



Simple Gateway Control Protocol Support on Cisco MC3810 and Cisco 3600 Series Routers

This document describes the Simple Gateway Control Protocol feature on Cisco MC3810 and Cisco 3600 series routers and includes the following sections:

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Feature Overview

Simple Gateway Control Protocol (SGCP) enables intelligent external call agents to control gateways in Voice over IP (VoIP) environments. Gateways include trunking and residential gateways. Call agents include Telecordia SM 1.5 and third-party products. This release supports SGCP Version 1.1+.

SGCP is used in large IP networks typical of competitive local exchange carriers (CLECs) and Internet exchange carriers (IXCs).



Note

In this implementation, the router or concentrator is acting as a Channel Associated Signalling (CAS) PBX trunk gateway. Trunking and residential gateways are not supported in this release on these routers.

Benefits

Provides Alternative Dial Tone for Voice over IP Environments

Deregulation in the telecommunications industry gives CLECs opportunities to provide toll bypass from the Incumbent Local Exchange Carriers (ILECs) by using Voice over IP (VoIP). SGCP is a call agent protocol that enables a VoIP system to control call setup and teardown as well as CLASS features for less sophisticated gateways.

Removes Configuration Requirements for Static Voice over IP Network Dial Peers

When using SGCP as the call agent in a VoIP environment, configuring static VoIP network dial peers is not required, which simplifies the configuration. The SGCP call agent provides similar functions to VoIP network dial peers.

**Note**

POTS dial-peer configuration is still required.

Restrictions

SGCP CAS PBX trunk gateway is supported only on digital interfaces. Analog interfaces are not supported. On the Cisco 3640 and Cisco 3660 routers, a digital T1 packet voice trunk network module is required.

In addition, the following features are not supported:

- Caller ID
- Local Call Admission Control (CAC)
- DTMF relay
- G.729a, G.726 (32K) codecs
- Call waiting tone
- Flash hook detection
- Multiple connections in an SGCP endpoint

**Caution**

SGCP 1.1+ does not support SVCs. Voice over ATM SVCs were first supported on the Cisco MC3810 in Cisco IOS Release 12.0(5)XK and 12.0(7)T. If you are upgrading a Cisco MC3810 from IOS release 12.0(5)XK or 12.0(7)T to this release to obtain Voice over IP and SGCP support, you will lose support for your Voice over ATM SVCs.

Related Documents

- *Cisco IOS Multiservice Applications Configuration Guide*
- *Cisco IOS Multiservice Applications Command Reference*

- *Configuring Voice over IP on Cisco MC3810 Concentrators*, Cisco IOS 12.0(7)XK online document
- *Voice Port Enhancements in Cisco 2600 and 3600 Series Routers and MC3810 Series Concentrators*, Cisco IOS 12.0(7)XK online document
- *Configuring Cisco MC3810 Series Concentrators to Use High-Performance Compression Modules*, Cisco IOS 12.0(7)XK online document

Supported Platforms

- Cisco MC3810 Multiservice Access Concentrator
- Cisco 3640
- Cisco 3660

**Note**

This feature is not supported on the Cisco 3620.

Supported Standards, MIBs and RFCs

Standards

The following standards are supported:

- Telecordia SM 1.5
- RTP and RTCP 1889 and 1890

MIBs

- CISCO-XGCP-MIB
- CISCO-SGCP-MIB

For descriptions of supported MIBs and how to use them, see Cisco's MIB web site on Cisco Connection Online CCO at <http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>.

RFCs

No RFCs are supported by this feature

Prerequisites

Complete the following tasks before configuring SGCP on the Cisco MC3810 and Cisco 3600 series routers:

- Configure IP Routing

- Configure Voice Ports
- Configure Voice over IP
- Set up the Call Agent



Configuration Tasks



This section is divided into the following configuration and verification tasks:

- Configuring Support for SGCP
- Configuring SGCP Tuning Values
- Blocking New Calls and Gracefully Terminating Existing Calls
- Disabling SGCP Support
- Verifying the SGCP Configuration

Configuring Support for SGCP

To configure support for SGCP on the router so that the call agent is notified, enter the following commands beginning in global configuration mode:

Step	Command	Purpose
1.	<code>Router(config)# sgcp</code>	Enables the SGCP daemon.
		 <p>Note To enable the SGCP daemon after you have disabled SGCP, you must reboot the router. See “Disabling SGCP Support” section on page 6.</p>
2.	<code>Router(config)# sgcp call-agent <i>ipaddress[:udp port]</i></code>	Configures the call agent’s IP address or hostname. You can optionally enter the 16-bit UDP port number. The default UDP port number is 2427.
3.	<code>Router(config)# sgcp modem passthru {ca cisco nse}</code>	(Optional) Enables SGCP modem or fax passthrough. This command is disabled by default.
		 <p>Note If you specify the nse value to enable the Named Service Elements (NSE) upspeed option, then you must configure the sgcp tse payload command in the next step. If you do not specify the nse value, skip the next step.</p>
4.	<code>Router(config)# sgcp tse payload <i>type</i></code>	(Optional) Enables Inband Telephony Signalling Events (TSE) for fax/modem operation. The default for the <i>type</i> value is 0 (meaning the command is disabled), and the valid values are between 96 and 119.

Step	Command	Purpose
5.	Router(config)# dial-peer voice <i>number pots</i>	Enters dial peer configuration mode for the POTS dial peer.
6.	Router(config-dial-peer)# application SGCPAPP	Enables the SGCP application to control the dial peer.
7.	Router(config)# controller T1 [0 1]	Enters controller configuration mode.
		 Note On the Cisco MC3810, you can only route voice traffic on controller T1 1.
8.	Router(config-controller)# ds0-group <i>channel-number timeslots range</i> type (e&m-immediate e&m-wink fxs-ground-start)	Configures the DS0 group for CAS PBX operation.
		 Note When configuring SGCP 1.1+ as a Voice over IP call agent, only the e&m-immediate , e&m-wink , and fxs-ground-start options are supported.

Configuring SGCP Tuning Values


To configure settings to tune your SGCP configuration, use the following commands beginning in global configuration mode:

Step	Command	Purpose
1.	Router(config)# sgcp restart { delay <i>delay</i> notify }	(Optional) Restarts SGCP to synchronize with the T1 interface. The default value for delay is 0, and the valid range is 0 to 600.
2.	Router(config)# sgcp request retries <i>count</i>	(Optional) Specifies the number of times that the system retries sending a Notify and Delete message to the call agent before the message is dropped. The default is 3, and the valid range is 1 to 1,000.
3.	Router(config)# sgcp request timeout <i>timeout</i>	(Optional) Specifies how long the system should wait for a response. The default is 500 milliseconds, and the valid range is 1 to 10,000.
4.	Router(config)# sgcp max-waiting-delay <i>delay</i>	(Optional) Sets the SGCP maximum waiting delay to prevent restart avalanches. The default is 3,000 milliseconds, and the valid range is 0 to 600,000.
5.	Router(config)# sgcp timer { receive-rtcp <i>timer</i> rtp-nse <i>timer</i> }	(Optional) Configures how the gateway detects the RTP stream host. The default value for the receive-rtcp timer is 5 and the valid range is 1 to 100. The default value for the rtp nse timer is 200, and the valid range is 100 to 3,000.

Step	Command	Purpose
6.	Router(config)# sgcp retransmit timer random	(Optional) Configures the SGCP retransmission timer to use a random algorithm. The random keyword is the only supported option in this release.
7.	Router(config)# sgcp quarantine-buffer disable	(Optional) Disables the SGCP quarantine buffer, which is enabled by default.

Blocking New Calls and Gracefully Terminating Existing Calls

You can block all new SGCP calls to the router and gracefully terminate all existing active calls. When active calls are gracefully terminated, they are not terminated until a caller hangs up. To block all new calls, use the following commands beginning in global configuration mode:

Step	Command	Purpose
1.	Router(config)# sgcp graceful shutdown	Blocks all new SGCP calls from coming in and gracefully terminate all active calls.
		 Note Calls in progress before the command takes effect can go through.
2.	Router(config)# no sgcp graceful shutdown	Cancel the blocking of all calls and allow calls to be accepted.

Disabling SGCP Support

To disable the SGCP daemon and terminate any active calls, enter the following commands beginning in global configuration mode:

Step	Command	Purpose
1.	Router(config)# no sgcp	Disables the SGCP daemon and terminate all active calls.
2.	Router(config)# save config	Saves the configuration file before rebooting the router.


Note

When you enter the **no sgcp** command, you must save the configuration and reboot the router to disable SGCP.

Verifying the SGCP Configuration

To verify your SGCP configuration and obtain SGCP statistics, use the following commands beginning in global configuration mode:

Step	Command	Purpose
1.	router# show sgcp connection [interface <i>number</i>]	Displays all active SGCP connections on the router.
2.	router# show sgcp endpoint [interface <i>ds1</i> [<i>ds0</i>]]	Displays information about SGCP endpoints, including important information about endpoint names.
3.	router# show sgcp statistics	Displays global statistics for the SGCP packet counts.
4.	router# clear sgcp statistics	Clears all SGCP statistics.

Configuration Example

The following configuration example shows a Cisco MC3810 configured to send Voice over IP traffic over ATM with SGCP being used as the call agent. In this configuration, there are three ATM PVCs:

- one connected to the SGCP call agent
- one bearer channel connected to a gateway
- one connected to the router data network.

```
hostname r3810-5
!
!
network-clock base-rate 56k
ip subnet-zero
ip wccp version 2
!
sgcp
sgcp call-agent 1.4.43.1
cns event-service server
codec-complexity medium
!
xgcp snmp sgcp
!
controller T1 1
mode cas
framing esf
clock source internal
linecode b8zs
ds0-group 1 timeslots 1 type e&m-wink-start
ds0-group 2 timeslots 2 type e&m-wink-start
!
controller T1 0
framing esf
linecode b8zs
mode atm
!
!
interface Loopback1
ip address 1.7.43.4 255.255.0.0
no ip directed-broadcast
```

```

!
interface Ethernet0
 ip address 1.5.43.4 255.255.0.0
 no ip directed-broadcast
 no ip mroute-cache
!
interface Serial0
 bandwidth 1300
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 shutdown
 no fair-queue
 hold-queue 4096 out
!
interface Serial1
 no ip address
 no ip directed-broadcast
 no ip route-cache
 no ip mroute-cache
 shutdown
!
interface ATM0
 no ip address
 no ip directed-broadcast
!
interface ATM0.701 point-to-point
 description data channel
 ip address 173.1.101.2 255.255.255.0
 no ip directed-broadcast
 pvc data 1/101
 encapsulation aal5snap
!
!
interface ATM0.801 point-to-point
 description SGCP signaling channel
 ip address 173.1.102.2 255.255.255.0
 no ip directed-broadcast
 pvc signal 1/102
ubr-nrt 64 64
 encapsulation aal5snap
!
!
interface ATM0.901 point-to-point
 description bearer channel
 ip address 173.1.103.2 255.255.255.0
 no ip directed-broadcast
 pvc bearer 1/103
vbr-rt 900 900
 encapsulation aal5snap
!
!
interface Switch0
 no ip address
 no ip directed-broadcast
 encapsulation frame-relay
 no fair-queue
 shutdown
!
interface FR-ATM20
 no ip address
 no ip directed-broadcast
 shutdown
!

```

```
ip classless
ip route 1.4.0.0 255.255.0.0 173.1.102.2
ip route 1.6.0.0 255.255.0.0 173.1.101.2
ip route 1.8.0.0 255.255.0.0 173.1.103.2
no ip http server
!
!
!
line con 0
  transport input none
line aux 0
line 2 3
line vty 0 4
  login
!
voice-port 1:1
!
voice-port 1:2
!
!
dial-peer voice 20 pots
  application SGCPAPP
  port 1:1
!
dial-peer voice 21 pots
  application SGCPAPP
  port 1:2
```

Command Reference

This section documents new or modified commands. Modified commands are marked by an asterisk. All other commands used with this feature are documented in the Cisco IOS Release 12.0 command references. For new and modified debug commands, see “Debug Commands” on page 48:

- **application***
- **clear sgcp statistics***
- **dial-type***
- **ds0-group***
- **sgcp***
- **sgcp call-agent***
- **sgcp graceful-shutdown***
- **sgcp max-waiting-delay***
- **sgcp modem passthru**
- **sgcp quarantine-buffer disable**
- **sgcp request retries***
- **sgcp request timeout***
- **sgcp restart**
- **sgcp retransmit timer***
- **sgcp timer***
- **sgcp tse payload**

- **show sgcp connection***
- **show sgcp endpoint***
- **show sgcp statistics***
- **voice-group***

application

To enable a specific application on a dial-peer, use the **application** dial-peer configuration command. To remove the application from the dial-peer, use the **no** form of this command.

application *name*

no application *name*

Syntax Description

<i>name</i>	Indicates the name of the application enabled on the dial peer.
-------------	---

Defaults

No default behavior or values.

Command Modes

Dial-peer configuration

Command History

Release	Modification
11.3(6)NA2	This command was introduced.
12.0(5)T	The SGCPAPP application was first supported on the Cisco AS5300 in a private release not generally available.
12.0(7)XK	Support for the SGCPAPP application was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not publicly available.

Usage Guidelines

Enter the **SGCPAPP** application in upper-case characters. This application can only be applied to POTS dial peers. Note that SGCP dial peers do not use dial-peer hunting.



Note

In this release, you cannot mix SGCP and non-SGCP endpoints in the same T1 controller. You also cannot mix SGCP and non-SGCP endpoints in the same DS0 group.

Examples

The following example shows how to apply the SGCP application to a dial peer:

```
Router(config)# dial-peer voice 1 pots
Router(config-dial-peer)# application SGCPAPP
```

Related Commands

Command	Description
sgcp	Starts and allocates resources for the SCGP daemon.
sgcp call-agent	Defines the IP address of the default SGCP call agent.

clear sgcp statistics

To clear all SGCP statistics, use the **clear sgcp statistics** EXEC command.

clear sgcp statistics

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Examples The following example shows all SGCP statistics being cleared:

```
MC3810#clear sgcp statistics
MC3810#
```

Related Commands	Command	Description
	show sgcp statistics	Displays global statistics for SGCP packet counts.

dial-type

To specify the type of out-dialing for voice port interfaces, use the **dial-type** voice-port configuration command. Use the **no** form of this command to disable the selected type of dialing.

dial-type { **dtmf** | **pulse** | **mf** }

no dial-type

Syntax Description	Command	Description
	dtmf	DTMF (touch-tone) dialing
	pulse	Pulse (rotary) dialing
	mf	Multifrequency tone dialing

Defaults **dtmf**

Command Modes Voice-port configuration

Command History	Release	Modification
	11.3(1)T	This command was introduced.
	11.3(1) MA3	The pulse-dialer option was added.
	12.0(7)XK	The mf option was added.

Usage Guidelines

Use the **dial-type** command to specify an out-dialing type for an FXO or E&M voice port interface. This command specifies the tone type for digit detection and out-pulsing. This command is not applicable to all voice ports because the ports do not generate out-dialing. This command also specifies the detection direction. MF is not supported for FXS and FXO.

Voice ports can always detect DTMF and pulse signals. This command does not affect voice port dialing detection.

The **dial-type** command affects out-dialing as configured for the dial peer.

The **dial-type** command is not supported on FXO voice port interfaces on the Cisco MC3810. If you are using the **dial-type** command with E&M WinkStart, use the **dtmf** or **mf** option.

SGCP 1.1+ does not support **pulse** dialing.

Examples

The following example shows a voice port configured on the Cisco MC3810 to support a rotary (pulse tone) dialer:

```
Router(config)# voice-port 1/1
Router(config-voice-port)# dial-type pulse
```

The following example shows a voice port configured on the Cisco MC3810 to support a DTMF (touch-tone) dialer:

```
Router(config)# voice-port 1/1
Router(config-voice-port)# dial-type dtmf
```

The following example shows a voice port configured on the Cisco MC3810 to support a Multifrequency Tone dialer:

```
Router(config)# voice-port 1/1
Router(config-voice-port)# dial-type mf
```

Related Commands

Command	Description
sgcp	Defines T1 channels for compressed voice calls and the channel-associated signalling (CAS) method by which the router connects to the PBX or PSTN.
sgcp	Starts and allocates resources for the SCGP daemon.
sgcp call-agent	Defines the IP address of the default SGCP call agent.

ds0-group

To specify the DS0 timeslots that make up a logical voice port on a T1 or E1 controller and to specify the signalling type, use the **ds0-group** controller configuration command. Use the **no** form of the command to remove the DS0 group and signalling setting.

ds0-group *ds0-group-no* **timeslots** *timeslot-list* **type** *signal-type*

no ds0-group *ds0-group-no*

Syntax Description	
<i>ds0-group-no</i>	A value from 0 to 23 that identifies the DS0 group.
<i>timeslot-list</i>	<p><i>timeslot-list</i> is a single timeslot number, a single range of numbers, or multiple ranges of numbers separated by commas. For T1, allowable values are from 1 to 24. Examples are:</p> <ul style="list-style-type: none"> • 2 • 1-15, 17-24 • 1-23 • 2, 4, 6-12
type	<p>The signalling method selection for type depends on the connection that you are making. The E&M interface allows connection for PBX trunk lines (tie- lines) and telephone equipment. The FXS interface allows connection of basic telephone equipment and PBXs. The FXO interface is for connecting the central office (CO) to a standard PBX interface where permitted by local regulations. The FXO interface is often used for off-premises extensions.</p> <p>The options are as follows:</p> <ul style="list-style-type: none"> • e&m-immediate-start—no specific off-hook and on-hook signaling • e&m-delay-dial—the originating endpoint sends an off-hook signal and then waits for an off-hook signal followed by an on-hook signal from the destination • e&m-wink-start—the originating endpoint sends an off-hook signal and waits for a wink signal from the destination • fxs-ground-start—Foreign Exchange Station ground-start signalling support • fxs-loop-start —Foreign Exchange Station loop-start signalling support • fxo-ground-start—Foreign Exchange Office ground-start signalling support • fxo-loop-start—Foreign Exchange Office loop-start signalling support

The following options are available only on E1 controllers on the Cisco MC3810:

- **e&m-melcas-immed**—E&M Mercury Exchange Limited Channel Associated Signaling (MELCAS) immediate start signalling support
- **e&m-melcas-wink**—E&M MELCAS wink start signalling support
- **e&m-melcas-delay**—E&M MELCAS delay start signalling support
- **fxo-melcas**—MELCAS Foreign Exchange Office signalling support
- **fxs-melcas**—MELCAS Foreign Exchange Station signalling support

The **ext-sig** option is available only when the **mode ccs** command is enabled on the Cisco MC3810 for FRF.11 transparent CCS support.

Defaults

No DS0 group is defined.

Command Modes

Controller configuration

Command History

Release	Modification
11.2	This command was introduced for the Cisco AS5300 as cas-group .
12.0(1)T	The cas-group command was first supported on the Cisco 3600 series.
12.0(5)T	This command was renamed ds0-group on the Cisco AS5300 and on the Cisco 2600 and 3600 series (requires Digital T1 Packet Voice Trunk Network Modules).
12.0(7)XK	Support for this command was extended to the Cisco MC3810. When the ds0-group command became available on the Cisco MC3810, the voice-group command was removed and no longer supported. ext-sig replaces the ext-sig-master and ext-sig-master options that were available with the voice-group command.

Usage Guidelines

The **ds0-group** command automatically creates a logical voice port that is numbered as follows:

Cisco 2600 and 3600 series:

slot/port:ds0-group-no.

Cisco MC3810:

slot:ds0-group-no

On the Cisco MC3810, the *slot* number is the controller number. Although only one voice port is created for each group, applicable calls are routed to any channel in the group.

Examples

The following example shows ranges of T1 controller timeslots configured for FXS ground-start and FXO loop-start signalling on a Cisco 2600 or 3600 Series router:

```
Router(config)# controller T1 1/0
Router(config-controller)# framing esf
Router(config-controller)# linecode b8zs
Router(config-controller)# ds0-group 1 timeslot 1-10 type fxs-ground-start
Router(config-controller)# ds0-group 2 timeslot 11-24 type fxo-loop-start
```

The following example shows DS0 groups 1 and 2 on controller T1 1 configured on the Cisco MC3810 to support Transparent CCS:

```
Router(config)# controller T1 1
Router(config-controller)# mode ccs cross-connect
Router(config-controller)# ds0-group 1 timeslot 1-10 type ext-sig
Router(config-controller)# ds0-group 2 timeslot 11-24 type ext-sig
```

Related Commands

Command	Description
codec complexity	Matches the DSP complexity packaging to the codecs to be supported
mode ccs	Configures the T1/E1 controller to support CCS cross-connect or CCS frame-forwarding.

sgcp

To start and allocate resources for the SGCP daemon, use the **sgcp** global configuration command. Use the **no** form of this command to terminate all calls, release all allocated resources, and kill the SGCP daemon.

sgcp

no sgcp

Syntax Description This command has no arguments or keywords.

Defaults The SGCP daemon is not enabled.

Command Modes Global configuration

Command History

Release	Modification
12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines

When the SGCP daemon is not active, all SGCP messages are ignored.

When you enter the **no sgcp** command, the SGCP process is removed.



Note

When you enter the **no sgcp** command, you must save the configuration and reboot the router for the disabling of SGCP to take effect.

Examples

The following example shows the SGCP daemon being enabled:

```
Router(config)# sgcp
```

The following example shows the SGCP daemon being disabled:

```
Router(config)# no sgcp
```

Related Commands	Command	Description
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.
	sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
	sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
	sgcp request timeout	Specifies how long the system should wait for a response to a request.
	sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
	sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
	sgcp timer	Configures how the gateway detects the RTP stream host.
	sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp call-agent

To define the IP address of the default SGCP call agent in the router configuration file, use the **sgcp call-agent** global configuration command. Use the **no** form of this command to remove the IP address of the default SGCP call agent from the router configuration.

sgcp call-agent *ipaddress[:udp port]*

no sgcp call-agent *ipaddress*

Syntax Description	<i>ipaddress</i>	Specifies the IP address or hostname of the call-agent.
	<i>:udp port</i>	(Optional) Specifies the UDP port of the call-agent.

Defaults No IP address is configured.

Command Modes Global configuration

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines Setting this command defines the IP address of the default SGCP call agent that the router sends an initial RSIP (Restart-In-Progress) packet to when the router boots up. This is used for initial bootup only before the SGCP call agent contacts the router acting as the gateway.

When you enter the **no sgcp call-agent** command, only the IP address of the default SGCP call agent is removed.

Examples The following example shows SGCP being enabled and the IP address of the call-agent being specified:

```
Router(config)# sgcp
Router(config)# sgcp call-agent 209.165.200.225
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.
	sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
	sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
	sgcp request timeout	Specifies how long the system should wait for a response to a request.
	sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
	sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
	sgcp timer	Configures how the gateway detects the RTP stream host.
	sgcp tse payload	Enables Inband Telephony Signaling Events (TSE) for fax/modem operation.

sgcp graceful-shutdown

To block all new calls and gracefully terminate all existing calls (waits for the caller to end the call), use the **sgcp graceful-shutdown** configuration command. To unblock all calls and allow new calls to go through, use the **no** form of this command.

sgcp graceful-shutdown

no sgcp graceful-shutdown

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values.

Command Modes Global configuration

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines Once you issue this command, all requests for new connections (CreateConnection requests) are denied. All existing calls are maintained until users terminate them, or until you enter the **no sgcp** command. When the last active call is terminated, the SGCP daemon is terminated and all resources allocated to it are released.

Examples The following example shows all new calls being blocked and existing calls being terminated:

```
Router(config)# sgcp graceful-shutdown
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.

sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
sgcp request timeout	Specifies how long the system should wait for a response to a request.
sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp max-waiting-delay

To set the SGCP maximum waiting delay to prevent restart avalanches, use the **sgcp max-waiting-delay** configuration command. Use the **no** form of this command to restore the default value.

sgcp max-waiting-delay *delay*

no sgcp max-waiting-delay *delay*

Syntax Description	<i>delay</i>	Sets the maximum waiting delay (MWD) value in milliseconds. The valid range is 0 to 600,000. The default is 3,000.
---------------------------	--------------	--

Defaults	3,000 milliseconds
-----------------	--------------------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only, and was not generally available.
12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.	

Examples The following example shows the maximum wait delay value set to 40 milliseconds:

```
Router(config)# sgcp max-waiting-delay 40
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.
	sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
	sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
	sgcp request timeout	Specifies how long the system should wait for a response to a request.

sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp modem passthru

To enable SGCP modem or fax passthrough, use the **sgcp modem passthru** global configuration command. To disable SGCP modem or fax passthrough, use the **no** form of this command.

```
sgcp modem passthru {ca | cisco | nse}
```

```
no sgcp modem passthru {ca | cisco | nse}
```

Syntax Description

ca	Uses the call agent controlled modem upspeed method violation message.
cisco	Uses Cisco's proprietary upspeed method based on the protocol.
nse	Uses the NSE-based modem upspeed method.

Defaults

SGCP modem/fax passthrough is disabled by default.

Command Modes

Global configuration mode.

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

You can use this command for FAX passthrough since the answer tone can come from either modem or FAX transmissions. The upspeed method is the method used to dynamically change the codec type and speed to meet network conditions.

If you use the **nse** option, you must also configure the **sgcp tse payload** command.

For Cisco 3810 and Cisco 3660/40, only **sgcp modem passthru nse** is fully tested when SGCP external call agent is used in this release.

Examples

The following example shows SGCP modem passthrough configured using the call agent upspeed method:

```
Router(config)# sgcp modem passthru ca
```

The following example shows SGCP modem passthrough configured using the proprietary Cisco upspeed method:

```
Router(config)# sgcp modem passthru cisco
```

The following example shows SGCP modem passthrough configured using the NSE-based modem upspeed

```
Router(config)# sgcp modem passthru nse
Router(config)# sgcp tse payload 110
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
	sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
	sgcp request timeout	Specifies how long the system should wait for a response to a request.
	sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
	sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
	sgcp timer	Configures how the gateway detects the RTP stream host.
	sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp quarantine-buffer disable

To disable the SGCP quarantine buffer, use the **sgcp quarantine-buffer disable** configuration command. To reenable the SGCP quarantine buffer, use the **no** form of this command.

sgcp quarantine-buffer disable

no sgcp quarantine-buffer disable

Syntax Description This command has no arguments or keywords.

Defaults The SGCP quarantine buffer is enabled.

Command Modes Global configuration

Command History	Release	Modification
	12.0(7)XK	This command was introduced on the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines The SGCP quarantine buffer is the mechanism for buffering the SGCP events between two RQNT messages.

Examples The following example shows the SGCP quarantine buffer being disabled:

```
Router(config)# sgcp quarantine-buffer disable
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.
	sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
	sgcp request timeout	Specifies how long the system should wait for a response to a request.

sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp request retries

To specify the number of times to retry sending Notify and Delete messages to the SGCP call agent, use the **sgcp request retries** configuration command. The **no** form of this command restores the default value.

sgcp request retries *count*

no sgcp request retries

Syntax Description

<i>count</i>	Specifies the number of times a Notify and Delete message is retransmitted to the SGCP call agent before it is dropped. The valid range is 1 to 100. The default is 3.
--------------	--

Defaults

3

Command Modes

Global configuration

Command History

Release	Modification
12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines

The actual retry count may be different from the value you enter for this command. The retry count is also limited by the call agent. If there is no response from the call agent after 30 seconds, the gateway will not retry anymore, even though the number set using the **sgcp request retries** command has not been reached.

The router will stop sending retries after 30 seconds—regardless of the setting for this command.

The following example shows the system configured to send the **sgcp** command 10 times before dropping the request:

```
Router(config)# sgcp request retries 10
Router(config)#
```

Related Commands

Command	Description
sgcp	Starts and allocates resources for the SGCP daemon.
sgcp call-agent	Defines the IP address of the default SGCP call agent.
sgcp graceful-shutdown	Gracefully terminates all SGCP activity.

sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
sgcp modem passthru	Enables SGCP modem or fax passthrough.
sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
sgcp request timeout	Specifies how long the system should wait for a response to a request.
sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp request timeout

To specify how long the system should wait for a response to a request, use the **sgcp request timeout** configuration command. Use the **no** form of this command to restore the default value.

sgcp request timeout *timeout*

no sgcp request timeout

Syntax Description	<i>timeout</i>	Specifies the number of milliseconds to wait for a response to a request. Valid range is 1 to 10,000.
---------------------------	----------------	---

Defaults	500 milliseconds
-----------------	------------------

Command Modes	Global configuration
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Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines	This command is used for Notify and Delete messages, which are sent to the SGCP call agent.
-------------------------	---

Examples The following example shows the system configured to wait 40 milliseconds for a reply to a request:

```
Router(config)# sgcp request timeout 40
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.
	sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.

sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp restart

To trigger the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller, use the **sgcp restart** configuration command. Use the **no** form of this command to restore the default value.

```
sgcp restart {delay delay | notify}
```

```
no sgcp restart {delay delay | notify}
```

Syntax Description	delay delay	notify
	Specifies the restart delay timer value in milliseconds. The valid range is 0 to 600, and the default value is 0.	Enables the restart notification upon the SGCP/digital interface state transition.

Defaults 0

Command Modes Global configuration

Command History	Release	Modification
	12.0(7)XX	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 This command is used to send RSIP (Re-start In Progress) messages from the router to the SGCP call agent. The RSIP messages are used to synchronize the router and the call agent. RSIP messages are also sent when the **sgcp** command is entered to enable the SGCP daemon.

You must enter the **notify** option to enable RSIP messages to be sent.

Examples The following example shows the system configured to wait 40 milliseconds before restarting SGCP:

```
Router(config)# sgcp restart delay 40
Router(config)#
```

The following example shows the system configured to send an RSIP notification to the SGCP call agent when the T1 controller state changes:

```
Router(config)# sgcp restart notify
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.

sgcp call-agent	Defines the IP address of the default SGCP call agent.
sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
sgcp modem passthru	Enables SGCP modem or fax passthrough.
sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
sgcp request timeout	Specifies how long the system should wait for a response to a request.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp retransmit timer

To configure the SGCP retransmission timer to use a random algorithm method, use the **sgcp retransmit timer** configuration command. Use the **no** form of this command to restore the default value.

```
sgcp retransmit timer {random}
```

```
no sgcp retransmit timer {random}
```

Syntax Description

random	Enables the SGCP retransmission timer to use a random algorithm method. This is the only keyword supported in this release.
---------------	---

Defaults

The SGCP retransmission timer does not use the random algorithm.

Command Modes

Global configuration

Command History

Release	Modification
12.0(7)XK	This command was introduced on the Cisco 3600 and Cisco MC3810 in a private release that was not generally available. Only the random keyword was supported.

Usage Guidelines

Use this command to enable the random algorithm component of the retransmission timer. For example, if the retransmission timer is set to 200 milliseconds, the first retransmission timer is 200 milliseconds, but the second retransmission timer picks up a timer value randomly between either 200 or 400. The third retransmission timer picks up a timer value randomly of 200, 400, or 800 as shown below:

- First retransmission timer: 200
- Second retransmission timer: 200 or 400
- Third retransmission timer: 200, 400, or 800
- Fourth retransmission timer: 200, 400, 800, or 1600
- Fifth retransmission timer: 200, 400, 800, 1600, or 3200 and so on.

After 30 seconds, the retransmission timer no longer retries.

Examples

The following example shows the retransmission timer set to use the random algorithm:

```
Router(config)# sgcp retransmit timer random
```

Related Commands

Command	Description
sgcp	Starts and allocates resources for the SGCP daemon.
sgcp call-agent	Defines the IP address of the default SGCP call agent.
sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
sgcp modem passthru	Enables SGCP modem or fax passthrough.
sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
sgcp request timeout	Specifies how long the system should wait for a response to a request.
sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp timer	Configures how the gateway detects the RTP stream host.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp timer

To configure how the gateway detects the RTP stream lost, use the **sgcp timer** configuration command. Use the **no** form of this command to restore the default value.

```
sgcp timer {receive-rtcp timer | rtp-nse timer}
```

```
no sgcp timer {receive-rtcp timer | rtp-nse timer}
```

Syntax Description	receive-rtcp timer	Sets the multiples of the RTCP transmission interval in milliseconds. The valid range is 1 to 100, and the default is 5.
	rtp-nse timer	Sets the multiples of the RTP NSE timeout in milliseconds. The valid range is 100 to 3000, and the default is 200.

Defaults

receive-rtcp timer default is 5.
rtp-nse timer default is 200.

Command Modes

Global configuration

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines

The RTP NSE timer is used for proxy ringing (ringback tone is provided at the originating gateway).

Examples

The following example shows the receive-rtcp timer set to 100 milliseconds:

```
Router(config)# sgcp timer receive-rtcp 100
Router(config)#
```

The following example shows the rtp-nse timer set to 1000 milliseconds:

```
Router(config)# sgcp timer rtp-nse 1000
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.

sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
sgcp modem passthru	Enables SGCP modem or fax passthrough.
sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
sgcp request timeout	Specifies how long the system should wait for a response to a request.
sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp tse payload	Enables Inband Telephony Signalling Events (TSE) for fax/modem operation.

sgcp tse payload

To enable Inband Telephony Signalling Events (TSE) for fax/modem operation, use the **sgcp tse payload** configuration command. Use the **no** form of this command to restore the default value.

sgcp tse payload *type*

no sgcp tse payload *type*

Syntax Description	<i>type</i>	Sets the TSE payload type. The valid range is 96 to 119. The default is 0, meaning the command is disabled.
---------------------------	-------------	---

Defaults	0.
-----------------	----

Command Modes	Global configuration
----------------------	----------------------

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	<p>Because this command is disabled by default, you must specify a TSE payload type.</p> <p>If you configure the sgcp modem passthru command to the nse value, then you must configure this command.</p>
-------------------------	--

Examples	<p>The following example shows the SGCP modem passthrough set using the NSE-based modem upspeed and the Inband Telephony Signalling Events payload value set to 110:</p>
-----------------	--

```
Router(config)# sgcp modem passthru nse
Router(config)# sgcp tse payload 110
Router(config)#
```

Related Commands	Command	Description
	sgcp	Starts and allocates resources for the SGCP daemon.
	sgcp call-agent	Defines the IP address of the default SGCP call agent.
	sgcp graceful-shutdown	Gracefully terminates all SGCP activity.
	sgcp max-waiting-delay	Sets the SGCP maximum waiting delay to prevent restart avalanches.
	sgcp modem passthru	Enables SGCP modem or fax passthrough.

sgcp quarantine-buffer disable	Disables the SGCP quarantine buffer.
sgcp request retries	Specifies the number of times to retry sending Notify and Delete messages to the SGCP call agent.
sgcp request timeout	Specifies how long the system should wait for a response to a request.
sgcp restart	Triggers the router to send an RSIP message to the SGCP call agent indicating that the T1 controller is up or down, so that the call agent can synchronize with the T1 controller.
sgcp retransmit timer	Configures the SGCP retransmission timer to use a random algorithm method.
sgcp timer	Configures how the gateway detects the RTP stream host.

show sgcp connection

To see all active SGCP connections on this router, use the **show sgcp connection** EXEC command.

show sgcp connection [*interface number*]

Syntax Description	interface	(Optional) Specifies a DS1 interface.
	<i>number</i>	(Optional) Specifies the T1 interface (controller) number. Valid values on the Cisco MC3810 are from 0 to 1.

Defaults No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines If you do not specify an interface, this command shows all the active SGCP connections on this host. If you specify an interface, this command shows only those active connections on the specified interface.

Examples The following example shows the active connections on this router being displayed:

```
MC3810-5# show sgcp connection
Endpoint          Call_ID(C) Conn_ID(I) (P)ort (M)ode (S)tate (E)vent[SIFL] (R)esult[EA]
1. ds1-0/1@r3810-5      C=1,1,2 I=0x1 P=16492,16476 M=3 S=4 E=3,0,0,3 R=0, 0
```

The following example shows the state of SGCP on the router being displayed:

```
MC3810# show sgcp connection
SGCP Admin State DOWN, Oper State DOWN
SGCP call-agent: 209.165.200.225 , SGCP graceful-shutdown enabled? FALSE
SGCP request timeout 40, SGCP request retries 10
```

Table 1 *show sgcp connection Field Descriptions*

SGCP Admin State	The administrative and operational state of the SGCP daemon.
SGCP call-agent	The address of the call-agent specified in the sgcp command.
SGCP graceful-shutdown enabled	The state of the sgcp graceful-shutdown command.
SGCP request timeout	The setting for the sgcp request timeout command.
SGCP request retries	The setting for the sgcp request retries command.

Related Commands

Command	Description
show sgcp endpoint	Displays SGCP endpoint information.
show sgcp statistics	Displays global statistics for the SGCP packet count, success, and failure counts.

show sgcp endpoint

To see SGCP endpoints eligible for SGCP management, use the **show sgcp endpoint EXEC** command.

```
show sgcp endpoint [interface ds1 [ds0]]
```

Syntax Description	interface <i>ds1</i>	(Optional) Specifies the DS1 interface for which to display SGCP endpoint information. The valid range is from 1 to 1000.
	<i>ds0</i>	(Optional) Specifies the DS0 interface for which to display SGCP endpoint information. The valid range is from 0 to 30.

Defaults No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Usage Guidelines You can use this command to see SGCP endpoint information for the whole router, or you can see SGCP endpoint information for a specific DS1 interface and, optionally, a specific DS0. If you enter a nonexistent combination of a DS1 and DS0, the following error message appears: “No matching connection found.”

Examples The following command shows SGCP endpoint information being set for a matching connection between DS1 interface 1 and DS0 interface 10:

```
MC3810# show sgcp endpoint interface 1 10
```

Related Commands	Command	Description
	show sgcp connection	Displays all the active connections on the host router.
	show sgcp statistics	Displays global statistics for the SGCP packet count, success, and failure counts, and the like.

show sgcp statistics

To see global statistics for the SGCP packet count, success and failure counts, and other information, use the **show sgcp statistics EXEC** command.

show sgcp statistics

Syntax Description This command has no arguments or keywords.

Defaults No default behavior or values.

Command Modes EXEC

Command History	Release	Modification
	12.0(5)T	This command was introduced in a private release on the Cisco AS5300 only and was not generally available.
	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available.

Examples The following example shows SGCP packet statistics being displayed:

```
MC3810-5# show sgcp statistics
UDP pkts rx 5, tx 13
Unrecognized rx pkts 0, SGCP message parsing errors 0
Duplicate SGCP ack tx 0
Failed to send SGCP messages 0
CreateConn rx 1, successful 1, failed 0
DeleteConn rx 0, successful 0, failed 0
ModifyConn rx 0, successful 0, failed 0
DeleteConn tx 0, successful 0, failed 0
NotifyRequest rx 3, successful 3, failed 0
Notify tx 3, successful 3, failed 0
ACK tx 4, NACK tx 0
ACK rx 1, NACK rx 0

IP address based Call Agents statistics:
IP address 1.4.63.100, Total msg rx 5,
                    successful 5, failed 2
```

The following examples show how you can filter the command return for specific information:

```
MC3810# show sgcp statist | begin Failed
Failed to send SGCP messages 0
CreateConn rx 0, successful 0, failed 0
DeleteConn rx 0, successful 0, failed 0
ModifyConn rx 0, successful 0, failed 0
DeleteConn tx 0, successful 0, failed 0
NotifyRequest rx 0, successful 0, failed 0
```

```

Notify tx 0, successful 0, failed 0
ACK tx 0, NACK tx 0
ACK rx 0, NACK rx 0

MC3810# show sgcp statist | exclude ACK
UDP pkts rx 0, tx 0
Unrecognized rx pkts 0, SGCP message parsing errors 0
Duplicate SGCP ack tx 0
Failed to send SGCP messages 0
CreateConn rx 0, successful 0, failed 0
DeleteConn rx 0, successful 0, failed 0
ModifyConn rx 0, successful 0, failed 0
DeleteConn tx 0, successful 0, failed 0
NotifyRequest rx 0, successful 0, failed 0
Notify tx 0, successful 0, failed 0

MC3810# show sgcp statist | include ACK
ACK tx 0, NACK tx 0
ACK rx 0, NACK rx 0

```

Related Commands

Command	Description
show sgcp connection	Display all the active connections on the host Cisco AS5300.
show sgcp endpoint	Displays SGCP endpoint information.

voice-group

This command was added in Cisco IOS Release 11.3(1)MA on the Cisco MC3810. Beginning with Cisco IOS Release 12.0(7)XK, this command is no longer supported.

Debug Commands

This section documents new **debug** commands. All other commands used with this feature are documented in the Cisco IOS Release 12.1 command references.

- **debug rtpspi all**
- **debug rtpspi errors**
- **debug rtpspi inout**
- **debug rtpspi send-nse**
- **debug sgcp errors**
- **debug sgcp events**
- **debug sgcp packet**
- **debug vtsp send-nse**

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

Usage Guidelines



Caution

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

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.

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_addr = 0x5000001,remote_ip_addr = 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
```

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*Mar 1 00:38:59.385:rtpspi_call_setup:mode = CC_CALL_NORMAL.
destination number = 0.0.0.0
*Mar 1 00:38:59.385:rtpspi_call_setup:Passed local_ip_addr=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 addr changed. New IP
addr=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:RTP 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 addr = old IP addr = 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:succes. 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 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 addr = old IP addr = 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 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 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_addr = 0x5000001,remote_ip_addr = 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 *callID NSE-eventID*

no debug rtpspi send-nse *callID NSE-eventID*

Syntax Description		
	<i>callID</i>	Specifies the call ID of the active call. The valid range is from 0 to 65535.
	<i>NSE-eventID</i>	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 and Cisco 3600 series routers (except the Cisco 3620) 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 and Cisco 3600 series routers (except the Cisco 3620) 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.
    destination 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
```

■ debug rtpspi session

```

*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 sgcp errors

To debug Simple Gateway Control Protocol errors, use the **debug sgcp errors** EXEC command. Use the **no** form of this command to turn off debugging.

debug sgcp errors [**endpoint** *string*]

no debug sgcp errors

Syntax Description	<p>endpoint <i>string</i></p> <p>(Optional) Specifies the endpoint string if you want to debug SGCP errors for a specific endpoint.</p> <p>On the Cisco MC3810, the endpoint string syntax takes the following forms:</p> <ul style="list-style-type: none"> • DS1 endpoint: DS1-<i>slot/port</i> • POTS endpoint: aal<i>n</i>/<i>slot/port</i> <p>On the Cisco 3600, the endpoint string syntax takes the following forms:</p> <ul style="list-style-type: none"> • DS1 endpoint: <i>slot/subunit</i>/DS1-<i>ds1 number/ds0 number</i> • POTS endpoint: aal<i>n</i>/<i>slot/subunit/port</i>
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Defaults	No default behavior or values.
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Command Modes	EXEC
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Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.0(5)T</td> <td>This command was introduced on the Cisco AS5300 in a private release not generally available.</td> </tr> <tr> <td>12.0(7)XK</td> <td>Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available. Also, the endpoint keyword was added.</td> </tr> </tbody> </table>	Release	Modification	12.0(5)T	This command was introduced on the Cisco AS5300 in a private release not generally available.	12.0(7)XK	Support for this command was extended to the Cisco MC3810 and the Cisco 3600 series routers (except for the Cisco 3620) in a private release that was not generally available. Also, the endpoint keyword was added.
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Examples The following example shows the debugging of SGCP errors being enabled:

```
router# debug sgcp errors
Simple Gateway Control Protocol errors debugging is on
no errors since call went through successfully.
```

The following example shows a debug trace for SGCP errors on a specific endpoint:

```
router# debug sgcp errors endpoint DS1-0/1

End point name for error debug:DS1-0/1 (1)
00:08:41:DS1 = 0, DS0 = 1
00:08:41:Call record found
00:08:41:Enable error end point debug for (DS1-0/1)
```

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 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 sgcp events

To debug Simple Gateway Control Protocol events, use the **debug sgcp events** EXEC command. Use the **no debug sgcp events** to turn off debugging.

```
debug sgcp events [endpoint string]
```

```
no debug sgcp events
```

Syntax Description	<p>endpoint string (Optional) Specifies the endpoint string if you want to debug SGCP errors for a specific endpoint.</p> <p>On the Cisco MC3810, the endpoint string syntax takes the following forms:</p> <ul style="list-style-type: none"> DS1 endpoint: DS1-slot/port POTS endpoint: aaln/slot/port <p>On the Cisco 3600, the endpoint string syntax takes the following forms:</p> <ul style="list-style-type: none"> DS1 endpoint: <i>slot/subunit/DS1-ds1 number/ds0 number</i> POTS endpoint: aaln/slot/subunit/port
---------------------------	---

Defaults	No default behavior or values.
-----------------	--------------------------------

Command Modes	EXEC
----------------------	------

Command History	Release	Modification
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Examples The following example shows a debug trace for SGCP events on a specific endpoint:

```
router# debug sgcp events endpoint DS1-0/1

End point name for event debug:DS1-0/1 (1)
00:08:54:DS1 = 0, DS0 = 1
00:08:54:Call record found
00:08:54:Enable event end point debug for (DS1-0/1)
```

The following example shows a debug trace for all SGCP events on a gateway:

```
router# debug sgcp events
```

```

*Mar 1 01:13:31.035:callp :19196BC, state :0, call ID :-1, event :23

*Mar 1 01:13:31.035:voice_if->call_agent_ipaddr used as Notify entityNotify entity
available for Tx SGCP msg
NTFY send to ipaddr=1092E01 port=2427
*Mar 1 01:13:31.039:Push msg into SGCP wait ack queue* (1)[25]
*Mar 1 01:13:31.039:Timed Out interval [1]:(2000)
*Mar 1 01:13:31.039:Timed Out interval [1]:(2000)(0):E[25]
*Mar 1 01:13:31.075:Removing msg :
NTFY 25 dsl-1/13@mc1 SGCP 1.1
X:358258758
O:hd

*Mar 1 01:13:31.075:Unqueue msg from SGCP wait ack q** (0)[25]DS1 = 1, DS0 = 13

*Mar 1 01:13:31.091:callp :19196BC, vdbptr :1964EEC, state :1
*Mar 1 01:13:31.091:Checking ack (trans ID 237740140) :

*Mar 1 01:13:31.091:is_capability_ok:caps.codec=5, caps.pkt=10, caps.nt=8
*Mar 1 01:13:31.091:is_capability_ok:supported signal=0x426C079C, signal2=0x80003,
event=0x6003421F, event2=0x3FD
requested signal=0x0, signal2=0x0,
event=0x20000004, event2=0xC
*Mar 1 01:13:31.091:Same digit map is download (dsl-1/13@mc1)

*Mar 1 01:13:31.091:R:requested trans_id (237740140)

*Mar 1 01:13:31.091:process_signal_ev:seizure possible=1, signal mask=0x4, mask2=0x0
*Mar 1 01:13:32.405:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:32.489:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:32.610:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:32.670:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:32.766:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:32.810:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:32.931:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:32.967:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:33.087:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:33.132:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:33.240:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:33.280:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:33.389:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:33.433:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:33.537:SGCP Session Appl:ignore CCAPI event 10

*Mar 1 01:13:33.581:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:33.702:SGCP Session Appl:ignore CCAPI event 10

```

```
*Mar 1 01:13:33.742:callp :19196BC, state :1, call ID :16, event :9

*Mar 1 01:13:33.742:voice_if->call_agent_ipaddr used as Notify entityNotify entity
available for Tx SGCP msg
NTFY send to ipaddr=1092E01 port=2427
*Mar 1 01:13:33.742:Push msg into SGCP wait ack queue* (1)[26]
*Mar 1 01:13:33.742:Timed Out interval [1]:(2000)
*Mar 1 01:13:33.742:Timed Out interval [1]:(2000)(0):E[26]
*Mar 1 01:13:33.786:Removing msg :
NTFY 26 dsl-1/13@mc1 SGCP 1.1
X:440842371
O:k0, 4081037, s0

*Mar 1 01:13:33.786:Unqueue msg from SGCP wait ack q** (0)[26]DS1 = 1, DS0 = 13

*Mar 1 01:13:33.802:callp :19196BC, vdbptr :1964EEC, state :1
*Mar 1 01:13:33.802:Checking ack (trans ID 698549528) :

*Mar 1 01:13:33.802:is_capability_ok:caps.codec=5, caps.pkt=10, caps.nt=8
*Mar 1 01:13:33.802:is_capability_ok:supported signal=0x426C079C, signal2=0x80003,
event=0x6003421F, event2=0x3FD
requested signal=0x0, signal2=0x0,
event=0x4, event2=0x0
*Mar 1 01:13:33.802:R:requested trans_id (698549528)

*Mar 1 01:13:33.802:set_up_voip_call_leg:peer_addr=0, peer_port=0.
*Mar 1 01:13:33.806:call_setting_crcx:Enter CallProceeding state rc = 0, call_id=16

*Mar 1 01:13:33.806:callp :19196BC, state :4, call ID :16, event :31

*Mar 1 01:13:33.810:callp :1AF5798, state :2, call ID :17, event :8
call_pre_bridge!

*Mar 1 01:13:33.810:send_oc_create_ack:seizure_possible=1, ack-lready-sent=0,
ack_send=0
*Mar 1 01:13:33.814:callp :1AF5798, state :4, call ID :17, event :28

*Mar 1 01:13:33.814:Call Connect:Raw Msg ptr=0x1995360, no-offhook=0; call-id=17
*Mar 1 01:13:33.814:SGCP Session Appl:ignore CCAPI event 37

*Mar 1 01:13:33.947:callp :19196BC, state :5, call ID :16, event :32
process_nse_on_orig
DS1 = 1, DS0 = 13

*Mar 1 01:13:34.007:callp :19196BC, vdbptr :1964EEC, state :5
*Mar 1 01:13:34.007:Checking ack (trans ID 123764791) :

*Mar 1 01:13:34.007:is_capability_ok:caps.codec=5, caps.pkt=10, caps.nt=8
*Mar 1 01:13:34.007:is_capability_ok:supported signal=0x426C079C, signal2=0x80003,
event=0x6003421F, event2=0x3FD
requested signal=0x0, signal2=0x0,
event=0x4, event2=0x0
*Mar 1 01:13:34.007:R:requested trans_id (123764791)

*Mar 1 01:13:34.007:process_signal_ev:seizure possible=1, signal mask=0x0, mask2=0x0
*Mar 1 01:13:34.007:modify_connection:echo_cancel=1.
*Mar 1 01:13:34.007:modify_connection:vad=0.
*Mar 1 01:13:34.007:modify_connection:peer_addr=6000001, peer_port=0->16500.
*Mar 1 01:13:34.007:modify_connection:conn_mode=2.
*Mar 1 01:13:34.011:callp :19196BC, state :5, call ID :16, event :31

*Mar 1 01:13:34.011:callp :1AF5798, state :5, call ID :17, event :31
process_nse_event
```

```

*Mar 1 01:13:34.051:callp :19196BC, state :5, call ID :16, event :39

*Mar 1 01:13:34.051:call_id=16, ignore_ccapi_ev:ignore 19 for state 5
DS1 = 1, DS0 = 13

*Mar 1 01:13:39.497:callp :19196BC, vdbptr :1964EEC, state :5
*Mar 1 01:13:39.497:Checking ack (trans ID 553892443) :

*Mar 1 01:13:39.497:is_capability_ok:caps.codec=5, caps.pkt=10, caps.nt=8
*Mar 1 01:13:39.497:is_capability_ok:supported signal=0x426C079C, signal2=0x80003,
event=0x6003421F, event2=0x3FD
requested signal=0x8, signal2=0x0,
event=0x4, event2=0x0
*Mar 1 01:13:39.497:R:requested trans_id (553892443)

*Mar 1 01:13:39.497:process_signal_ev:seizure possible=1, signal mask=0x0, mask2=0x0
*Mar 1 01:13:39.497:modify_connection:echo_cancel=1.
*Mar 1 01:13:39.497:modify_connection:vad=0.
*Mar 1 01:13:39.497:modify_connection:peer_addr=6000001, peer_port=16500->16500.
*Mar 1 01:13:39.497:modify_connection:conn_mode=3.
*Mar 1 01:13:39.497:callp :19196BC, state :5, call ID :16, event :31

*Mar 1 01:13:39.501:callp :1AF5798, state :5, call ID :17, event :31

*Mar 1 01:14:01.168:Removing ack (trans ID 237740140) :
200 237740140 OK

*Mar 1 01:14:03.883:Removing ack (trans ID 698549528) :
200 698549528 OK
I:7

v=0
c=IN IP4 5.0.0.1
m=audio 16400 RTP/AVP 0

*Mar 1 01:14:04.087:Removing ack (trans ID 123764791) :
200 123764791 OK
I:7

v=0
c=IN IP4 5.0.0.1
m=audio 16400 RTP/AVP 0

*Mar 1 01:14:09.573:Removing ack (trans ID 553892443) :
200 553892443 OK
I:7

v=0
c=IN IP4 5.0.0.1
m=audio 16400 RTP/AVP 0

*Mar 1 01:14:48.091:callp :19196BC, state :5, call ID :16, event :12

*Mar 1 01:14:48.091:voice_if->call_agent_ipaddr used as Notify entityNotify entity
available for Tx SGCP msg
NTFY send to ipaddr=1092E01 port=2427
*Mar 1 01:14:48.091:Push msg into SGCP wait ack queue* (1)[27]
*Mar 1 01:14:48.091:Timed Out interval [1]:(2000)
*Mar 1 01:14:48.091:Timed Out interval [1]:(2000)(0):E[27]

```

```

*Mar 1 01:14:48.128:Removing msg :
NTFY 27 ds1-1/13@mc1 SGCP 1.1
X:97849341
O:hu

*Mar 1 01:14:48.128:Unqueue msg from SGCP wait ack q** (0)[27]DS1 = 1, DS0 = 13

*Mar 1 01:14:48.212:callp :19196BC, vdbptr :1964EEC, state :5
*Mar 1 01:14:48.212:Checking ack (trans ID 79307869) :

*Mar 1 01:14:48.212:is_capability_ok:caps.codec=5, caps.pkt=10, caps.nt=8
*Mar 1 01:14:48.212:is_capability_ok:supported signal=0x426C079C, signal2=0x80003,
event=0x6003421F, event2=0x3FD
requested signal=0x4, signal2=0x0,
event=0x0, event2=0x0
*Mar 1 01:14:48.212:delete_call:callp:19196BC, call ID:16
*Mar 1 01:14:48.212:sgcp delete_call:Setting disconnect_by_dlcx to 1
*Mar 1 01:14:48.216:callp :1AF5798, state :6, call ID :17, event :29

*Mar 1 01:14:48.216:Call disconnect:Raw Msg ptr = 0x0, call-id=17
*Mar 1 01:14:48.216:disconnect_call_leg O.K. call_id=17
*Mar 1 01:14:48.216:SGCP:Call disconnect:No need to send onhook
*Mar 1 01:14:48.216:Call disconnect:Raw Msg ptr = 0x19953B0, call-id=16
*Mar 1 01:14:48.216:disconnect_call_leg O.K. call_id=16
*Mar 1 01:14:48.220:callp :1AF5798, state :7, call ID :17, event :13

*Mar 1 01:14:48.220:Processing DLCX signal request :4, 0, 0

*Mar 1 01:14:48.220:call_disconnected:call_id=17, peer 16 is not idle yet.DS1 = 1, DS0 =
13

*Mar 1 01:14:48.272:callp :19196BC, vdbptr :1964EEC, state :7
*Mar 1 01:14:48.272:Checking ack (trans ID 75540355) :

*Mar 1 01:14:48.272:is_capability_ok:caps.codec=5, caps.pkt=10, caps.nt=8
*Mar 1 01:14:48.272:is_capability_ok:supported signal=0x426C079C, signal2=0x80003,
event=0x6003421F, event2=0x3FD
requested signal=0x0, signal2=0x0,
event=0x8, event2=0x0
*Mar 1 01:14:48.272:R:requested trans_id (75540355)

*Mar 1 01:14:48.272:process_signal_ev:seizure possible=1, signal mask=0x4, mask2=0x0
*Mar 1 01:14:49.043:callp :19196BC, state :7, call ID :16, event :27

*Mar 1 01:14:49.043:process_call_feature:Onhook event
*Mar 1 01:14:49.043:callp :19196BC, state :7, call ID :16, event :13

*Mar 1 01:15:18.288:Removing ack (trans ID 79307869) :
250 79307869 OK

*Mar 1 01:15:18.344:Removing ack (trans ID 75540355) :
200 75540355 OK

```

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 events

debug rtpspi send-nse	Triggers the RTP SPI to send a triple redundant NSE.
debug sgcp errors	Debugs SGCP errors.
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 sgcp packet

To debug Simple Gateway Control Protocol, use the **debug sgcp packet** EXEC command. Use the **no debug sgcp packet** to turn off debugging.

```
debug sgcp packet [endpoint string]
```

```
no debug sgcp packet
```

Syntax Description	<p>endpoint string (Optional) Specifies the endpoint string if you want to debug SGCP errors for a specific endpoint.</p> <p>On the Cisco MC3810, the endpoint string syntax takes the following forms:</p> <ul style="list-style-type: none"> DS1 endpoint: DS1-slot/port POTS endpoint: aaln/slot/port <p>On the Cisco 3600, the endpoint string syntax takes the following forms:</p> <ul style="list-style-type: none"> DS1 endpoint: <i>slot/subunit/DS1-ds1 number/ds0 number</i> POTS endpoint: aaln/slot/subunit/port
---------------------------	---

Defaults	No default behavior or values.
-----------------	--------------------------------

Command Modes	EXEC
----------------------	------

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The following example shows a debug trace for SGCP packets on a specific endpoint:

```
router# debug sgcp packet endpoint DS1-0/1

End point name for packet debug:DS1-0/1 (1)
00:08:14:DS1 = 0, DS0 = 1
00:08:14:Enable packet end point debug for (DS1-0/1)
```

The following example shows a debug trace for all SGCP packets on a gateway:

```

router# debug sgcp packet

*Mar 1 01:07:45.204:SUCCESS:Request ID string building is OK
*Mar 1 01:07:45.204:SUCCESS:Building SGCP Parameter lines is OK
*Mar 1 01:07:45.204:SUCCESS:SGCP message building OK
*Mar 1 01:07:45.204:SUCCESS:END of building
*Mar 1 01:07:45.204:SGCP Packet sent --->
NTFY 22 ds1-1/13@mc1 SGCP 1.1
X:550092018
O:hd

<---

*Mar 1 01:07:45.204:NTFY Packet sent successfully.
*Mar 1 01:07:45.240:Packet received -

200 22

*Mar 1 01:07:45.244:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:07:45.244:SUCCESS:END of Parsing
*Mar 1 01:07:45.256:Packet received -

RQNT 180932866 ds1-1/13@mc1 SGCP 1.1
X:362716780
R:hu,k0(A),s0(N),[0-9T](A) (D)
D:(9xx|xxxxxxxx)

*Mar 1 01:07:45.256:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:07:45.256:SUCCESS:Request ID string(362716780) parsing is OK
*Mar 1 01:07:45.260:SUCCESS:Requested Event parsing is OK
*Mar 1 01:07:45.260:SUCCESS:Digit Map parsing is OK
*Mar 1 01:07:45.260:SUCCESS:END of Parsing
*Mar 1 01:07:45.260:SUCCESS:SGCP message building OK
*Mar 1 01:07:45.260:SUCCESS:END of building
*Mar 1 01:07:45.260:SGCP Packet sent --->
200 180932866 OK

<---

*Mar 1 01:07:47.915:SUCCESS:Request ID string building is OK
*Mar 1 01:07:47.915:SUCCESS:Building SGCP Parameter lines is OK
*Mar 1 01:07:47.919:SUCCESS:SGCP message building OK
*Mar 1 01:07:47.919:SUCCESS:END of building
*Mar 1 01:07:47.919:SGCP Packet sent --->
NTFY 23 ds1-1/13@mc1 SGCP 1.1
X:362716780
O:k0, 4081037, s0

<---

*Mar 1 01:07:47.919:NTFY Packet sent successfully.
*Mar 1 01:07:47.955:Packet received -

200 23

*Mar 1 01:07:47.955:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:07:47.955:SUCCESS:END of Parsing
*Mar 1 01:07:47.971:Packet received -

```

```

CRCX 938694984 ds1-1/13@mc1 SGCP 1.1
M:recvonly
L:p:10,e:on,s:off, a:G.711u
R:hu
C:6

*Mar 1 01:07:47.971:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:07:47.971:SUCCESS:Connection Mode parsing is OK
*Mar 1 01:07:47.971:SUCCESS:Packet period parsing is OK
*Mar 1 01:07:47.971:SUCCESS:Echo Cancellation parsing is OK
*Mar 1 01:07:47.971:SUCCESS:Silence Supression parsing is OK
*Mar 1 01:07:47.971:SUCCESS:CODEC strings parsing is OK
*Mar 1 01:07:47.971:SUCCESS:Local Connection option parsing is OK
*Mar 1 01:07:47.971:SUCCESS:Requested Event parsing is OK
*Mar 1 01:07:47.975:SUCCESS:Call ID string(6) parsing is OK
*Mar 1 01:07:47.975:SUCCESS:END of Parsing
*Mar 1 01:07:47.979:SUCCESS:Conn ID string building is OK
*Mar 1 01:07:47.979:SUCCESS:Building SGCP Parameter lines is OK
*Mar 1 01:07:47.979:SUCCESS:SGCP message building OK
*Mar 1 01:07:47.979:SUCCESS:END of building
*Mar 1 01:07:47.979:SGCP Packet sent --->
200 938694984 OK
I:6

v=0
c=IN IP4 5.0.0.1
m=audio 16538 RTP/AVP 0

<---

*Mar 1 01:07:48.188:Packet received -

MDCX 779665338 ds1-1/13@mc1 SGCP 1.1
I:6
M:recvonly
L:p:10,e:on,s:off,a:G.711u
R:hu
C:6

v=0
c=IN IP4 6.0.0.1
m=audio 16392 RTP/AVP 0

*Mar 1 01:07:48.188:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:07:48.188:SUCCESS:Conn ID string(6) parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Connection Mode parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Packet period parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Echo Cancellation parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Silence Supression parsing is OK
*Mar 1 01:07:48.192:SUCCESS:CODEC strings parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Local Connection option parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Requested Event parsing is OK
*Mar 1 01:07:48.192:SUCCESS:Call ID string(6) parsing is OK
*Mar 1 01:07:48.192:SUCCESS:SDP Protocol version parsing OK
*Mar 1 01:07:48.192:SUCCESS:SDP Conn Data OK
*Mar 1 01:07:48.192:SUCCESS:END of Parsing
*Mar 1 01:07:48.200:SUCCESS:Conn ID string building is OK
*Mar 1 01:07:48.200:SUCCESS:Building SGCP Parameter lines is OK
*Mar 1 01:07:48.200:SUCCESS:SGCP message building OK
*Mar 1 01:07:48.200:SUCCESS:END of building
*Mar 1 01:07:48.200:SGCP Packet sent --->
200 779665338 OK

```

```

I:6

v=0
c=IN IP4 5.0.0.1
m=audio 16538 RTP/AVP 0

<---

*Mar 1 01:07:53.674:Packet received -

MDCX 177780432 ds1-1/13@mc1 SGCP 1.1
I:6
M:sendrecv
X:519556004
L:p:10,e:on, s:off,a:G.711u
C:6
R:hu
S:hd

v=0
c=IN IP4 6.0.0.1
m=audio 16392 RTP/AVP 0

*Mar 1 01:07:53.674:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:07:53.674:SUCCESS:Conn ID string(6) parsing is OK
*Mar 1 01:07:53.674:SUCCESS:Connection Mode parsing is OK
*Mar 1 01:07:53.674:SUCCESS:Request ID string(519556004) parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Packet period parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Echo Cancellation parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Silence Supression parsing is OK
*Mar 1 01:07:53.678:SUCCESS:CODEC strings parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Local Connection option parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Call ID string(6) parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Requested Event parsing is OK
*Mar 1 01:07:53.678:SUCCESS:Signal Requests parsing is OK
*Mar 1 01:07:53.678:SUCCESS:SDP Protocol version parsing OK
*Mar 1 01:07:53.678:SUCCESS:SDP Conn Data OK
*Mar 1 01:07:53.678:SUCCESS:END of Parsing
*Mar 1 01:07:53.682:SUCCESS:Conn ID string building is OK
*Mar 1 01:07:53.682:SUCCESS:Building SGCP Parameter lines is OK
*Mar 1 01:07:53.682:SUCCESS:SGCP message building OK
*Mar 1 01:07:53.682:SUCCESS:END of building
*Mar 1 01:07:53.682:SGCP Packet sent --->
200 177780432 OK
I:6

v=0
c=IN IP4 5.0.0.1
m=audio 16538 RTP/AVP 0

<---

*Mar 1 01:09:02.401:SUCCESS:Request ID string building is OK
*Mar 1 01:09:02.401:SUCCESS:Building SGCP Parameter lines is OK
*Mar 1 01:09:02.401:SUCCESS:SGCP message building OK
*Mar 1 01:09:02.401:SUCCESS:END of building
*Mar 1 01:09:02.401:SGCP Packet sent --->
NTFY 24 ds1-1/13@mc1 SGCP 1.1
X:519556004
O:hu

<---

```

```

*Mar 1 01:09:02.401:NTFY Packet sent successfully.
*Mar 1 01:09:02.437:Packet received -

200 24

*Mar 1 01:09:02.441:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:09:02.441:SUCCESS:END of Parsing
*Mar 1 01:09:02.541:Packet received -

DLCX 865375036 ds1-1/13@mc1 SGCP 1.1
C:6
S:hu

*Mar 1 01:09:02.541:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:09:02.541:SUCCESS:Call ID string(6) parsing is OK
*Mar 1 01:09:02.541:SUCCESS:Signal Requests parsing is OK
*Mar 1 01:09:02.541:SUCCESS:END of Parsing
*Mar 1 01:09:02.545:SUCCESS:SGCP message building OK
*Mar 1 01:09:02.545:SUCCESS:END of building
*Mar 1 01:09:02.545:SGCP Packet sent --->
250 865375036 OK

<---

*Mar 1 01:09:02.577:Packet received -

RQNT 254959796 ds1-1/13@mc1 SGCP 1.1
X:358258758
R:hd

*Mar 1 01:09:02.577:SUCCESS:SGCP Header parsing was OK
*Mar 1 01:09:02.577:SUCCESS:Request ID string(358258758) parsing is OK
*Mar 1 01:09:02.577:SUCCESS:Requested Event parsing is OK
*Mar 1 01:09:02.581:SUCCESS:END of Parsing
*Mar 1 01:09:02.581:SUCCESS:SGCP message building OK
*Mar 1 01:09:02.581:SUCCESS:END of building
*Mar 1 01:09:02.581:SGCP Packet sent --->
200 254959796 OK

```

Command History

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 vtsp send-nse	Sends and debugs a triple redundant NSE from the DSP to a remote gateway.

debug vtsp send-nse

To trigger the VTSP software module to send a triple redundant NSE, use the **debug vtsp send-nse** EXEC command. Use the **no debug vtsp send-nse** to disable this action.

debug vtsp send-nse

no debug vtsp send-nse

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 the Cisco 3600 series routers (except the Cisco 3620) in a private release that was not generally available.

Examples The following example shows the VTSP software module set to send a triple redundant NSE:

```
router# debug vtsp 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 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.

Glossary

NSE—Named Service Events.

RTP—Real-Time Protocol.

SGCP—Simple Gateway Control Protocol.

Simple Gateway Control Protocol—Simple Gateway Control Protocol (SGCP) enables intelligent, external call agents to control gateways in a Voice over IP (VoIP) environment. Gateways include trunking gateways and residential gateways. Call agents include TransPath and third-party products. SGCP is intended for use in large IP networks typical of competitive local exchange carriers (CLECs) and Internet exchange carriers (IXCs).

SPI—Service Provider Interface.

TSE—Telephony Signalling Events.

VTSP—Voice Telephony Service Provider.

