
61F72DAC
*Jan  1 00:40:25.587:%LINK-3-UPDOWN:Interface FastEthernet0, changed state
to up
*Jan  1 00:40:26.551:Rudpv1:Sent CONN_RESET to connID 61F72DAC, sess 33
*Jan  1 00:40:26.551:
*Jan  1 00:40:26.587:%LINEPROTO-5-UPDOWN:Line protocol on Interface
FastEthernet0, changed state to up
*Jan  1 00:40:27.051:Rudpv1:Clearing conn rec values, index 2, connid
61F72DAC
*Jan  1 00:40:28.051:Rudpv1:Sent CONN_OPEN to connID 61F72DAC, sess 33
```

The following is sample output from the **debug rudpv1 state** command:

```
Router# debug rudpv1 state
Rudpv1:Turning state debugging on
*Jan  1 00:38:37.323:Rudpv1: (61F72DAC) State Change:OPEN -> CONN_FAILURE
*Jan  1 00:38:37.323:Rudpv1: (61F72B6C) State Change:OPEN -> TRANS_STATE
*Jan  1 00:38:37.323:Rudpv1: (61F72DAC) State Change:CONN_FAILURE ->
TRANS_STATE
*Jan  1 00:38:37.323:Rudpv1: (61F72B6C) State Change:TRANS_STATE -> OPEN
*Jan  1 00:38:37.323:Rudpv1: (61F72DAC) State Change:TRANS_STATE -> SYN_SENT
*Jan  1 00:38:37.455:%LINK-5-CHANGED:Interface FastEthernet0, changed state
to administratively down
*Jan  1 00:38:38.451:%LINEPROTO-5-UPDOWN:Line protocol on Interface
FastEthernet0, changed state to down
*Jan  1 00:38:42.323:Rudpv1: (61F72DAC) State Change:SYN_SENT -> CLOSED
*Jan  1 00:38:42.823:Rudpv1: (61F72DAC) State Change:INACTIVE -> SYN_SENT
*Jan  1 00:38:47.823:Rudpv1: (61F72DAC) State Change:SYN_SENT -> CLOSED
*Jan  1 00:38:48.323:Rudpv1: (61F72DAC) State Change:INACTIVE -> SYN_SENT
*Jan  1 00:38:53.323:Rudpv1: (61F72DAC) State Change:SYN_SENT -> CLOSED
*Jan  1 00:38:53.823:Rudpv1: (61F72DAC) State Change:INACTIVE -> SYN_SENT
*Jan  1 00:38:56.411:%LINK-3-UPDOWN:Interface FastEthernet0, changed state
to up
*Jan  1 00:38:57.411:%LINEPROTO-5-UPDOWN:Line protocol on Interface
FastEthernet0, changed state to up
*Jan  1 00:38:57.823:Rudpv1: (61F72DAC) State Change:SYN_SENT -> OPEN
```

The following is sample output from the **debug rudpv1 timer** command:

```
Router# debug rudpv1 timer
Rudpv1:Turning timer debugging on
*Jan  1 00:53:40.647:Starting Retrans timer for connP = 61F72B6C, delay = 300
```

```
*Jan  1 00:53:40.647:Stopping SentList timer for connP = 61F72B6C
*Jan  1 00:53:40.747:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:40.747:Stopping Retrans timer for connP = 61F72B6C
*Jan  1 00:53:40.747:Starting Retrans timer for connP = 61F72B6C, delay = 300
*Jan  1 00:53:40.747:Stopping SentList timer for connP = 61F72B6C
*Jan  1 00:53:40.847:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:40.847:Stopping Retrans timer for connP = 61F72B6C
*Jan  1 00:53:40.847:Starting Retrans timer for connP = 61F72B6C, delay = 300
*Jan  1 00:53:40.847:Stopping SentList timer for connP = 61F72B6C
*Jan  1 00:53:40.947:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:40.947:Stopping Retrans timer for connP = 61F72B6C
*Jan  1 00:53:40.947:Starting Retrans timer for connP = 61F72B6C, delay = 300
*Jan  1 00:53:40.947:Stopping SentList timer for connP = 61F72B6C
*Jan  1 00:53:41.047:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.147:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.151:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.151:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.151:Stopping Retrans timer for connP = 61F72B6C
*Jan  1 00:53:41.151:Starting SentList timer for connP = 61F72B6C, delay = 300
*Jan  1 00:53:41.419:Timer Keepalive (NullSeg) triggered for conn = 61F72DAC
*Jan  1 00:53:41.419:Starting Retrans timer for connP = 61F72DAC, delay = 300
*Jan  1 00:53:41.419:Stopping SentList timer for connP = 61F72DAC
*Jan  1 00:53:41.419:Starting NullSeg timer for connP = 61F72DAC, delay = 1000
*Jan  1 00:53:41.419:Stopping Retrans timer for connP = 61F72DAC
*Jan  1 00:53:41.451:Timer SentList triggered for conn = 61F72B6C
*Jan  1 00:53:41.451:Starting SentList timer for connP = 61F72B6C, delay = 300
*Jan  1 00:53:41.451:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.451:Stopping SentList timer for connP = 61F72B6C
*Jan  1 00:53:41.551:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.551:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.551:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
*Jan  1 00:53:41.551:Starting NullSeg timer for connP = 61F72B6C, delay = 1000
```

The following is sample output from the **debug rudpv1 transfer** command:

```
Router# debug rudpv1 transfer
Rudpv1:Turning transfer debugging on
*Jan  1 00:37:30.567:Rudpv1:Send TCS, connId 61F72B6C, old connId 61F72DAC
*Jan  1 00:37:30.567:Rudpv1:Initiate transfer state, old conn 61F72DAC to
new conn 61F72B6C
*Jan  1 00:37:30.567:Rudpv1:Old conn send window 51 .. 52
*Jan  1 00:37:30.567:Rudpv1:New conn send window 255 .. 2
*Jan  1 00:37:30.567:Rudpv1:Rcvd TCS 142, next seq 142
*Jan  1 00:37:30.567:Rudpv1:Rcv'ing trans state, old conn 61F72DAC to new
conn 61F72B6C
*Jan  1 00:37:30.567:Rudpv1:Seq adjust factor 148
*Jan  1 00:37:30.567:Rudpv1:New rcvCur 142
*Jan  1 00:37:30.567:Rudpv1:Send transfer state, old conn 61F72DAC to new
conn 61F72B6C
*Jan  1 00:37:30.567:Rudpv1:Send TCS, connId 61F72B6C, old connId 61F72DAC,
seq adjust 208, indication 0
*Jan  1 00:37:30.567:Rudpv1:Transfer seg 51 to seg 3 on new conn
*Jan  1 00:37:30.567:Rudpv1:Finishing transfer state, old conn 61F72DAC to
new conn 61F72B6C
*Jan  1 00:37:30.567:Rudpv1:Send window 2 .. 4
```

Related Commands

Command	Description
clear rudpv1 statistics	Clears RUDP statistics and failure counters.
show rudpv1	Displays RUDP failures, parameters, and statistics.