Fax-Relay Support for SG3 Fax Machines at G3 Speeds

First Published: October 31, 2005
Last Updated: February 27, 2006

This feature allows Super Group 3 (SG3) fax machines to interoperate over T.38 fax-relay or Cisco fax-relay networks. The capability to interoperate over fax-relay networks is achieved by enabling SG3 fax machines to negotiate down to G3 speeds by suppressing the SG3 V.8 fax call menu (CM) signal. The suppression of the SG3 V.8 fax CM signal (or message) is also known as SG3 spoofing.

History for the Fax-Relay Support for SG3 Fax Machines at G3 Speeds Feature

Release	Modification
12.4(4)T	This feature was introduced.
12.4(6)T	This feature was implemented on the Cisco 1700 series and Cisco 2800 series.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at http://www.cisco.com/go/fn. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Note For more information about this and related Cisco IOS voice features, see the following:

- *Cisco IOS Fax and Modem Services over IP Application Guide*
- *Cisco IOS Voice Configuration Library*; including library preface and glossary, other feature documents, and troubleshooting documentation.

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Contents

Prerequisites for Fax-Relay Support for SG3 Fax Machines at G3 Speeds

This section describes prerequisites for implementing SG3 V.8 fax CM signal suppression for Cisco fax relay and for T.38 fax relay using H.323, Session Initiation Protocol (SIP), and Media Gateway Control Protocol (MGCP) signaling types.

Cisco Fax Relay

- Install a software release that supports Cisco fax relay.
- Establish a working H.323 or SIP network for voice calls.
- Complete voice interoperability testing with third-party gateways and gatekeepers.

H.323 and SIP T.38 Fax Relay

- Ensure that your platform is supported. For more information, see Cisco Feature Navigator at http://www.cisco.com/go/fn.
- Install a software release that supports fax relay.
- Install appropriate hardware and memory for your platform.
- Establish a working H.323 or SIP network for voice calls. T.38 fax-relay interoperability requires H.323 Version 2.
- Complete voice interoperability testing with third-party gateways and gatekeepers.

MGCP T.38 Fax Relay

- Install a software release that supports T.38 fax relay
- Install appropriate hardware and memory for your platform.
- Identify endpoints and configure the MGCP application as described in the appropriate section of the *Cisco IOS MGCP and Related Protocols Configuration Guide*.
- Complete voice interoperability testing with third-party gateways and gatekeepers.
- Ensure that you have adequate memory in the gateway. Although 96 to 128 MB of RAM is recommended, the memory requirement depends on the platform and the anticipated number of calls to be made through the system.

Restrictions for Fax-Relay Support for SG3 Fax Machines at G3 Speeds

This section describes restrictions for implementing SG3 V.8 fax CM message suppression for T.38 fax relay for all signaling types.

- Third-party vendors must adhere to V.8 and T.30 specifications.
- Third-party vendors might experience a 2.5- to 4-second delay before the fax transmission begins. This is the Answer back tone (ANSam) timeout value specified in the T.30 specification.
- This feature supports only the TI C549, TI C5421, and TI C5510 DSPs.
- This feature applies only to T.38 and Cisco fax relay. It does not apply to fax pass-through.
- SG3 V.8 fax CM message suppression is enabled by default when T.38 fax relay or Cisco fax relay is configured.
- If modem pass-through is used to send SG3 faxes and Cisco or T.38 fax relay is used to send G3 faxes, you must configure both modem pass-through and fax relay.
- When a two-gateway solution is used, both gateways must be configured to use SG3 V.8 fax CM message suppression.
- When a one-gateway solution is used, other gateways can be Cisco gateways that do not support this feature or third-party gateways that are not SG3-capable if the fax CM message suppression gateway is the originating gateway.
- SG3 fax machines will scale down to G3 speeds if the SG3 V.8 fax CM message is suppressed or if the signals are not delivered reliably by low bit rate codecs.

H.323 T.38 Fax Relay

- The transport protocols specified in the ITU-T recommendation for T.38 are TCP and User Datagram Protocol (UDP). However, for T.38 fax relay on Cisco gateways, only UDP is supported for the transport layer.
- Some third-party gateways and gatekeepers may not be compatible with Cisco voice gateways for T.38 fax relay because different manufacturers can select certain parts of H.323 and T.38 to implement on their gateways and gatekeepers. Voice interoperability testing with these third-party gateways and gatekeepers should be performed to make sure that T.38 fax-relay can be successful.
- T.38 fax-relay is not supported on Cisco MC3810 series concentrators with voice compression modules (VCMs).
- T.38 fax relay is not supported by Multimedia Conference Manager (MCM) H.323 proxy in Cisco IOS Release 12.1(3)T.
- If the **fax rate disable** command is configured on a dial peer, neither the originating nor the terminating gateway can enter into Cisco fax-relay mode or T.38 fax-relay mode. The **fax rate disable** command disables fax pass-through if fax protocol pass-through is configured.

SIP T.38 Fax Relay

- The transport protocols specified in the ITU-T recommendation for T.38 are TCP and UDP. However, for T.38 fax relay on Cisco gateways, only UDP is supported for the transport layer.
- If SIP T.38 fax relay is not supported by both gateways, the T.38 negotiation fails and the call reverts to an audio codec.
- T.38 fax-relay requires a 64-kbps transmission rate, the same amount of bandwidth as a voice call with the G.711 codec.

- Fax calling tones are optional and are not used to initiate a switch to T.38 mode. Instead, Called Station Identifier (CED) tones or preamble flags are used.
- SIP fax relay does not rely on NSEs to signal a switch to T.38 mode. Standard RFC 2543 and RFC 2327 SIP and SDP signaling are used instead.
- If the **fax rate disable** command is configured on a dial peer, neither the originating nor the terminating gateway can enter into Cisco fax-relay mode, T.38 fax-relay mode, or fax pass-through mode. The **fax rate disable** command disables fax transfer support.

MGCP T.38 Fax Relay.

- The transport protocols specified in the ITU-T recommendation for T.38 are TCP and UDP. However, for T.38 fax relay on Cisco gateways, only UDP is supported for the transport layer.
- If T.38 is not supported by both gateways, fax pass-through is attempted.
- The gateway does not dynamically issue a call admission control (CAC) request to increase the bandwidth allocated for a call when the call is switched from voice to fax. MGCP T.38 fax relay supports a best-effort allocation of bandwidth requirements for the call.

Information About Fax-Relay Support for SG3 Fax Machines at G3 Speeds

To configure SG3 fax machines to interoperate using fax relay, you should understand the following concepts:

- Fax CM Message Tone Suppression, page 4
- One-Gateway and Two-Gateway Solutions for Configuring SG3 Fax Machines at G3 Speeds, page 5

Fax CM Message Tone Suppression

Super Group 3 (SG3) is a standard of fax machines that support speeds of up to 33.6 kbps through V.34 half duplex (HD) modulation and V.8 signaling.

Prior to Cisco IOS Release 12.4(4)T, SG3 fax machines could interoperate only over T.38 fax-relay and Cisco fax-relay networks with G3 fax machines, not with other SG3 fax machines, unless the fax machines were specifically configured to work at slower speeds or were configured for modem pass-through. The use of SG3 V.8 fax CM message suppression provides a gateway-controlled solution that enables SG3 fax machines to scale down without end-user interaction and without the extra bandwidth required by modem pass-through.

SG3 V.8 fax CM message suppression allows SG3 fax machines to interoperate over a fax-relay network at G3 speeds by blocking the SG3 V.8 CM message, or fax tone, from reaching the called fax machine. This causes the called fax machine to time out on the ANSam tone and scale down to G3 speeds by initiating V.21 negotiations.

One-Gateway and Two-Gateway Solutions for Configuring SG3 Fax Machines at G3 Speeds

The fax relay support for SG3 fax machines at G3 speeds feature supports both the one-gateway and two-gateway solutions:

- With a one-gateway solution, the gateway on one end of the call can be configured to suppress the SG3 V.8 fax CM message independently of the gateway on the other end of the call. The one-gateway solution suppresses the fax CM tone on both TDM and IP interfaces (TI C5510 DSPs only), and can interoperate with third-party gateways when the fax CM tone suppression gateway is the originating gateway.
- With a two-gateway solution, the gateways on both ends of the call must have this feature enabled. The two-gateway solution suppresses the fax CM tone only on the time-division multiplexing (TDM) interface (TI C5421 and TI C549 DSPs). Both gateways must support this feature to interoperate at G3 speeds, or the fax tone suppression gateway must be the originating gateway.

Note If both the originating gateway and the terminating gateways are configured for V.8 fax CM message suppression, the suppression occurs on the originating gateway.

Supported Platforms

This feature supports MGCP, SIP, and H.323 signaling types and is enabled by default on TI C5421, TI C549, and TI C5510 digital signal processor (DSP) firmware. You can use SG3 V.8 fax CM message suppression on top of existing features, like named signaling event (NSE)-based T.38 fax relay or Cisco fax relay.

Table 1 lists the DSPs, network modules, and platforms supported by the fax-relay support for SG3 fax machines at G3 speeds feature.

Table 1 Supported DSPs, Network Modules, and Platforms

DSPs	Network Modules	Platforms
TI C549	NM-HDV	Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series.
TI C5421	NM-HDA and all associated expansion modules (EMs)	Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series.
	AIM-Voice-30	Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series.

Table 1 Supported DSPs, Network Modules, and Platforms (continued)

DSPs	Network Modules	Platforms
TI C5510	NM-HD-1V, NM-HD-2V, NM-HD-2VE, and all associated voice interface cards (VICs)	Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series. **Note** The Cisco 2801 does not support network modules.
	NM-HDV2, NM-HDV2-1T1/E1, NM-HDV2-2T1/E1	Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series. All platforms require PVDM2 module.
	EVM-HD-8FXS/DID, and all associated EMs	Cisco 2600XM series, Cisco 2691, Cisco 2800 series, Cisco 3600 series, Cisco 3700 series, and Cisco 3800 series. All platforms require PVDM2 module.
	IAD2430/VGA224. No Skinny Client Control Protocol (SCCP) support for fax or modem	Line side high-density analog gateways.
	DSPs are directly on the motherboard instead of on a network module.	Cisco 2800 series and Cisco 3800 series. **Note** The Cisco 2801 supports DSPs only on the motherboard.

How to Configure Fax-Relay Support for SG3 Fax Machines at G3 Speeds

This sections describes the following tasks for configuring fax-relay support for SG3 fax machines at G3 speeds:

Configuring Fax-Relay Support for SG3 Fax Machines at G3 Speeds Globally for T.38 Fax Relay and Cisco Fax Relay

For H.323 and SIP signaling types, the SG3 V.8 fax CM message suppression can be configured at the globally or on the VoIP dial-peer.

Note Fax-relay parameters that are set for an individual dial peer under the **dial-peer voice** command take precedence over global settings made under the **voice service voip** command.

Use the following steps to configure SG3 V.8 fax CM message suppression globally:

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice service voip**
4. **fax-relay sg3-to-g3**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**voice service voip** **Example:** `Router(config)# voice service voip`	Enters voice-service configuration mode.
Step 4	**fax-relay sg3-to-g3** **Example:** `Router(config-voi-serv)# fax-relay sg3-to-g3`	Specifies that for SIP and H.323 signaling types, V.8 fax CM message suppression is enabled for all dial peers on the DSP firmware. Enabled by default.

Configuring Fax-Relay Support for SG3 Fax Machines at G3 Speeds for a Specific Dial Peer for T.38 Fax Relay and Cisco Fax Relay

Use the following steps to configure SG3 V.8 fax CM message suppression for a specific VoIP dial peer:

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **dial-peer voice** *tag* **voip**
4. **fax-relay sg3-to-g3** *system*

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**dial-peer voice** *tag* **voip** **Example:** `Router(config)# dial-peer voice 25 voip`	Enters dial-peer configuration mode.
Step 4	**fax-relay sg3-to-g3** *system* **Example:** `Router(config-dial-peer)# fax-relay sg3-to-g3 system`	Enabled by default, this command specifies that for SIP and H.323 signaling types, V.8 fax CM message suppression is enabled on the specific dial peer. • **system**—Uses the protocol set under the voice-service configuration mode.

Configuring Fax-Relay Support for SG3 Fax Machines at G3 Speeds Globally for MGCP T.38 Fax-Relay

Use the following steps to configure SG3 V.8 fax CM message suppression for MGCP fax relay:

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **mgcp fax-relay sg3-to-g3**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**mgcp fax-relay sg3-to-g3** **Example:** `Router(config)# mgcp fax-relay sg3-to-g3`	Specifies that for MGCP signaling types, V.8 fax CM message suppression is enabled DSP firmware. **Note** The **mgcp fax-relay sg3-to-sg3** command is used for CA-controlled MGCP fax relay and gateway-controlled MGCP fax relay.

Troubleshooting Tips

Use the following **debug** commands to trace the SG3 V.8 fax CM message suppression:

- **debug voip dsmp**—Displays debugging information for the Distributed Stream Media Processor (DSMP) and its related applications.
- **debug voip dspapi**—Displays troubleshooting information for the digital signal processor (DSP) application programming interface (API).
- **debug voip hpi**—Displays debugging information for host port interface (HPI) message events.

To display the configuration for:

- H.323 and SIP—Use the **show dial-peer voice** command
- MGCP—Use the **show mgcp** command

Configuration Examples for Fax-Relay Support for SG3 Fax Machines at G3 Speeds

This section provides the following configuration examples for fax relay support for SG3 fax machines at G3 speeds:

- SG3 Message Suppression Enabled on MGCP VoIP Dial Peer: Example, page 10
- SG3 Message Suppression Disabled for MGCP: Example, page 11
- SG3 Message Suppresstion Enabled for Fax Portion of Telephony Call Leg: Example, page 12

SG3 Message Suppression Enabled on MGCP VoIP Dial Peer: Example

The following example shows the SG3 fax message suppression feature enabled on an MGCP VoIP dial peer.

```
Router# show dial-peer voice 2000

VoiceOverIpPeer2000
        peer type = voice, information type = voice,
        description = `',
        tag = 2000, destination-pattern = `',
        answer-address = `', preference=0,
        CLID Restriction = None
        CLID Network Number = `'
        CLID Second Number sent
        CLID Override RDNIS = disabled,
        source carrier-id = `', target carrier-id = `',
        source trunk-group-label = `',  target trunk-group-label = `',
        numbering Type = `unknown'
        group = 2000, Admin state is up, Operation state is up,
        incoming called-number = `2...', connections/maximum = 0/unlimited,
        DTMF Relay = disabled,
        modem transport = relay, nse, payload type = 100, codec = g711alaw, , ga
       teway-controlled,
        URI classes:
            Incoming (Called) =
            Incoming (Calling) =
            Destination =
        huntstop = disabled,
        in bound application associated: 'DEFAULT'
        out bound application associated: ''
        dnis-map =
        permission :both
        incoming COR list:maximum capability
        outgoing COR list:minimum requirement
        Translation profile (Incoming):
        Translation profile (Outgoing):
        incoming call blocking:
        translation-profile = `'
        disconnect-cause = `no-service'
        advertise 0x40 capacity_update_timer 25 addrFamily 4 oldAddrFamily 4
        type = voip, session-target = `ipv4:10.2.109.103',
        technology prefix:
        settle-call = disabled
        ip media DSCP = ef, ip signaling DSCP = af31,
        ip video rsvp-none DSCP = af41,ip video rsvp-pass DSCP = af41
        ip video rsvp-fail DSCP = af41,
        UDP checksum = disabled,
        session-protocol = cisco, session-transport = system,
        req-qos = best-effort, acc-qos = best-effort,
        req-qos video = best-effort, acc-qos video = best-effort,
        req-qos audio def bandwidth = 64, req-qos audio max bandwidth = 0,
        req-qos video def bandwidth = 384, req-qos video max bandwidth = 0,
        RTP dynamic payload type values: NTE = 101
        Cisco: NSE=100, fax=96, fax-ack=97, dtmf=121, fax-relay=122
               CAS=123, ClearChan=125, PCM switch over u-law=0,A-law=8
        RTP comfort noise payload type = 19
        fax rate = fax,   payload size =  20 bytes
        fax protocol = system
        fax-relay ecm enable
        Fax Relay SG3-to-G3 Enabled (by system configuration)
        fax NSF = 0xAD0051 (default)
        codec = g729r8,   payload size =  20 bytes,
```

```
Media Setting = flow-through (global)
Expect factor = 10, Icpif = 20,
Playout Mode is set to adaptive,
Initial 60 ms, Max 250 ms
Playout-delay Minimum mode is set to default, value 40 ms
Fax nominal 300 ms
Max Redirects = 1, signaling-type = cas,
VAD = enabled, Poor QOV Trap = disabled,
Source Interface = NONE
voice class sip url = system,
voice class sip rel1xx = system,
redirect ip2ip = disabled
probe disabled,
voice class perm tag = `'
Time elapsed since last clearing of voice call statistics never
Connect Time = 0, Charged Units = 0,
Successful Calls = 0, Failed Calls = 0, Incomplete Calls = 0
Accepted Calls = 0, Refused Calls = 0,
Last Disconnect Cause is "",
Last Disconnect Text is "",
Last Setup Time = 0.
```

SG3 Message Suppression Disabled for MGCP: Example

The following example show that SG3 message suppression is disabled for MGCP signaling types:

```
Router# show runnning config

Building configuration...

Current configuration : 3231 bytes
!
! No configuration change since last restart
!
version 12.3
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Router
!
mgcp
mgcp call-agent ccm service-type mgcp version 0.1
mgcp dtmf-relay voip codec all mode out-of-band
mgcp rtp unreachable timeout 1000 action notify
mgcp modem relay voip mode nse gw-controlled
mgcp package-capability rtp-package
no mgcp package-capability res-package
mgcp package-capability sst-package
no mgcp package-capability fxr-package
mgcp package-capability pre-package
no mgcp timer receive-rtcp
mgcp sdp simple
mgcp fax t38 inhibit
no mgcp fax-relay sg3-to-g3
mgcp rtp payload-type g726r16 static
!
mgcp profile default
```

SG3 Message Suppresstion Enabled for Fax Portion of Telephony Call Leg: Example

The following example shows that the SG3 message suppresion is enabled for the fax portion of the telephony call leg:

```
Router# show call active fax

Telephony call-legs: 1
SIP call-legs: 0
H323 call-legs: 0
Call agent controlled call-legs: 0
SCCP call-legs: 0
Multicast call-legs: 0
Total call-legs: 1

 GENERIC:
SetupTime=2635990 ms
Index=1
PeerAddress=7001
PeerSubAddress=
PeerId=7000
PeerIfIndex=19
LogicalIfIndex=5
ConnectTime=2649400 ms
CallDuration=00:00:08 sec
CallState=4
CallOrigin=2
ChargedUnits=0
InfoType=fax
TransmitPackets=506
TransmitBytes=13616
ReceivePackets=134
ReceiveBytes=2388
TELE:
ConnectionId=[0x635A9A61 0x754B11D7 0x8008C91D 0x82C72093]
IncomingConnectionId=[0x635A9A61 0x754B11D7 0x8008C91D 0x82C72093]
CallID=5
TxDuration=14800 ms
VoiceTxDuration=4150 ms
FaxTxDuration=0 ms
FaxRate=7200 bps
SG3 Fax CM Suppression Type=TDM
NoiseLevel=-69
ACOMLevel=6
OutSignalLevel=-79
InSignalLevel=-73
InfoActivity=1
ERLLevel=6
EchoCancellerMaxReflector=4
SessionTarget=
ImgPages=0
CallerName=
CallerIDBlocked=False
OriginalCallingNumber=
OriginalCallingOctet=0x0
OriginalCalledNumber=
OriginalCalledOctet=0x80
OriginalRedirectCalledNumber=
OriginalRedirectCalledOctet=0x0
TranslatedCallingNumber=7001
TranslatedCallingOctet=0x0
```

```
TranslatedCalledNumber=
TranslatedCalledOctet=0x80
TranslatedRedirectCalledNumber=
TranslatedRedirectCalledOctet=0x0
GwCollectedCalledNumber=9102
DSPIdentifier=3/1:1
Telephony call-legs: 1
SIP call-legs: 0
H323 call-legs: 0
Call agent controlled call-legs: 0
SCCP call-legs: 0
Multicast call-legs: 0
Total call-legs: 1
```

The following are other **show** commands that can be used to verify that SG3 V.8 fax CM message suppression is correctly configured on the gateway:

- **show mgcp connection**
- **show mgcp profile default**

Additional References

The following sections provide additional references related to fax-relay support for SG3 fax machines at G3 speeds.

Related Documents

Related Topic	Document Title
Cisco Fax over IP user documentation	*Cisco Fax Services over IP Application Guide*
Cisco IOS Voice Configuration Library, including library preface and glossary, other feature documents, and troubleshooting documentation.	*Cisco IOS Voice Configuration Library*
Cisco IOS command references	• *Cisco IOS Debug Command Reference* • *Cisco IOS Voice Command Reference*
Cisco IOS troubleshooting information	*Cisco IOS Voice Troubleshooting and Monitoring Guide*
Cisco MGCP configuration information	*Cisco IOS MGCP and Related Protocols Configuration Guide*
Cisco SIP configuration information	*Cisco IOS SIP Configuration Guide*
Fax troubleshooting	*Fax Relay Troubleshooting Guide*

Standards

Standard	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	

MIB

MIB	MIBs Link
No new or modified MIBs are supported by this feature, and support for existing MIBs has not been modified by this feature.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
No new or modified RFCs are supported by this feature, and support for existing RFCs has not been modified by this feature.	

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

This section documents the following new commands:

- **fax-relay sg3-to-g3**
- **mgcp fax-relay sg3-to-g3**

fax-relay sg3-to-g3

To enable the fax stream between two Super Group 3 (SG3) fax machines to negotiate down to G3 speeds on a VoIP dial peer, use the **fax-relay sg3-to-g3** command in dial-peer configuration mode or voice-service configuration mode. To disable SG3 fax message suppression, use the **no** form of this command.

fax-relay sg3-to-g3 [*system*]

no fax-relay sg3-to-g3

Syntax Description.

system	(Optional) Used only in dial-peer configuration mode, this argument specifies the use of the protocol set under the voice-service configuration mode.

Command Default

Disabled

Command Modes

Dial-peer configuration
Voice-service configuration

Command History

Release	Modification
12.4(4)T	This command was introduced.
12.4(6)T	This feature was implemented on the Cisco 1700 series and Cisco 2800 series.

Usage Guidelines

When this command is entered, the digital signal processor (DSP) fax-relay firmware suppresses the V.8 call menu (CM) tone and the fax machines negotiate down to G3 speeds for the fax stream.

Use this command for H.323 and Session Initiaton Protocol (SIP) signaling types.

The command behavior is the same in dial-peer configuration mode and voice-service configuaration mode. The *system* argument is used only in dial-peer configuration mode.

Examples

The following global configuration output shows SG3 V.8 fax CM message suppression being enabled for all VoIP dial peers:

```
Router(config)# voice service voip
Router(config-voi-serv)# fax-relay sg3-to-g3
```

The following dial-peer configuration output shows SG3 V.8 fax CM message suppression being enabled on the voice dial peer for H.323 and SIP signaling types:

```
Router(config)# dial-peer voice 25 voip
Router(config-dial-peer)# fax-relay sg3-to-g3
```

Related Commands

Command	Description
fax protocol (dial-peer)	Specifies the fax protocol to be used for a specific VoIP dial peer.
fax protocol t38 (dial-peer)	Specifies the ITU-T T.38 standard fax protocol to be used for a specific VoIP dial peer.
mgcp fax-relay sg3-to-g3	Specifies that, for MGCP signaling types, V.8 fax CM message suppression is enabled on the DSP firmware.

mgcp fax-relay sg3-to-g3

To enable the fax stream between two Super Group 3 (SG3) fax machines to negotiate down to G3 speeds for Media Gateway Control Protocol (MGCP) fax relay, use the **mgcp fax-relay sg3-to-g3** command in global configuration mode. To disable SG3 fax message suppression, use the **no** form of this command.

mgcp fax-relay sg3-to-g3

no mgcp **fax-relay sg3-to-g3**

Syntax Description

This command has no arguments or keywords.

Command Default

Disabled

Command Modes

Global configuration

Command History

Release	Modification
12.4(4)T	This command was introduced.
12.4(6)T	This feature was implemented on the Cisco 1700 series and Cisco 2800 series.

Usage Guidelines

When this command is entered, the digital signal processor (DSP) fax-relay firmware suppresses the V.8 CM tone and the fax machines negotiate down to G3 speeds for the fax stream.

Examples

The following global configuration output shows V.8 fax CM message suppression being enabled on the voice dial peer for MGCP signaling types:

```
Router(config)# mgcp fax-relay sg3-to-g3
```

Related Commands

Command	Description
fax-relay sg3-to-g3	Specifies that, for SIP and H.323 signaling types, V.8 fax CM message suppression is enabled on the DSP firmware.
mgcp fax t38	Specifies MGCP fax T.38 parameters.

Glossary

ANS tone—answer tone. Also called CED tone. A 2100-Hz tone used to disable echo suppression for data transmission.

ANSam—A modified answer tone sent by V.8-capable equipment.

CED tone—called terminal identification tone. Also called ANS tone. A 2100-Hz tone sent by a fax receiver for 3 seconds.

CM—call menu signal. A V.8 signal transmitted from the *call* DCE to indicate modulation modes available in the call DCE. CM consists of a repeating sequence of bits, modulated using a V.21 low-band channel. See joint menu signal (JM).

CNG—calling tone. An 1100-Hz tone transmitted with a cadence of 500 ms CN followed by 3 seconds OFF by the calling fax machine.

DSMP—Distributed Stream Media Processor. The software component that controls the DSP on behalf of the media service provider that handles conference calls. The DSMP also manages packet transmission and reception in fast switching.

HPI—host port interface. The interface used to communicate with TI DSPs.

JM—joint menu signal. A V.8 signal transmitted from the *answer* DCE to indicate modulation modes available jointly in the call and answer DCE. JM consists of a repeating sequence of bits, modulated using a V.21 high-band channel. See call menu signal (CM).

modem pass-through—The transport of modem signals through an IP network using pulse code modulation (PCM)-encoded packets.

modem relay—Modem relay demodulates a modem signal at one voice gateway and passes it as packet data to another voice gateway where the signal is remodulated and sent to a receiving modem. On detection of the modem answer tone, the gateways switch into modem pass-through mode and then, if the call menu (CM) signal is detected, the two gateways switch into modem relay mode.

preamble—A series of seven flags repeated for one second during the start of a fax sequence.

SG3—Super Group 3 fax. A fax machine that supports speeds up to 33.6 kbps using the V.8 and V.34 protocols.

spoof—A spoof is when a gateway receives, changes, and replays a fax tone.

VBD—voice band data. The transport of modem signals over a voice channel of an IP network with the appropriate encoding for modem signals.

Note See *Internetworking Terms and Acronyms* for terms not included in this glossary.