debug ppp bap

To display general BACP transactions, use the **debug ppp bap** privileged EXEC command. The **no** form of this command disables debugging output.

debug ppp bap [**error** | **event** | **negotiation**]

no debug ppp bap [**error** | **event** | **negotiation**]

Syntax Description

error	(Optional) Displays local errors.
event	(Optional) Displays information about protocol actions and transitions between action states (pending, waiting, idle) on the link.
negotiation	(Optional) Displays successive steps in negotiations between peers.

Usage Guidelines

Do not use this command when memory is scarce or in very high traffic situations.

Examples

The following types of events generate the debug messages displayed in the figures in this section:

- A dial attempt failed.
- A BACP group was created.
- A BACP group was removed.
- The precedence of the group changed.
- Attempting to dial a number.
- Received a BACP message.
- Discarding a BACP message.
- Received an unknown code.
- Cannot find the appropriate BACP group on input.
- Displaying the response type.
- Incomplete mandatory options notification.
- Invalid outgoing message type.
- Unable to build an output message.
- Sending a BACP message.
- Details about the sent message (type of message, its identifier, the virtual access interface that sent it).

The following is sample output from the **debug ppp bap** command:

```
Router# debug ppp bap

BAP Virtual-Access1: group "laudrup" (2) (multilink) without precedence created

BAP laudrup: sending CallReq, id 2, len 38 on BRI3:1 to remote
BAP Virtual-Access1: received CallRsp, id 2, len 13
BAP laudrup: CallRsp, id 2, ACK
BAP laudrup: attempt1 to dial 19995776677 on BRI3
```

```
 ---> reason BAP - Multilink bundle overloaded
BAP laudrup: sending StatusInd, id 2, len 44 on Virtual-Access1 to remote
BAP Virtual-Access1: received StatusRsp, id 2, len 1
BAP laudrup: StatusRsp, id 2, ACK
```

Table 154 describes some basic information about the group, the events, and the sent-message details.

Table 154 debug ppp bap Field Descriptions

Field	Description
BAP Virtual-Access1:	Identifier of the virtual access interface in use.
group “laudrup”	Name of the BACP group.
sending CallReq	Action initiated; in this case, sending a call request.
on BRI3:1 to remote	Physical interface being used.
BAP laudrup: attempt1 to dial 19995776677 on BRI3	Call initiated, number being dialed, and physical interface being used.
---> reason BAP - Multilink bundle overloaded	Reason for initiating the BACP call.
BAP laudrup: sending StatusInd, id 2, len 44 on Virtual-Access1 to remote	Details about the sent message: It was a status indication message, had identifier 2, had a BACP datagram length 44, and was sent on virtual access interface 1. You can display information about the virtual access interface by using the **show interfaces virtual-access** EXEC command. (The length shown at the end of each negotiated option includes the 2-byte type and length header.)

The **debug ppp bap event** command might show state transitions and protocol actions, in addition to the basic **debug ppp bap** command.

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

```
Router# debug ppp bap event

BAP laudrup: Idle --> AddWait
BAP laudrup: AddWait --> AddPending
BAP laudrup: AddPending --> Idle
```

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

```
Router# debug ppp bap event

Peer does not support a message type
No response to a particular request
No response to all request retransmissions
Not configured to initiate link addition
Expected action by peer has not occurred
Exceeded number of retries
No links available to call out
Unable to provide phone numbers for callback
Maximum number of links in the group
Minimum number of links in the group
Unable to process link addition at present
Unable to process link removal at present
Not configured/unable to initiate link removal
Link addition completed notification
Link addition failed notification
Determination of location of the group config
Link with specified discriminator not in group
Link removal failed
Call failure with status
Failed to dial specified number
Discarding retransmission
Unable to find received identifier
Received StatusInd when no call pending
Discarding message with no phone delta
Unable to send message in particular state
Received a zero identifier
Request has precedence
```

The error messages displayed might be added to the basic output when the **debug ppp bap error** command is used. Because the errors are very rare, you might never see these messages.

```
Router# debug ppp bap error

Unable to find appropriate request for received response
Invalid message type of queue
Received request is not part of the group
Add link attempt failed to locate group
Remove link attempt failed to locate group
Unable to inform peer of link addition
Changing of precedence cannot locate group
Received short header/illegal length/short packet
Invalid configuration information length
Unable to NAK incomplete options
Unable to determine current number of links
No interface list to dial on
Attempt to send invalid data
Local link discriminator is not in group
Received response type is incorrect for identifier
```

The messages displayed might be added to the basic output when the **debug ppp bap negotiation** command is used:

```
Router# debug ppp bap negotiation

BAP laudrup: adding link speed 64 kbps for type 0x1 len 5
BAP laudrup: adding reason "User initiated addition", len 25
BAP laudrup: CallRsp, id 4, ACK
BAP laudrup: link speed 64 kbps for types 0x1, len 5 (ACK)
BAP laudrup: phone number "1: 0 2: ", len 7 (ACK)
BAP laudrup: adding call status 0, action 0 len 4
BAP laudrup: adding 1 phone numbers "1: 0 2: " len 7
BAP laudrup: adding reason "Successfully added link", len 25
BAP laudrup: StatusRsp, id 4, ACK
```

Additional negotiation messages might also be displayed for the following:

```
Received BAP message
Sending message
Decode individual options for send/receive
Notification of invalid options
```

The following shows additional reasons for a particular BAP action that might be displayed in an "adding reason" line of the **debug ppp bap negotiation** command output:

```
"Outgoing add request has precedence"
"Outgoing remove request has precedence"
"Unable to change request precedence"
"Unable to determine valid phone delta"
"Attempting to add link"
"Link addition is pending"
"Attempting to remove link"
"Link removal is pending"
"Precedence of peer marked CallReq for no action"
"Callback request rejected due to configuration"
"Call request rejected due to configuration"
"No links of specified type(s) available"
"Drop request disallowed due to configuration"
"Discriminator is invalid"
"No response to call requests"
"Successfully added link"
"Attempt to dial destination failed"
"No interfaces present to dial out"
"No dial string present to dial out"
"Mandatory options incomplete"
"Load has not exceeded threshold"
"Load is above threshold"
"Currently attempting to dial destination"
"No response to CallReq from race condition"
```

Table 155 describes the reasons for a BACP Negotiation Action.

Table 155 Explanation of Reasons for BACP Negotiation Action

Reason	Explanation
"Outgoing add request has precedence"	Received a CallRequest or CallbackRequest while we were waiting on a CallResponse or CallbackResponse to a sent request. We are the favored peer from the initial BACP negotiation, so we are issuing a NAK to our peer request.
"Outgoing remove request has precedence"	Received a LinkDropQueryRequest while waiting on a LinkDropQueryResponse to a sent request. We are the favored peer from the initial BACP negotiation, therefore we are issuing a NAK to our peer request.
"Unable to change request precedence"	Received a CallRequest, CallbackRequest, or LinkDropQueryRequest while waiting on a LinkDropQueryResponse to a sent request. Our peer is deemed to be the favored peer from the initial BACP negotiation and we were unable to change the status of our outgoing request in response to the favored request, so we are issuing a NAK. (This is an internal error and should never be seen.)
"Unable to determine valid phone delta"	Received a CallRequest from our peer but are unable to provide the required phone delta for the response, so we are issuing a NAK. (This is an internal error and should never be seen.)
"Attempting to add link"	Received a LinkDropQueryRequest while attempting to add a link; a NAK is issued.
"Link addition is pending"	Received a LinkDropQueryRequest, CallRequest, or CallbackRequest while attempting to add a link as the result of a previous operation; a NAK is issued in the response.
"Attempting to remove link"	Received a CallRequest or CallbackRequest while attempting to remove a link; a NAK is issued.
"Link removal is pending"	Received a CallRequest, CallbackRequest, or LinkDropQueryRequest while attempting to remove a link as the result of a previous operation; a NAK is issued in the response.
"Precedence of peer marked CallReq for no action"	Received an ACK to a previously unfavored CallRequest; we are issuing a CallStatusIndication to inform our peer that there will be no further action on our part as per this response.
"Callback request rejected due to configuration"	Received a CallbackRequest but we are configured not to accept them; a REJect is issued to our peer.
"Call request rejected due to configuration"	Received a CallRequest but we are configured not to accept them; a REJect is issued to our peer.
"No links of specified type(s) available"	We received a CallRequest but no links of the specified type and speed are available; a NAK is issued.
"Drop request disallowed due to configuration"	Received a LinkDropQueryRequest but we are configured not to accept them; a NAK is issued to our peer.

Table 155 Explanation of Reasons for BACP Negotiation Action (continued)

Reason	Explanation
"Discriminator is invalid"	Received a LinkDropQueryRequest but the local link discriminator is not contained within the bundle; a NAK is issued.
"No response to call requests"	After no response to our CallRequest message, a CallStatusIndication is sent to the peer informing that no more action will be taken on behalf of this operation.
"Successfully added link"	Sent as part of the CallStatusIndication informing our peer that we successfully completed the addition of a link to the bundle as the result of the transmission of a CallRequest or the reception of a CallbackRequest.
"Attempt to dial destination failed"	Sent as part of the CallStatusIndication informing our peer that we failed in an attempt to add a link to the bundle as the result of the transmission of a CallRequest or the reception of a CallbackRequest. The retry field with the CallStatusIndication informs the peer of our intentions.
"No interfaces present to dial out"	There are no available interfaces to dial out on to attempt to add a link to the bundle, and we will not retry the dial attempt.
"No dial string present to dial out"	We do not have a dial string to dial out with to attempt to add a link to the bundle, and we are not going to retry the dial attempt. (This is an internal error and should never be seen.)
"Mandatory options incomplete"	Received a CallRequest, CallbackRequest, LinkDropQueryRequest, or CallStatusIndication and the mandatory options are not present, so a NAK is issued in the response. (A CallStatusResponse is an ACK, however).
"Load has not exceeded threshold"	Received a CallRequest or CallbackRequest but we are issuing a NAK in the response. We are monitoring the load of the bundle, and so we determine when links should be added to the bundle.
"Load is above threshold"	Received a LinkDropQueryRequest but we are issuing a NAK in the response. We are monitoring the load of the bundle, and so we determine when links should be removed from the bundle.
"Currently attempting to dial destination"	Received a CallbackRequest which is a retransmission of one that we previously ACK'd and are dialing the number suggested in the request. We are issuing an ACK because we did so previously, even though our peer never saw the previous response.
"No response to CallReq from race condition"	We issued a CallRequest but failed to receive a response, and we are issuing a CallStatusIndication to inform our peer of our intention not to proceed with the operation.

debug ppp multilink fragments

To display information about individual multilink fragments and important multilink events, use the **debug ppp multilink fragments** privileged EXEC command. The **no** form of this command disables debugging output.

debug ppp multilink fragments

no debug ppp multilink fragments

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Caution The **debug ppp multilink fragments** command has some memory overhead and should not be used when memory is scarce or in very high traffic situations.

Examples

The following is sample output from the **debug ppp multilink fragments** command when used with the **ping** EXEC command. The debug output indicates that a multilink PPP packet on interface BRI 0 (on the B channel) is an input (I) or output (O) packet. The output also identifies the sequence number of the packet and the size of the fragment.

```
Router# debug ppp multilink fragments

Router# ping 7.1.1.7
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 7.1.1.7, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/34/36 ms
Router#
2:00:28: MLP BRI0: B-Channel 1: O seq 80000000: size 58
2:00:28: MLP BRI0: B-Channel 2: O seq 40000001: size 59
2:00:28: MLP BRI0: B-Channel 2: I seq 40000001: size 59
2:00:28: MLP BRI0: B-Channel 1: I seq 80000000: size 58
2:00:28: MLP BRI0: B-Channel 1: O seq 80000002: size 58
2:00:28: MLP BRI0: B-Channel 2: O seq 40000003: size 59
2:00:28: MLP BRI0: B-Channel 2: I seq 40000003: size 59
2:00:28: MLP BRI0: B-Channel 1: I seq 80000002: size 58
2:00:28: MLP BRI0: B-Channel 1: O seq 80000004: size 58
2:00:28: MLP BRI0: B-Channel 2: O seq 40000005: size 59
2:00:28: MLP BRI0: B-Channel 2: I seq 40000005: size 59
2:00:28: MLP BRI0: B-Channel 1: I seq 80000004: size 58
2:00:28: MLP BRI0: B-Channel 1: O seq 80000006: size 58
2:00:28: MLP BRI0: B-Channel 2: O seq 40000007: size 59
2:00:28: MLP BRI0: B-Channel 2: I seq 40000007: size 59
2:00:28: MLP BRI0: B-Channel 1: I seq 80000006: size 58
2:00:28: MLP BRI0: B-Channel 1: O seq 80000008: size 58
2:00:28: MLP BRI0: B-Channel 2: O seq 40000009: size 59
2:00:28: MLP BRI0: B-Channel 2: I seq 40000009: size 59
2:00:28: MLP BRI0: B-Channel 1: I seq 80000008: size 58
```

debug ppp multilink events

To display information about events affecting multilink groups established for BACP, use the **debug ppp multilink events** privileged EXEC command. The **no** form of this command disables debugging output.

debug ppp multilink events

no debug ppp multilink events

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Caution Do not use this command when memory is scarce or in very high traffic situations.

Examples

The following is sample output from the **debug ppp multilink events** command:

```
Router# debug ppp multilink events

MLP laudrup: established BAP group 4 on Virtual-Access1, physical BRI3:1
MLP laudrup: removed BAP group 4
```

Other event messages include the following:

```
Unable to find bundle for BAP group identifier
Unable to find physical interface to start BAP
Unable to create BAP group
Attempt to start BACP when inactive or running
Attempt to start BACP on non-MLP interface
Link protocol has gone down, removing BAP group
Link protocol has gone down, BAP not running or present
```

Table 156 describes the significant fields shown in the display.

Table 156 debug ppp multilink events Field Descriptions

Field	Description
MLP laudrup	Name of the multilink group.
established BAP group 4	Internal identifier. The same identifiers are used in the **show ppp bap group** command output.
Virtual-Access1	Dynamic access interface number.
physical BRI3:1	Bundle was established from a call on this interface.
removed BAP group 4	When the bundle is removed, the associated BACP group (with its ID) is also removed.

debug priority

To display priority queueing output, use the **debug priority** privileged EXEC command. Use the **no** form of this command to disable debugging output.

debug priority

no debug priority

Syntax Description

This command has no arguments or keywords.

Examples

The following example shows how to enable priority queueing output:

```
Router# debug priority

Priority output queueing debugging is on
```

The following is sample output from the **debug priority** command when the Frame Relay PVC Interface Priority Queueing (FR PIPQ) feature is configured on serial interface 0:

```
Router# debug priority

00:49:05:PQ:Serial0 dlci 100 -> high
00:49:05:PQ:Serial0 output (Pk size/Q 24/0)
00:49:05:PQ:Serial0 dlci 100 -> high
00:49:05:PQ:Serial0 output (Pk size/Q 24/0)
00:49:05:PQ:Serial0 dlci 100 -> high
00:49:05:PQ:Serial0 output (Pk size/Q 24/0)
00:49:05:PQ:Serial0 dlci 200 -> medium
00:49:05:PQ:Serial0 output (Pk size/Q 24/1)
00:49:05:PQ:Serial0 dlci 300 -> normal
00:49:05:PQ:Serial0 output (Pk size/Q 24/2)
00:49:05:PQ:Serial0 dlci 400 -> low
00:49:05:PQ:Serial0 output (Pk size/Q 24/3)
```

Related Commands

Command	Description
debug custom-queue	Displays custom queueing output.

debug proxy h323 statistics

To enable proxy RTP statistics, use the **debug proxy h323 statistics** privileged EXEC command. The **no** form of this command disables the proxy RTP statistics.

debug proxy h323 statistics

no debug proxy h323 statistics

Syntax Description

This command has no arguments or keywords.

Command History

Release	Modification
11.3(2)NA	This command was introduced.

Usage Guidelines

Enter the **show proxy h323 detail-call** EXEC command to see the statistics.

debug pvcd

To display the PVC Discovery events and ILMI MIB traffic used when discovering PVCs, use the **debug pvcd** privileged EXEC command. The **no** form of this command disables debugging output.

debug pvcd

no debug pvcd

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

This command is primarily used by Cisco technical support representatives.

Examples

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

```
Router# debug pvcd

PVCD: PVCD enabled w/ Subif
PVCD(2/0): clearing event queue
PVCD: 2/0 Forgetting discovered PVCs...
PVCD: Removing all dynamic PVCs on 2/0
PVCD: Restoring MIXED PVCs w/ default parms on 2/0
PVCD: Marking static PVCs as UNKNWN on 2/0
PVCD: Marking static PVC 0/50 as UNKNWN on 2/0 ...
PVCD: Trying to discover PVCs on 2/0...
PVCD: pvcd_discoverPVCs
PVCD: pvcd_ping
PVCD: fPortEntry.5.0 = 2
PVCD: pvcd_getPeerVccTableSize
PVCD: fLayerEntry.5.0 = 13
PVCD:end allocating VccTable size 13
PVCD:  pvcd_getPeerVccTable
PVCD:******* 2/0: getNext on fVccEntry = NULL TYPE/VALUE numFileds = 19 numVccs = 13
PVCD: Creating Dynamic PVC 0/33 on 2/0
PVCD(2/0): Before _update_inheritance() and _create_pvc() VC 0/33: DYNAMIC
PVCD: After _create_pvc() VC 0/33: DYNAMIC0/33 on 2/0 :  UBR PCR = -1
PVCD: Creating Dynamic PVC 0/34 on 2/0
PVCD(2/0): Before _update_inheritance() and _create_pvc() VC 0/34: DYNAMIC
PVCD: After _create_pvc() VC 0/34: DYNAMIC0/34 on 2/0 :  UBR PCR -1
PVCD: Creating Dynamic PVC 0/44 on 2/0
PVCD(2/0): Before _update_inheritance() and _create_pvc() VC 0/44: DYNAMIC
PVCD: After _create_pvc() VC 0/44: DYNAMIC0/44 on 2/0 :  UBR PCR = -1
PVCD: PVC 0/50 with INHERITED_QOSTYPE
PVCD: _oi_state_change ( 0/50, 1 = ILMI_VC_UP )
PVCD: Creating Dynamic PVC 0/60 on 2/0
PVCD(2/0): Before _update_inheritance() and _create_pvc() VC 0/60: DYNAMIC
PVCD: After _create_pvc() VC 0/60: DYNAMIC0/60 on 2/0 :  UBR PCR = -1
PVCD: Creating Dynamic PVC 0/80 on 2/0
PVCD(2/0): Before _update_inheritance() and _create_pvc() VC 0/80: DYNAMIC
PVCD: After _create_pvc() VC 0/80: DYNAMIC0/80 on 2/0 :  UBR PCR = -1
PVCD: Creating Dynamic PVC 0/99 on 2/0
```

debug qllc error

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

debug qllc error

no debug qllc error

Syntax Description

This command has no arguments or keywords.

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 QLLC events, use the **debug qllc event** privileged EXEC command. The **no** form of this command disables debugging output.

debug qllc event

no debug qllc event

Syntax Description

This command has no arguments or keywords.

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 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 QLLC events and QLLC data packets, use the **debug qllc packet** privileged EXEC command. The **no** form of this command disables debugging output.

debug qllc packet

no debug qllc packet

Syntax Description

This command has no arguments or keywords.

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 QLLC events, use the **debug qllc state** privileged EXEC command. The **no** form of this command disables debugging output.

debug qllc state

no debug qllc state

Syntax Description

This command has no arguments or keywords.

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 QLLC timer events, use the **debug qllc timer** privileged EXEC command. The **no** form of this command disables debugging output.

debug qllc timer

no debug qllc timer

Syntax Description

This command has no arguments or keywords.

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, a 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 QLLC connection, use the **debug qllc x25** privileged EXEC command. The **no** form of this command disables debugging output.

debug qllc x25

no debug qllc x25

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

This command is helpful to track down errors in the QLLC interactions with X.25 networks. Use the **debug qllc x25** command in conjunction with the **debug x25 events** or **debug x25 all** commands to see the X.25 events between the router and its partner.

Examples

The following is sample output from the **debug qllc x25** 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
```

Table 157 describes fields of output.

Table 157 debug qllc x.25 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 radius

To display information associated with RADIUS, use the **debug radius** privileged EXEC command. The **no** form of this command disables debugging output.

debug radius

no debug radius

Syntax Description

This command has no arguments or keywords.

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.

Use the **debug aaa authentication** command to get a high-level view of login activity. When RADIUS is used on the router, you can use the **debug radius** command for more detailed debugging information.

Examples

The following is sample output from the **debug aaa authentication** command for a RADIUS login attempt that failed. The information indicates that RADIUS is the authentication method used.

```
Router# debug aaa authentication

14:02:55: AAA/AUTHEN (164826761): Method=RADIUS
14:02:55: AAA/AUTHEN (164826761): status = GETPASS
14:03:01: AAA/AUTHEN/CONT (164826761): continue_login
14:03:01: AAA/AUTHEN (164826761): status = GETPASS
14:03:01: AAA/AUTHEN (164826761): Method=RADIUS
14:03:04: AAA/AUTHEN (164826761): status = FAIL
```

The following is partial sample output from the **debug radius** command that shows a login attempt that failed because of a key mismatch (that is, a configuration problem):

```
Router# debug radius

13:55:19: Radius: IPC Send 0.0.0.0:1645, Access-Request, id 0x7, len 57
13:55:19:         Attribute 4 6 AC150E5A
13:55:19:         Attribute 5 6 0000000A
13:55:19:         Attribute 1 7 62696C6C
13:55:19:         Attribute 2 18 19D66483
13:55:22: Radius: Received from 171.69.1.152:1645, Access-Reject, id 0x7, len 20
13:55:22: Radius: Reply for 7 fails decrypt
```

The following is partial sample output from the **debug radius** command that shows a successful login attempt as indicated by an Access-Accept message:

```
Router# debug radius

13:59:02: Radius: IPC Send 0.0.0.0:1645, Access-Request, id 0xB, len 56
13:59:02:         Attribute 4 6 AC150E5A
13:59:02:         Attribute 5 6 0000000A
13:59:02:         Attribute 1 6 62696C6C
13:59:02:         Attribute 2 18 0531FEA3
13:59:04: Radius: Received from 171.69.1.152:1645, Access-Accept, id 0xB, len 26
13:59:04:         Attribute 6 6 00000001
```

The following is partial sample output from the **debug radius** command that shows an unsuccessful login attempt as indicated by the Access-Reject message:

```
Router# debug radius

13:57:56: Radius: IPC Send 0.0.0.0:1645, Access-Request, id 0xA, len 57
13:57:56:         Attribute 4 6 AC150E5A
13:57:56:         Attribute 5 6 0000000A
13:57:56:         Attribute 1 7 62696C6C
13:57:56:         Attribute 2 18 49C28F6C
13:57:59: Radius: Received from 171.69.1.152:1645, Access-Reject, id 0xA, len 20
```

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 ras

To display RAS events, use the **debug ras** privileged EXEC command. The **no** form of this command disables debugging output.

debug ras

no debug ras

Syntax Description

This command has no arguments or keywords.

Command History

Release	Modification
11.3(2)	This command was introduced.

Examples

The following examples are sample output from the **debug ras** command.

Proxy Details Trace with RAS Trace Enabled

In the following reports, the proxy registers with the gatekeeper and the trace is collected on the proxy with RAS trace enabled. A report is taken from a proxy and a gatekeeper.

```
Router# debug ras

H.323 RAS Messages debugging is on
Router#
      RASlib::ras_sendto: msg length 34 sent to 40.0.0.33
      RASLib::RASSendGRQ: GRQ sent to 40.0.0.33
      RASLib::RASRecvData: successfully rcvd message of length 45 from 40.0.0.33:1719
      RASLib::RASRecvData: GCF rcvd from [40.0.0.33:1719] on sock[0x67E570]
      RASlib::ras_sendto: msg length 76 sent to 40.0.0.33
      RASLib::RASSendRRQ: RRQ sent to 40.0.0.33
      RASLib::RASRecvData: successfully rcvd message of length 81 from 40.0.0.33:1719
      RASLib::RASRecvData: RCF rcvd from [40.0.0.33:1719] on sock [0x67E570]

Router# debug ras

H.323 RAS Messages debugging is on
Router#
      RASLib::RASRecvData: successfully rcvd message of length 34 from 101. 0.0.1:24999
      RASLib::RASRecvData: GRQ rcvd from [101.0.0.1:24999] on sock[5C8D28]
      RASlib::ras_sendto: msg length 45 sent to 40.0.0.31
      RASLib::RASSendGCF: GCF sent to 40.0.0.31
      RASLib::RASRecvData: successfully rcvd message of length 76 from 101.0.0.1:24999
      RASLib::RASRecvData: RRQ rcvd from [101.0.0.1:24999] on sock [0x5C8D28]
      RASlib::ras_sendto: msg length 81 sent to 40.0.0.31
      RASLib::RASSendRCF: RCF sent to 40.0.0.31
```

Gatekeeper Trace with RAS Turned On, Call Being Established

This report shows a proxy call scenario. A trace is collected on a gatekeeper with RAS turned on. The call is being established.

```
Router# debug ras

H.323 RAS Messages debugging is on
```

```
Router#  RASLib::RASRecvData: successfully rcvd message of length 116 from 50.0.0.12:1700
      RASLib::RASRecvData: ARQ rcvd from [50.0.0.12:1700] on sock [0x5C8D28]
      RASLib::RAS_WK_TInit: ipsock [0x68BD30] setup successful
      RASlib::ras_sendto: msg length 80 sent to 102.0.0.1
      RASLib::RASSendLRQ: LRQ sent to 102.0.0.1
      RASLib::RASRecvData: successfully rcvd message of length 111 from 102.0.0.1:1719
      RASLib::RASRecvData: LCF rcvd from [102.0.0.1:1719] on sock [0x68BD30]
     RASLib::parse_lcf_nonstd: LCF Nonstd decode succeeded, remlen = 0
RASlib::ras_sendto: msg length 16 sent to 50.0.0.12
      RASLib::RASSendACF: ACF sent to 50.0.0.12
      RASLib::RASRecvData: successfully rcvd message of length 112 from 101.0.0.1:24999
      RASLib::RASRecvData: ARQ rcvd from [101.0.0.1:24999] on sock [0x5C8D28]
      RASlib::ras_sendto: msg length 93 sent to 40.0.0.31
      RASLib::RASSendACF: ACF sent to 40.0.0.31
      RASLib::RASRecvData: successfully rcvd message of length 123 from 101.0.0.1:24999
      RASLib::RASRecvData: ARQ rcvd from [101.0.0.1:24999] on sock [0x5C8D28]
      RASlib::ras_sendto: msg length 16 sent to 40.0.0.31
      RASLib::RASSendACF: ACF sent to 40.0.0.31
```

Gatekeeper Trace with RAS Turned On, Call Being Torn Down

This report shows two proxy call scenarios. A trace is collected on the gatekeeper with RAS turned on. The call is being torn down.

```
Router# debug ras

H.323 RAS Messages debugging is on
Router#
      RASlib::ras_sendto: msg length 3 sent to 40.0.0.31
      RASLib::RASSendDCF: DCF sent to 40.0.0.31
      RASLib::RASRecvData: successfully rcvd message of length 55 from 101.0.0.1:24999
      RASLib::RASRecvData: DRQ rcvd from [101.0.0.1:24999] on sock [0x5C8D28]
      RASlib::ras_sendto: msg length 3 sent to 40.0.0.31
      RASLib::RASSendDCF: DCF sent to 40.0.0.31
      RASLib::RASRecvData: successfully rcvd message of length 55 from 50.0.0.12:1700
      RASLib::RASRecvData: DRQ rcvd from [50.0.0.12:1700] on sock [0x5C8D28]
      RASlib::ras_sendto: msg length 3 sent to 50.0.0.12
      RASLib::RASSendDCF: DCF sent to 50.0.0.12
```

Source Proxy Trace with RAS Turned On, Call Being Established

This report shows two proxy call scenarios. A trace is collected on the source proxy with RAS turned on. The call is being established.

```
Router# debug ras

H.323 RAS Messages debugging is on
Router#  RASlib::ras_sendto: msg length 112 sent to 40.0.0.33
      RASLib::RASSendARQ: ARQ sent to 40.0.0.33
      RASLib::RASRecvData: successfully rcvd message of length 93 from 40.0.0.33:1719
      RASLib::RASRecvData: ACF rcvd from [40.0.0.33:1719] on sock [0x67E570]
     RASLib::parse_acf_nonstd: ACF Nonstd decode succeeded, remlen = 0
RASlib::ras_sendto: msg length 123 sent to 40.0.0.33
      RASLib::RASSendARQ: ARQ sent to 40.0.0.33
      RASLib::RASRecvData: successfully rcvd message of length 16 from 40.0.0.33:1719
      RASLib::RASRecvData: ACF rcvd from [40.0.0.33:1719] on sock [0x67E570]
```

Source Proxy Trace with RAS Turned On, Call Being Torn Down

This report shows two proxy call scenarios. A trace is collected on the source proxy with RAS turned on. The call is being torn down.

```
Router# debug ras

H.323 RAS Messages debugging is on
```

```
Router#  RASLib::RASSendDRQ: DRQ sent to 40.0.0.33
      RASlib::ras_sendto: msg length 55 sent to 40.0.0.33
      RASLib::RASSendDRQ: DRQ sent to 40.0.0.33
      RASLib::RASRecvData: successfully rcvd message of length 3 from 40.0.0.33:1719
      RASLib::RASRecvData: DCF rcvd from [40.0.0.33:1719] on sock [0x67E570]
      RASLib::RASRecvData: successfully rcvd message of length 3 from 40.0.0.33:1719
      RASLib::RASRecvData: DCF rcvd from [40.0.0.33:1719] on sock [0x67E570]
```

debug redundancy

To enable the display of events for troubleshooting redundant DSCs, use the **debug redundancy** privileged EXEC command. Use the **no** form of this command to turn off the command.

debug redundancy {**all** | **ui** | **clk** | **hub**}

no debug redundancy {**all** | **ui** | **clk** | **hub**}

Syntax Description

all	Displays all available information on redundant DSCs, including that specified by the following options in this table.
ui	Displays information on the user interface of the redundant DSCs.
clk	Displays information on the clocks of the redundant DSCs.
hub	Displays information on the BIC hub of the redundant DSCs. The hub is the Fast Ethernet link between the router and the DSC.

Defaults

The command is disabled by default.

Command History

Release	Modification
11.3(6)AA	This command was introduced.

Usage Guidelines

This command is issued from the router shelf console.

Examples

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

debug resource-pool

To see and trace resource pool management activity, use the **debug resource-pool** privileged EXEC command. Use the **no** form of this command to disable this function.

debug resource-pool

no debug resource-pool

Syntax Description

This command has no arguments or keywords.

Defaults

Disabled

Command History

Release	Modification
12.0(4)XI	This command was introduced.

Usage Guidelines

Enter the **debug resource-pool** command to see and trace resource pool management activity.

Table 158 Resource Pooling States

State	Description
RM_IDLE	No call activity.
RM_RES_AUTHOR	Call waiting for authorization, message sent to 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 RPM authorization.
RM_DNIS_AUTH_SUCCEEDED	DNIS authorization succeeded.
RM_DNIS_RES_ALLOCATED	DNIS resource allocated.
RM_DNIS_AUTH_REQ_IDLE	DNIS authorization request idle.
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 **debug resource-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.
*/
```

Table 159 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 **debug rif** privileged EXEC command. The **no** form of this command disables debugging output.

debug rif

no debug rif

Syntax Description

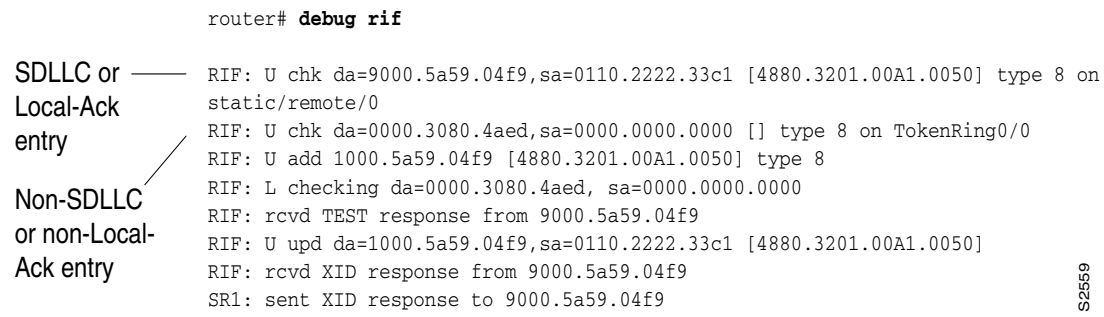
This command has no arguments or keywords.

Usage Guidelines

In order to use the **debug rif** command to display traffic source-routed through an interface, fast switching of source route bridging (SRB) frames must first be disabled with the **no source-bridge route-cache** interface configuration command.

Examples

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



The first line of output is an example of a RIF entry for an interface configured for SDLLC or Local-Ack. Table 160 describes significant fields shown in the display.

Table 160 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.

Table 160 debug rif Field Descriptions (continued)

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
```

Table 160, Part 1 explains the other possible lines of **debug rif** Command output.

Table 160, Part 1 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*, *type code*>	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 IPC messages set from the RP to the VIP about NetFlow policy routing when distributed Cisco Express Forwarding (dCEF) is enabled, use the **debug route-map ipc** privileged EXEC command. The **no** form of this command disables debugging output.

debug route-map ipc

no debug route-map ipc

Syntax Description

This command has no arguments or keywords.

Command History

Release	Modification
12.0(3)T	This command was introduced.

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 of 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 of 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 rtr error

To enable logging of SA Agent run-time errors, use the **debug rtr error** privileged EXEC command. To disable debugging output, use the **no** form of this command.

debug rtr error [*probe*]

no debug rtr error [*probe*]

Syntax Description:

probe	(Optional) Number of the probe in the range from 0 to 31.

Defaults

Logging is off.

Command History

Release	Modification
11.2	This command was introduced.
12.0(5)T	This command was modified.

Usage Guidelines

The **debug rtr error** command displays run-time errors. When a probe number other than 0 is specified, all run-time errors for that probe are displayed when the probe is active. When the probe number is 0 all run-time errors relating to the Response Time Reporter scheduler process are displayed. When no probe number is specified, all run-time errors for all active probes configured on the router and probe control are displayed.

Note Use the **debug rtr error** command before using the **debug rtr trace** command because the **debug rtr error** command generates a lesser amount of debug output.

Examples

The following example shows output from the **debug rtr error** command. The output indicates failure because the target is not there or because the responder is not enabled on the target. All debug output for the Response Time Reporter (including the **debug rtr trace** command) has the format shown in Table 161.

```
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
```

Table 161 describes the significant fields shown in the display.

Table 161 debug rtr error Field Descriptions

Field	Description
RTR 1	Number of the probe 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 SA Agent operation.

debug rtr trace

To trace the execution of an SA Agent operation, use the **debug rtr trace** privileged EXEC command. To disable trace debugging output (but not **debug rtr error** output), use the **no** form of this command.

debug rtr trace [*probe*]

no debug rtr trace [*probe*]

Syntax Description:

probe	(Optional) Number of the probe in the range from 0 to 31.

Command History

Release	Modification
11.2	This command was introduced.
12.0(5)T	This command was modified.

Usage Guidelines

When a probe number other than 0 is specified, execution for that probe is traced. When the probe number is 0, the Response Time Reporter scheduler process is traced. When no probe number is specified, all active probes and every probe control is traced.

The **debug rtr trace** command also enables **debug rtr error** command for the specified probe. 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 debug 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-probe basis.

Examples

The following output is from the **debug rtr trace** command. In this example, a probe 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 logging of SA Agent run-time errors.

debug rtsp

To show the status of the Real Time Streaming Protocol (RTSP) client/server, use the **debug rstp** command. To disables the display of output use the **no** form of this command.

debug rstp *type* [**all** | **api** | **pmh** | **session** | **socket**]

[no] debug rstp *type* [**all** | **api** | **pmh** | **session** | **socket**]

Syntax Description

all	(Optional) Displays debug messages for all RTSP client debug trace.
api	(Optional) Displays debug output for the RTSP client API.
pmh	(Optional) Displays debug output for the RTSP Protocol Message Handler.
session	(Optional) Displays debug output for the RTSP client session information.
socket	(Optional) Displays debug output for the RTSP client socket data.

Defaults

Debug is not enabled.

Command History

Release	Modification
12.1(3)T	This command was introduced.

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 api

To display information about the Real Time Streaming Protocol (RTSP) API messages passed down to the RTSP client, use the **debug rtsp api** command. To disable the output, use the **no** form of this command.

debug rtsp api

[**no**] **debug rtsp api**

Syntax Description

This command has no arguments or keywords.

Defaults

Debug is not enabled.

Command History

Release	Modification
12.1(3)T	This command was introduced.

Examples

The following example displays output from the **debug rtsp api** command:

```
router# debug rtsp api

RTSP client API debugging is on
router#
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
router#
Jan  1 00:23:15.775:rtsp_api_request:msg=0x61C29A4C
router#
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
Router#
```

Related Commands

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

debug rtsp client session

To display debug messages about the Real Time Streaming Protocol (RTSP) client or the current session, use the **debug rtsp** command. To disable the 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.

Defaults

Debug is not enabled.

Command History

Release	Modification
12.1(3)T	This command was introduced.

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 api	Displays debug output for the RTSP client API.
debug rtsp client session	Displays debug output for the RTSP client data.
debug rtsp pmh	Displays debug messages for the PMH.
debug rtsp socket	Displays debug output for the RTSP client socket data.

debug rtsp pmh

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

debug rtsp pmh

no debug rtsp pmh

Syntax Description

This command has no arguments or keywords.

Defaults

Debug is not enabled.

Command History

Release	Modification
12.1(3)T	This command was introduced.

Usage Guidelines

Use the **debug rtsp pmh** debug command for the following instances:

- To display packets sent by the gateway (Real Time Streaming Protocol [RTSP] client) to the RTSP server. For example:

```
Mar  1 02:25:11.447:SendBuf:DESCRIBE rtsp://rtsp-cisco.cisco.com/en_welcome.au
RTSP/1.0
CSeq:0
```

- To view packets sent by the RTSP server to the gateway. For example:

```
Mar  1 02:25:11.947:##########################################
Mar  1 02:25:11.947:Mesg_line             :RTSP/1.0 200 OK
Mar  1 02:25:11.951:Content_length        :459
Mar  1 02:25:11.951:Header list
Mar  1 02:25:11.951:Content-length:459
Mar  1 02:25:11.951:Content-type:application/sdp
Mar  1 02:25:11.951:Content-base:rtsp://rtsp-cisco.cisco.com/en_welcome.au/
Mar  1 02:25:11.951:X-TSPort:7802
Mar  1 02:25:11.951:Last-Modified:Thu, 07 Oct 1999 13:51:28 GMT
Mar  1 02:25:11.951:Date:Mon, 10 Jan 2000 16:40:59 GMT
Mar  1 02:25:11.951:CSeq:0
```

Examples

The following example output displays the result from entering the **debug rtsp pmh** command:

```
Router# debug rtsp pmh

RTSP client Protocol Message Handler debugging is on
Router#
Jan  1 00:22:34.087:rtsp_pmh_update_play_req_url:
Jan  1 00:22:34.087:rtsp_pmh_parse_url:
Jan  1 00:22:34.087:Input-Url:rtsp://rtsp-cisco.cisco.com:554/en_welcome.au
Jan  1 00:22:34.087:Hostname:rtsp-cisco.cisco.com
Jan  1 00:22:34.087:Port    :554
Jan  1 00:22:34.087:Path    :en_welcome.au
```

```
Jan  1 00:22:34.091:rtsp_pmh_build_desc_req:
Jan  1 00:22:34.091:rtsp_pmh_add_req_line:
Jan  1 00:22:34.091:RequestLine:(DESCRIBE rtsp://rtsp-cisco.cisco.com:554/en_welcome.au
RTSP/1.0
)
Jan  1 00:22:34.091:SendBuf:DESCRIBE rtsp://rtsp-cisco.cisco.com:554/en_welcome.au
RTSP/1.0
CSeq:0


Jan  1 00:22:34.091:last_req  = 0
Jan  1 00:22:34.739:rtsp_pmh_parse_svr_response:
Jan  1 00:22:34.739:rtsp_pmh_create_mesg:
Jan  1 00:22:34.739:########################################
Jan  1 00:22:34.739:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:34.739:Content_length        :482
Jan  1 00:22:34.739:Header list
Jan  1 00:22:34.739:Content-length:482
Jan  1 00:22:34.739:Content-type:application/sdp
Jan  1 00:22:34.739:Content-base:rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/
Jan  1 00:22:34.739:Last-Modified:Thu, 07 Oct 1999 13:51:28 GMT
Jan  1 00:22:34.739:X-TSPort:7802
Jan  1
00:22:34.739:vsrc:http://rtsp-cisco.cisco.com:8080/viewsource/template.html?nuyhtgywkgz6mc
9AbhC4gn5gBsqp4eA1v1yeC3d4ngEt5o5gwuw4t6x05jbhcv66ngE8xg8f
Jan  1
00:22:34.739:Set-Cookie:cbid=ekeghhiljgekgihheoqohpptrrjrktlufkegkioihgjfdlplrnqogpoqlrpsk
qnuffgjcmcl;path=/;expires=Thu,31-Dec-2037 23:59:59 GMT
Jan  1 00:22:34.739:Date:Mon, 10 Apr 2000 15:39:17 GMT
Jan  1 00:22:34.739:CSeq:0
Jan  1 00:22:34.739:Message Body
Jan  1 00:22:34.739:v=0
o=- 939300688 939300688 IN IP4 1.13.79.6
s=<No title>
i=<No author> <No copyright>
a=StreamCount:integer;1
t=0 0
m=audio 0 RTP/AVP 0
a=control:streamid=0
a=rtpmap:0 L8/8000/1
a=length:npt=3.249000
a=range:npt=0-3.249000
a=mimetype:string;"audio/x-pn-au"
a=StartTime:integer;0
a=AvgBitRate:integer;64000
a=AvgPacketSize:integer;320
a=Preroll:integer;0
a=MaxPacketSize:integer;320
a=MaxBitRate:integer;64000
a=OpaqueData:buffer;"AQABAEAfAAA="
a=StreamName:string;"audio/x-pn-au"

Jan  1 00:22:34.739:########################################
Jan  1 00:22:34.739:rtsp_pmh_process_resp_headers:
Jan  1 00:22:34.739:rtsp_pmh_get_header_value:
Jan  1 00:22:34.739:rtsp_pmh_process_resp_headers:Cseq=1
Jan  1 00:22:34.739:rtsp_pmh_get_resp_line:
Jan  1 00:22:34.739:rtsp_pmh_process_resp_headers:Response Status
Jan  1 00:22:34.739:rtsp_pmh_process_resp_headers:Status Code:200
Jan  1 00:22:34.739:rtsp_pmh_process_resp_headers:Reason Phrase:OK
Jan  1 00:22:34.743:rtsp_pmh_parse_mesg_body:
Jan  1 00:22:34.743:rtsp_pmh_process_resp_headers:Response
URL:rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0
Jan  1 00:22:34.743:rtsp_pmh_process_resp_headers:RealServer Duration
```

```
Jan  1 00:22:34.743:rtsp_pmh_process_resp_headers:IP/TV Duration
Jan  1 00:22:34.743:rtsp_pmh_get_range_from_npt:
Jan  1 00:22:34.743:rtsp_pmh_get_range_from_npt:Duration:3249 msecs
Jan  1 00:22:34.743:rtsp_pmh_update_resp_status:
Jan  1 00:22:34.743:rtsp_pmh_update_resp_status:Control Not active
Jan  1 00:22:34.743:########################################
Jan  1 00:22:34.743:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:34.743:Content_length        :482
Jan  1 00:22:34.743:Header list
Jan  1 00:22:34.743:Content-length:482
Jan  1 00:22:34.743:Content-type:application/sdp
Jan  1 00:22:34.743:Content-base:rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/
Jan  1 00:22:34.743:Last-Modified:Thu, 07 Oct 1999 13:51:28 GMT
Jan  1 00:22:34.743:X-TSPort:7802
Jan  1
00:22:34.743:vsrc:http://rtsp-cisco.cisco.com:8080/viewsource/template.html?nuyhtgywkgz6mc
9AbhC4gn5gBsqp4eA1v1yeC3d4ngEt5o5gwuw4t6x05jbhcv66ngE8xg8f
Jan  1
00:22:34.743:Set-Cookie:cbid=ekeghhiljgekgihheoqohpptrrjrktlufkegkioihgjfdlplrnqogpoqlrpsk
qnuffgjcmcl;path=/;expires=Thu,31-Dec-2037 23:59:59 GMT
Jan  1 00:22:34.743:Date:Mon, 10 Apr 2000 15:39:17 GMT
Jan  1 00:22:34.743:CSeq:0
Jan  1 00:22:34.743:Message Body
Jan  1 00:22:34.743:v=0
o=- 939300688 939300688 IN IP4 1.13.79.6
s=<No title>
i=<No author> <No copyright>
a=StreamCount:integer;1
t=0 0
m=audio 0 RTP/AVP 0
a=control:streamid=0
a=rtpmap:0 L8/8000/1
a=length:npt=3.249000
a=range:npt=0-3.249000
a=mimetype:string;"audio/x-pn-au"
a=StartTime:integer;0
a=AvgBitRate:integer;64000
a=AvgPacketSize:integer;320
a=Preroll:integer;0
a=MaxPacketSize:integer;320
a=MaxBitRate:integer;64000
a=OpaqueData:buffer;"AQABAEAfAAA="
a=StreamName:string;"audio/x-pn-au"

Jan  1 00:22:34.743:########################################
Jan  1 00:22:34.743:rtsp_pmh_free_mesg:
Jan  1 00:22:34.743:rtsp_pmh_build_setup_req:
Jan  1 00:22:34.743:rtsp_pmh_add_req_line:
Jan  1 00:22:34.743:RequestLine:(SETUP
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
)
Jan  1 00:22:34.747:rtsp_pmh_build_setup_req:SendBuf:SETUP
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
CSeq:1
Transport:rtp/avp;unicast;client_port=18084


Jan  1 00:22:35.243:rtsp_pmh_parse_svr_response:
Jan  1 00:22:35.243:rtsp_pmh_create_mesg:
Jan  1 00:22:35.243:########################################
Jan  1 00:22:35.243:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:35.243:Content_length        :0
Jan  1 00:22:35.243:Header list
```

```
Jan  1
00:22:35.243:Transport:rtp/avp;unicast;client_port=18084-18085;server_port=23192-23193
Jan  1 00:22:35.243:Session:24457-1
Jan  1 00:22:35.243:Date:Mon, 10 Apr 2000 15:39:17 GMT
Jan  1 00:22:35.243:CSeq:1
Jan  1 00:22:35.243:Message Body
Jan  1 00:22:35.243:########################################
Jan  1 00:22:35.243:rtsp_pmh_process_resp_headers:
Jan  1 00:22:35.243:rtsp_pmh_get_header_value:
Jan  1 00:22:35.243:rtsp_pmh_process_resp_headers:Cseq=2
Jan  1 00:22:35.243:rtsp_pmh_get_resp_line:
Jan  1 00:22:35.243:rtsp_pmh_process_resp_headers:Response Status
Jan  1 00:22:35.243:rtsp_pmh_process_resp_headers:Status Code:200
Jan  1 00:22:35.243:rtsp_pmh_process_resp_headers:Reason Phrase:OK
Jan  1 00:22:35.243:rtsp_pmh_get_header_value:
Jan  1 00:22:35.247:rtsp_pmh_get_header_value:
Jan  1 00:22:35.247:rtsp_pmh_process_resp_headers:RTP PORT= 23192
Jan  1 00:22:35.247:rtsp_pmh_process_resp_headers:RTP PORT= 23192
Jan  1 00:22:35.247:rtsp_pmh_update_resp_status:
Jan  1 00:22:35.247:rtsp_pmh_update_resp_status:Control Not active
Jan  1 00:22:35.247:########################################
Jan  1 00:22:35.247:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:35.247:Content_length        :0
Jan  1 00:22:35.247:Header list
Jan  1
00:22:35.247:Transport:rtp/avp;unicast;client_port=18084-18085;server_port=23192-23193
Jan  1 00:22:35.247:Session:24457-1
Jan  1 00:22:35.247:Date:Mon, 10 Apr 2000 15:39:17 GMT
Jan  1 00:22:35.247:CSeq:1
Jan  1 00:22:35.247:Message Body
Jan  1 00:22:35.247:########################################
Jan  1 00:22:35.247:rtsp_pmh_free_mesg:
Jan  1 00:22:35.247:rtsp_pmh_build_play_req:
Jan  1 00:22:35.247:rtsp_pmh_add_req_line:
Jan  1 00:22:35.247:RequestLine:(PLAY
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
)
Jan  1 00:22:35.247:rtsp_pmh_build_play_req:SendBuf:PLAY
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
Session:24457-1
CSeq:2


Jan  1 00:22:35.735:rtsp_pmh_parse_svr_response:
Jan  1 00:22:35.735:rtsp_pmh_create_mesg:
Jan  1 00:22:35.739:########################################
Jan  1 00:22:35.739:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:35.739:Content_length        :0
Jan  1 00:22:35.739:Header list
Jan  1 00:22:35.739:Date:Mon, 10 Apr 2000 15:39:18 GMT
Jan  1 00:22:35.739:CSeq:2
Jan  1 00:22:35.739:Message Body
Jan  1 00:22:35.739:########################################
Jan  1 00:22:35.739:rtsp_pmh_process_resp_headers:
Jan  1 00:22:35.739:rtsp_pmh_get_header_value:
Jan  1 00:22:35.739:rtsp_pmh_process_resp_headers:Cseq=3
Jan  1 00:22:35.739:rtsp_pmh_get_resp_line:
Jan  1 00:22:35.739:rtsp_pmh_process_resp_headers:Response Status
Jan  1 00:22:35.739:rtsp_pmh_process_resp_headers:Status Code:200
Jan  1 00:22:35.739:rtsp_pmh_process_resp_headers:Reason Phrase:OK
Jan  1 00:22:35.739:rtsp_pmh_update_resp_status:
Jan  1 00:22:35.739:rtsp_pmh_update_resp_status:Control Not active
Jan  1 00:22:35.739:########################################
Jan  1 00:22:35.739:Mesg_line             :RTSP/1.0 200 OK
```

```
Jan  1 00:22:35.739:Content_length        :0
Jan  1 00:22:35.739:Header list
Jan  1 00:22:35.739:Date:Mon, 10 Apr 2000 15:39:18 GMT
Jan  1 00:22:35.739:CSeq:2
Jan  1 00:22:35.739:Message Body
Jan  1 00:22:35.739:########################################
Jan  1 00:22:35.739:rtsp_pmh_free_mesg:
Jan  1 00:22:40.011:rtsp_pmh_build_teardown_req:
Jan  1 00:22:40.011:rtsp_pmh_add_req_line:
Jan  1 00:22:40.011:RequestLine:(TEARDOWN
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
)
Jan  1 00:22:40.011:SendBuf:TEARDOWN
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
Session:24457-1
CSeq:3


Jan  1 00:22:40.443:rtsp_pmh_parse_svr_response:
Jan  1 00:22:40.443:rtsp_pmh_create_mesg:
Jan  1 00:22:40.443:########################################
Jan  1 00:22:40.443:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:40.443:Content_length        :0
Jan  1 00:22:40.443:Header list
Jan  1 00:22:40.443:Date:Mon, 10 Apr 2000 15:39:23 GMT
Jan  1 00:22:40.443:CSeq:3
Jan  1 00:22:40.443:Message Body
Jan  1 00:22:40.443:########################################
Jan  1 00:22:40.443:rtsp_pmh_process_resp_headers:
Jan  1 00:22:40.443:rtsp_pmh_get_header_value:
Jan  1 00:22:40.443:rtsp_pmh_process_resp_headers:Cseq=4
Jan  1 00:22:40.443:rtsp_pmh_get_resp_line:
Jan  1 00:22:40.443:rtsp_pmh_process_resp_headers:Response Status
Jan  1 00:22:40.443:rtsp_pmh_process_resp_headers:Status Code:200
Jan  1 00:22:40.443:rtsp_pmh_process_resp_headers:Reason Phrase:OK
Jan  1 00:22:40.443:rtsp_pmh_update_resp_status:
Jan  1 00:22:40.443:rtsp_pmh_update_resp_status:Control Not active
Jan  1 00:22:40.443:########################################
Jan  1 00:22:40.447:Mesg_line             :RTSP/1.0 200 OK
Jan  1 00:22:40.447:Content_length        :0
Jan  1 00:22:40.447:Header list
Jan  1 00:22:40.447:Date:Mon, 10 Apr 2000 15:39:23 GMT
Jan  1 00:22:40.447:CSeq:3
Jan  1 00:22:40.447:Message Body
Jan  1 00:22:40.447:########################################
Jan  1 00:22:40.447:rtsp_pmh_free_mesg:
Router#


Jan  1 00:14:20.483:rtsp_tcp_socket_connect:
Jan  1 00:14:20.483:rtsp_tcp_socket_connect:Socket = 0
Jan  1 00:14:20.483:          Dest_addr = 1.13.79.6  Dest_Port=554
Jan  1 00:14:20.487:rtsp_send_req_to_svr:Socket = 0 send_buf = DESCRIBE
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au RTSP/1.0
CSeq:0

len = 76
Jan  1 00:14:20.491:rtsp_send_req_to_svr:bytes_sent = 76

Jan  1 00:14:20.491:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:20.491:rtsp_read_svr_resp:NBYTES = -1
Jan  1 00:14:21.155:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:21.159:rtsp_read_svr_resp:NBYTES = 996
Jan  1 00:14:21.223:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
```

```
Jan  1 00:14:21.227:rtsp_read_svr_resp:RESP received OK
Jan  1 00:14:21.227:rtsp_send_req_to_svr:Socket = 0 send_buf = SETUP
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
CSeq:1
Transport:rtp/avp;unicast;client_port=18074

len = 130
Jan  1 00:14:21.227:rtsp_send_req_to_svr:bytes_sent = 130

Jan  1 00:14:21.663:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:21.663:rtsp_read_svr_resp:NBYTES = 159
Jan  1 00:14:21.663:rtsp_read_svr_resp:rcv_buf = RTSP/1.0 200 OK
CSeq:1
Date:Mon, 10 Apr 2000 15:31:04 GMT
Session:24455-1
Transport:rtp/avp;unicast;client_port=18074-18075;server_port=15562-15563


Jan  1 00:14:21.663:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:21.663:rtsp_read_svr_resp:RESP received OK
Jan  1 00:14:21.663:rtsp_send_req_to_svr:Socket = 0 send_buf = PLAY
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
Session:24455-1
CSeq:2

len = 101
Jan  1 00:14:21.667:rtsp_send_req_to_svr:bytes_sent = 101

Jan  1 00:14:22.155:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:22.155:rtsp_read_svr_resp:NBYTES = 65
Jan  1 00:14:22.155:rtsp_read_svr_resp:rcv_buf = RTSP/1.0 200 OK
CSeq:2
Date:Mon, 10 Apr 2000 15:31:04 GMT


Jan  1 00:14:22.155:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:22.155:rtsp_read_svr_resp:RESP received OK
rtsp-5#
Jan  1 00:14:26.411:rtsp_send_req_to_svr:Socket = 0 send_buf = TEARDOWN
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
Session:24455-1
CSeq:3

len = 105
Jan  1 00:14:26.411:rtsp_send_req_to_svr:bytes_sent = 105

Jan  1 00:14:26.863:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:26.863:rtsp_read_svr_resp:NBYTES = 65
Jan  1 00:14:26.863:rtsp_read_svr_resp:rcv_buf = RTSP/1.0 200 OK
CSeq:3
Date:Mon, 10 Apr 2000 15:31:09 GMT


Jan  1 00:14:26.863:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:26.863:rtsp_read_svr_resp:RESP received OK
Jan  1 00:14:26.863:rtsp_close_svr_connection:closing socket 0
Router#
```

Related Commands

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

Command	Description
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 socket

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

debug rtsp socket

no debug rtsp socket

Syntax Description

This command has no arguments or keywords.

Defaults

Debug is not enabled.

Command History

Release	Modification
12.1(3)T	This command was introduced.

Usage Guidelines

Each 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.

Examples

The following example displays output from the **debug rtsp socket** command:

```
Router# show debug rtsp socket

Jan  1 00:14:20.483:rtsp_tcp_socket_connect:
Jan  1 00:14:20.483:rtsp_tcp_socket_connect:Socket = 0
Jan  1 00:14:20.483:          Dest_addr = 1.13.79.6  Dest_Port=554
Jan  1 00:14:20.487:rtsp_send_req_to_svr:Socket = 0 send_buf = DESCRIBE
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au RTSP/1.0
CSeq:0

len = 76
Jan  1 00:14:20.491:rtsp_send_req_to_svr:bytes_sent = 76

Jan  1 00:14:20.491:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:20.491:rtsp_read_svr_resp:NBYTES = -1
Jan  1 00:14:21.155:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:21.159:rtsp_read_svr_resp:NBYTES = 996
Jan  1 00:14:21.223:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:21.227:rtsp_read_svr_resp:RESP received OK
Jan  1 00:14:21.227:rtsp_send_req_to_svr:Socket = 0 send_buf = SETUP
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
CSeq:1
Transport:rtp/avp;unicast;client_port=18074

len = 130
Jan  1 00:14:21.227:rtsp_send_req_to_svr:bytes_sent = 130
```

```
Jan  1 00:14:21.663:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:21.663:rtsp_read_svr_resp:NBYTES = 159
Jan  1 00:14:21.663:rtsp_read_svr_resp:rcv_buf = RTSP/1.0 200 OK
CSeq:1
Date:Mon, 10 Apr 2000 15:31:04 GMT
Session:24455-1
Transport:rtp/avp;unicast;client_port=18074-18075;server_port=15562-15563

Jan  1 00:14:21.663:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:21.663:rtsp_read_svr_resp:RESP received OK
Jan  1 00:14:21.663:rtsp_send_req_to_svr:Socket = 0 send_buf = PLAY
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
Session:24455-1
CSeq:2

len = 101
Jan  1 00:14:21.667:rtsp_send_req_to_svr:bytes_sent = 101

Jan  1 00:14:22.155:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:22.155:rtsp_read_svr_resp:NBYTES = 65
Jan  1 00:14:22.155:rtsp_read_svr_resp:rcv_buf = RTSP/1.0 200 OK
CSeq:2
Date:Mon, 10 Apr 2000 15:31:04 GMT


Jan  1 00:14:22.155:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:22.155:rtsp_read_svr_resp:RESP received OK
rtsp-5#
Jan  1 00:14:26.411:rtsp_send_req_to_svr:Socket = 0 send_buf = TEARDOWN
rtsp://rtsp-cisco.cisco.com:554/en_welcome.au/streamid=0 RTSP/1.0
Session:24455-1
CSeq:3

len = 105
Jan  1 00:14:26.411:rtsp_send_req_to_svr:bytes_sent = 105

Jan  1 00:14:26.863:rtsp_read_svr_resp:Socket = 0
Jan  1 00:14:26.863:rtsp_read_svr_resp:NBYTES = 65
Jan  1 00:14:26.863:rtsp_read_svr_resp:rcv_buf = RTSP/1.0 200 OK
CSeq:3
Date:Mon, 10 Apr 2000 15:31:09 GMT

Jan  1 00:14:26.863:rtsp_read_svr_resp:rtsp_pmh_parse_svr_response complete
Jan  1 00:14:26.863:rtsp_read_svr_resp:RESP received OK
Jan  1 00:14:26.863:rtsp_close_svr_connection:closing socket 0
Router#
```

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 pmh	Displays debug messages for the PMH.

debug rtpspi all

To debug all RTP SPI errors, sessions, and in/out functions, use the **debug rtpspi all** EXEC command. Use the **no debug rtpspi all** command to turn off debugging.

debug rtpspi all

no debug rtpspi all

Syntax Description

This command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

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) in a private release that was not generally available.

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 RTP SPI errors, use the **debug rtpspi errors** EXEC command. Use the **no debug rtpspi errors** command to turn off debugging.

debug rtpspi errors

no debug rtpspi errors

Syntax Description

This command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

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) in a private release that was not generally available.

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 RTP SPI in/out functions, use the **debug rtpspi inout** EXEC command. Use the **no debug rtpspi inout** command to turn off debugging.

debug rtpspi inout

no debug rtpspi inout

Syntax Description

This command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

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) in a private release that was not generally available.

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 RTP SPI software module to send a triple redundant NSE, use the **debug rtpspi send-nse** EXEC command. Use the **no debug rtpspi send-nse** to disable this action.

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.

Defaults

No default behavior or values.

Command Modes

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) in a private release that was not generally available.

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 RTP SPI sessions, use the **debug rtpspi session** EXEC command. Use the **no debug rtpspi session** command to turn off debugging.

debug rtpspi session

no debug rtpspi session

Syntax Description

This command has no arguments or keywords.

Defaults

No default behavior or values.

Command Modes

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) in a private release that was not generally available.

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 sdlc

To display information on Synchronous Data Link Control (SDLC) frames received and sent by any router serial interface involved in supporting SDLC end station functions, use the **debug sdlc** privileged EXEC command. The **no** form of this command disables debugging output.

debug sdlc

no debug sdlc

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

Note Because the **debug sdlc** command can generate many messages and alter timing in the network node, use it only when instructed by authorized support personnel.

Examples

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

```
Router# debug sdlc

SDLC: Sending RR at location 4
Serial3: SDLC O (12495952) C2 CONNECT (2) RR P/F 6
Serial3: SDLC I (12495964) [C2] CONNECT (2) RR P/F 0 (R) [VR: 6 VS: 0]
Serial3: SDLC T [C2] 12496064 CONNECT 12496064 0
SDLC: Sending RR at location 4
Serial3: SDLC O (12496064) C2 CONNECT (2) RR P/F 6
Serial3: SDLC I (12496076) [C2] CONNECT (2) RR P/F 0 (R) [VR: 6 VS: 0]
Serial3: SDLC T [C2] 12496176 CONNECT 12496176 0
```

The following line of output indicates that the router is sending a Receiver Ready packet at location 4 in the code:

```
SDLC: Sending RR at location 4
```

The following line of output describes a frame output event:

```
Serial1/0: SDLC O 04 CONNECT (285) IFRAME P/F 6
```

Table 162 describes the significant fields shown in the display.

Table 162 debug sdlc Field Descriptions for a Frame Output Event

Field	Description
Serial1/0	Interface type and unit number reporting the frame event.
SDLC	Protocol providing the information.

Table 162 debug sdlc Field Descriptions for a Frame Output Event (continued)

Field	Description
O	Command mode of frame event. Possible values are as follows: • I—Frame input • O—Frame output • T—T1 timer expired
04	SDLC address of the SDLC connection.
CONNECT	State of the protocol when the frame event occurred. Possible values are as follows: • CONNECT • DISCONNECT • DISCSENT (disconnect sent) • ERROR (FRMR frame sent) • REJSENT (reject frame sent) • SNRMSENT (SNRM frame sent) • USBUSY • THEMBUSY • BOTHBUSY
(285)	Size of the frame (in bytes).
IFRAME	Frame type name. Possible values are as follows: • DISC—Disconnect • DM—Disconnect mode • FRMR—Frame reject • IFRAME—Information frame • REJ—Reject • RNR—Receiver not ready • RR—Receiver ready • SIM—Set Initialization mode command • SNRM—Set Normal Response Mode • TEST—Test frame • UA—Unnumbered acknowledgment • XID—EXchange ID
P/F	Poll/Final bit indicator. Possible values are as follows: • F—Final (printed for Response frames) • P—Poll (printed for Command frames) • P/F—Poll/Final (printed for RR, RNR, and REJ frames, which can be either Command or Response frames)
6	Receive count; range: 0 to 7.

The following line of output describes a frame input event:

```
Serial1/0: SDLC I 02 CONNECT (16) IFRAME P 7 0,[VR: 7 VS: 0]
```

Table 163 describes the significant fields shown in the display.

Table 163 debug sdlc Field Descriptions for a Frame Input Event

Field	Description
02	SDLC address.
IFRAME	Traffic engineering type.
P	Poll bit P is on.
VR: 7	Receive count; range: 0 to 7.
VS: 0	Send count; range: 0 to 7.

The following line of output describes a frame timer event:

```
Serial1/0: SDLC T 02 CONNECT 0x9CB69E8 P 0
```

Table 164 describes the significant fields shown in the display.

Table 164 debug sdlc Field Descriptions for a Timer Event

Field	Description
Serial1/0	Interface type and unit number reporting the frame event.
SDLC	Protocol providing the information.
T	Timer has expired.
02	SDLC address of this SDLC connection.
CONNECT	State of the protocol when the frame event occurred. Possible values are as follows: • BOTHBUSY • CONNECT • DISCONNECT • DISCSENT (disconnect sent) • ERROR (FRMR frame sent) • REJSENT (reject frame sent) • SNRMSENT (SNRM frame sent) • THEMBUSY • BOTHBUSY
0x9CB69E8	System clock.
0	Retry count; default: 0.

Related Commands

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

debug sdlc local-ack

To display information on the local acknowledgment feature, use the **debug sdlc local-ack** privileged EXEC command. The **no** form of this command disables debugging output.

debug sdlc local-ack [*number*]

no debug sdlc local-ack [*number*]

Syntax Description

number	(Optional) Frame-type that you want to monitor. See the "Usage Guidelines" section.

Usage Guidelines

You can select the frame types you want to monitor; the frame types correspond to bit flags. You can select 1, 2, 4, or 7, which is the decimal value of the bit flag settings. If you select 1, the octet is set to 00000001. If you select 2, the octet is set to 0000010. If you select 4, the octet is set to 00000100. If you want to select all frame types, select 7; the octet is 00000111. The default is 7 for all events. Table 165 defines these bit flags.

Table 165 debug sdlc local-ack Debugging Levels

Debug Command	Meaning
debug sdlc local-ack 1	Only U-Frame events
debug sdlc local-ack 2	Only I-Frame events
debug sdlc local-ack 4	Only S-Frame events
debug sdlc local-ack 7	All SDLC Local-Ack events (default setting)

Caution Because using this command is processor intensive, it is best to use it after hours, rather than in a production environment. It is also best to use this command by itself, rather than in conjunction with other debugging commands.

Examples

The following is sample output from the **debug sdlc local-ack** command:

```
router# debug sdlc local-ack 1

SLACK (Serial3): Input     = Network, LinkupRequest
SLACK (Serial3): Old State = AwaitSdlcOpen           New State = AwaitSdlcOpen

SLACK (Serial3): Output    = SDLC, SNRM

SLACK (Serial3): Input     = SDLC, UA
SLACK (Serial3): Old State = AwaitSdlcOpen           New State = Active

SLACK (Serial3): Output    = Network, LinkResponse
```

Group of associated operations

S2560

The first line shows the input to the SDLC local acknowledgment state machine:

```
SLACK (Serial3): Input     = Network, LinkupRequest
```

Table 166 describes the significant fields shown in the display.

Table 166 debug sdlc local-ack Field Descriptions

Field	Description
SLACK	SDLC local acknowledgment feature is providing the information.
(Serial3):	Interface type and unit number reporting the event.
Input = Network	Source of the input.
LinkupRequest	Op code. A LinkupRequest is an example of possible values.

The second line shows the change in the SDLC local acknowledgment state machine. In this case the AwaitSdlcOpen state is an internal state that has not changed while this display was captured.

```
SLACK (Serial3): Old State = AwaitSdlcOpen            New State = AwaitSdlcOpen
```

The third line shows the output from the SDLC local acknowledgment state machine:

```
SLACK (Serial3): Output     = SDLC, SNRM
```

debug sdlc packet

To display packet information on Synchronous Data Link Control (SDLC) frames received and sent by any router serial interface involved in supporting SDLC end station functions, use the **debug sdlc packet** privileged EXEC command. The **no** form of this command disables debugging output.

debug sdlc packet [*max-bytes*]

no debug sdlc packet [*max-bytes*]

Syntax Description

max-bytes	(Optional) Limits the number of bytes of data that are printed to the display.

Usage Guidelines

This command requires intensive CPU processing; therefore, we recommend not using it when the router is expected to handle normal network loads, such as in a production environment. Instead, use this command when network response is noncritical. We also recommend that you use this command by itself, rather than in conjunction with other **debug** commands.

Examples

The following is sample output from the **debug sdlc packet** command with the packet display limited to 20 bytes of data:

```
Router# debug sdlc packet 20

 Serial3 SDLC Output
00000 C3842C00 02010010 019000C5 C5C5C5C5 Cd.........EEEEE
00010 C5C5C5C5                            EEEE
 Serial3 SDLC Output
00000 C3962C00 02010011 039020F2          Co.........2
 Serial3 SDLC Output
00000 C4962C00 0201000C 039020F2          Do.........2
 Serial3 SDLC Input
00000     C491                              Dj
```

debug sdllc

To display information about data link-layer frames transferred between a device on a Token Ring and a device on a serial line via a router configured with the SDLLC feature, use the **debug sdllc** privileged EXEC command. The **no** form of this command disables debugging output.

debug sdllc

no debug sdllc

Syntax Description

This command has no arguments or keywords.

Usage Guidelines

The SDLLC feature translates between the SDLC link-layer protocol used to communicate with devices on a serial line and the LLC2 link-layer protocol used to communicate with devices on a Token Ring.

The router configured with the SDLLC feature must be attached to the serial line. The router sends and receives frames on behalf of the serial device on the attached serial line but acts as an SDLC station.

The topology between the router configured with the SDLLC feature and the Token Ring is network dependent and is not limited by the SDLLC feature.

Examples

The following is sample output from the **debug sdllc** command between link-layer peers from the perspective of the SDLLC-configured router:

```
Router# debug sdllc

SDLLC: rx explorer rsp, da 4000.2000.1001, sa C000.1020.1000, rif
 8840.0011.00A1.0050
SDLLC: tx short xid, sa 4000.2000.1001, da C000.1020.1000, rif
 88C0.0011.00A1.0050, dsap 4 ssap 4
SDLLC: tx long xid, sa 4000.2000.1001, da C000.1020.1000, rif
 88C0.0011.00A1.0050, dsap 4 ssap 4
Rcvd SABME/LINKUP_REQ pak from TR host
SDLLCERR: not from our partner, pak dropped, da 4000.2000.1001,
sa C000.1020.1000, rif 8840.0011.00A1.0050, partner = 5000.1040.1003
```

Table 167 describes the significant fields shown in the display.

Table 167 debug sdllc Field Descriptions

Field	Description
rx	Router receives message from the FEP.
explorer rsp	Response to an explorer (TEST) frame previously sent by the router to the FEP.
da	Destination address. This is the address of the router receiving the response.
sa	Source address. This is the address of the FEP sending the response to the router.
rif	Routing information field (RIF).
tx	Router sent message to the FEP.

Table 167 debug sdllc Field Descriptions (continued)

Field	Description
short xid	Router sent the null XID to the FEP.
dsap	Destination service access point
ssap	Source service access point.
tx long xid	Router sent the XID type 2 to the FEP.
Rcvd	Router received Layer 2 message from the FEP.
SABME/LINKUP_REQ	A set asynchronous Balanced Mode Extended command.
partner =	Partner address.

The following line indicates that an explorer frame response was received by the router at address 4000.2000.1001 from the FEP at address C000.1020.1000 with the specified RIF. The original explorer sent to the FEP from the router is not monitored as part of the **debug sdllc** command.

```
SDLLC: rx explorer rsp, da 4000.2000.1001, sa C000.1020.1000, rif
 8840.0011.00A1.0050
```

The following line indicates that the router sent the null XID (Type 0) to the FEP. The debugging information does not include the response to the XID message sent by the FEP to the router.

```
SDLLC: tx short xid, sa 4000.2000.1001, da C000.1020.1000, rif
 88C0.0011.00A1.0050, dsap 4 ssap 4
```

The following line indicates that the router sent the XID command (Format 0 Type 2) to the FEP:

```
SDLLC: tx long xid, sa 4000.2000.1001, da C000.1020.1000, rif
 88C0.0011.00A1.0050, dsap 4 ssap 4
```

The following line is the SABME response to the XID command previously sent by the router to the FEP:

```
Rcvd SABME/LINKUP_REQ pak from TR host
```