

Verify and Troubleshoot the Cisco IOS MGCP Gateway

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Introduction

This document explains some basic verification and debug steps for the Media Gateway Control Protocol (MGCP) on Cisco routers.

Symptoms

You can potentially encounter this list of symptoms when you configure Cisco CallManager with Cisco IOS MGCP gateways with analog Foreign Exchange Office (FXO) and Foreign Exchange Station (FXS) ports:

- The MGCP gateway does not register with Cisco CallManager. Refer to [MGCP Gateway Registration Failure with Cisco CallManager](#).
- Caller ID does not work on FXO ports. This is because caller ID is not supported with FXO ports when configured for MGCP. Configure the gateway in H.323 mode instead.
- Overhead paging locks up FXO ports during hookflash unless users go completely off-hook. Shut followed by No Shut resets the port. Refer to Cisco bug ID [CSCef62275 \(registered customers only\)](#). This issue is fixed in Cisco IOS® Software Release 12.3(14)T and later.

This document is Part 4 of a six-document set:

1. [Configuring Cisco CallManager 3.x with IOS MGCP Gateways \(Analog FXO, FXS Ports\)](#)
2. [Configuring the Cisco IOS MGCP Gateway](#)
3. [Configure MGCP Gateway and FXO/FXS Ports on a Cisco CallManager Server](#)
4. Verify and Troubleshoot the Cisco IOS MGCP Gateway
5. [Sample of Debug MGCP Packets](#)
6. [Monitor, Reset, and Delete MGCP Gateways for Cisco CallManager](#)

Prerequisites

Requirements

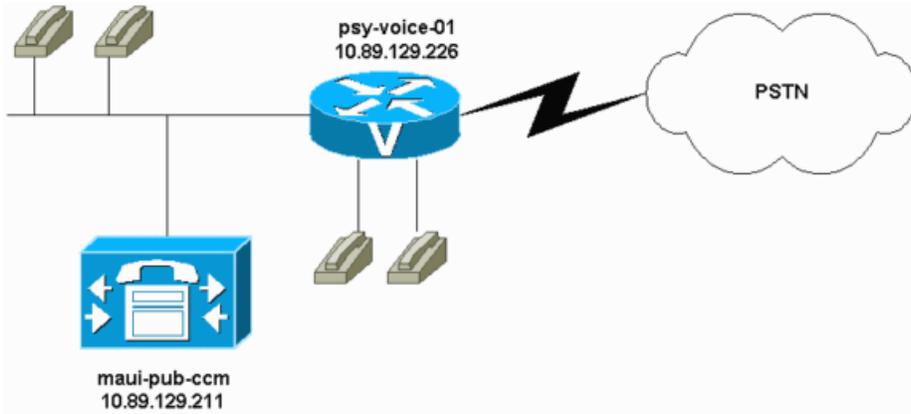
There are no specific requirements for this document.

Components Used

This configuration was tested with Cisco CallManager 3.0, 3.1, and 3.2 and various versions of Cisco IOS Software Release 12.2 images. The screen shots and Cisco IOS software configuration were captured using this software, hardware and other equipment:

- 1 * Cisco 2610 / 2 X FXS / 2 X FXO / 1 FastEthernet 10/100 port; Cisco IOS Software Release 12.2(11)T

- 1 * Cisco CallManager 4.1(0.91) running on an MCS7835
- 2 * Analog handsets
- 2 * Cisco 7960 IP Phones



The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Refer to the [Cisco CallManager Compatibility Matrix](#) for recommended compatibility software versions between Cisco CallManager and the Cisco IOS gateway.

Note: Cisco IOS Software Release 12.2(11)T or later is recommended based on the **ccm-manager** command enhancements. The **ccm-manager** command requires Cisco IOS Software Release 12.1(5) XM or later on all routers (Cisco 2600 and 3600) and the Cisco Voice Gateway 200 (VG200).

The 2600 and 3600 routers support MGCP if they are running Cisco IOS Software Release 12.1(3)T or later. The release and version that you require are based on the features that you need to enable. The Cisco CallManager server must be running version 3.0(5)a or later. The router configuration is the same for all types of routers. The Cisco CallManager configuration is also the same for all types of routers.

The VG200 is supported by Cisco IOS Software Release 12.1(5)XM1 and later releases. The release and version that you require are based on the features that you need to enable. Although the VG200 is supported in earlier releases of Cisco CallManager, version 3.0(5)a or later is recommended.

Conventions

Refer to [Cisco Technical Tips Conventions](#) for more information on document conventions.

Tasks Performed

- [Task 1: Show and Debug Commands to Verify the Configuration](#)
- [Task 2: Shutdown and Enable the Voice Ports](#)

Task 1: Show and Debug Commands to Verify the Configuration

These steps do not need to be performed in the order in which they appear. The **show** commands are useful because they display the current status of the configuration as well as verify that the changes that you made took effect.

- **show ccm-manager**

This command verifies the active and redundant configured Cisco CallManager servers. It also indicates if the gateway is currently registered with the Cisco CallManager.

Note: This **show ccm-manager** command output was captured in a separated environment.

```
psy-voice-01#show ccm-manager
MGCP Domain Name: psy-voice-01
Priority          Status          Host
=====
```

```
Primary          Registered          10.89.129.211
First Backup     None
Second Backup    None
```

```
Current active Call Manager: 10.89.129.211
Backhaul/Redundant link port: 2428
Failover Interval: 30 seconds
Keepalive Interval: 15 seconds
Last keepalive sent: 5w1d (elapsed time: 00:00:04)
Last MGCP traffic time: 5w1d (elapsed time: 00:00:04)
Last failover time: None
Switchback mode: Graceful
MGCP Fallback mode: Not Selected
Last MGCP Fallback start time: 00:00:00
Last MGCP Fallback end time: 00:00:00
```

Configuration Error History:

- **show mgcp**

Use this command to verify the status of the router MGCP parameters. You should see the IP address of the Cisco CallManager server that you use (10.89.129.211, in this case.) All the other parameters are left at their default behavior in this configuration.

```
psy-voice-01#show mgcp
MGCP Admin State ACTIVE, Oper State ACTIVE - Cause Code NONE
MGCP call-agent: 10.89.129.211 Initial protocol service is MGCP 0.1
MGCP block-newcalls DISABLED
MGCP send SGCP RSIP: forced/restart/graceful/disconnected DISABLED
MGCP quarantine mode discard/step
MGCP quarantine of persistent events is ENABLED
MGCP dtmf-relay voip codec all mode out-of-band
MGCP dtmf-relay for VoAAL2 disabled for all codec types
MGCP voip modem passthrough disabled
MGCP voaal2 modem passthrough disabled
MGCP voip modem relay: Disabled.
MGCP TSE payload: 100
MGCP T.38 Named Signalling Event (NSE) response timer: 200
MGCP Network (IP/AAL2) Continuity Test timer: 200
MGCP 'RTP stream loss' timer: 5
MGCP request timeout 500
MGCP maximum exponential request timeout 4000
MGCP gateway port: 2427, MGCP maximum waiting delay 3000
MGCP restart delay 0, MGCP vad DISABLED
MGCP rtrcac DISABLED
MGCP system resource check DISABLED
MGCP xpc-codec: DISABLED, MGCP persistent hookflash: DISABLED
MGCP persistent offhook: ENABLED, MGCP persistent onhook: DISABLED
MGCP piggyback msg ENABLED, MGCP endpoint offset DISABLED
MGCP simple-sdp DISABLED
MGCP undotted-notation DISABLED
MGCP codec type g711ulaw, MGCP packetization period 20
MGCP JB threshold lwm 30, MGCP JB threshold hwm 150
MGCP LAT threshold lwm 150, MGCP LAT threshold hwm 300
MGCP PL threshold lwm 1000, MGCP PL threshold hwm 10000
MGCP CL threshold lwm 1000, MGCP CL threshold hwm 10000
MGCP playout mode is adaptive 60, 4, 200 in msec
MGCP media (RTP) dscp: ef, MGCP signaling dscp: af31
MGCP default package: line-package
MGCP supported packages: gm-package dtmf-package trunk-package line-
                        package
                        hs-package atm-package ms-package dt-package
                        res-package
```

```

mt-package
MGCP Digit Map matching order: shortest match
SGCP Digit Map matching order: always left-to-right
MGCP VoAAL2 ignore-lco-codec DISABLED
MGCP T.38 Fax is ENABLED
MGCP T.38 Fax ECM is DISABLED
MGCP T.38 Fax NSF Override is DISABLED
MGCP T.38 Fax Low Speed Redundancy: 0MGCP T.38 Fax High Speed
Redundancy: 0
MGCP Upspeed payload type for G711ulaw: 0, G711alaw: 8
MGCP Dynamic payload type for G.726-16K codec
MGCP Dynamic payload type for G.726-24K codec
MGCP Dynamic payload type for G.Clear codec

```

Explanation of Fields in show mgcp Command Output

Field	Description
MGCP Admin State...Oper State	The administrative and operational state of the MGCP daemon. The administrative state controls start and stop of the application using the mgcp and mgcp block-newcalls commands. The operational state controls normal MGCP operations.
MGCP call-agent	The address of the call agent specified in the mgcp call-agent or call-agent command and the protocol initiated for this session.
MGCP block-newcalls	The state of the mgcp block-newcalls command.
MGCP send SGCP RSIP...disconnected	The setting for the mgcp sgcp restart notify and the mgcp sgcp disconnected notify commands (ENABLED or DISABLED).
MGCP quarantine mode	How the quarantine buffer is to handle Simple Gateway Control Protocol (SGCP) events.
MGCP quarantine of persistent events is	Whether SGCP persistent events are handled by the quarantine buffer.
MGCP dtmf-relay	The setting for the mgcp dtmf-relay command.
MGCP voip modem passthrough	The settings for mode, codec, and redundancy from the mgcp modem passthrough mode , mgcp modem passthrough codec , and mgcp modem passthrough voip redundancy commands.
MGCP voaal2 modem passthrough	The settings for mode, codec, and redundancy from the mgcp modem passthrough mode and mgcp modem passthrough codec commands.
MGCP TSE payload	The setting for the mgcp tse payload command.
MGCP Network (IP/AAL2) Continuity Test	The setting for the net-cont-test keyword in the mgcp timer command.

timer	
MGCP 'RTP stream loss' timer	The setting for the receive-rtcp keyword in the mgcp timer command.
MGCP request timeout	The setting for the mgcp request timeout command.
MGCP maximum exponential request timeout	The setting for the mgcp request timeout max command.
MGCP gateway port	The User Datagram Protocol (UDP) port specification for the gateway.
MGCP maximum waiting delay	The setting for the mgcp max-waiting-delay command.
MGCP restart delay	The setting for the mgcp restart-delay command.
MGCP vad	The setting for the mgcp vad command.
MGCP rtrcac	Whether MGCP Service Assurance Agent (SAA) Call Admission Control (CAC) has been enabled with the mgcp rtrcac command.
MGCP system resource check	Whether MGCP System Resource Check (SRC) CAC has been enabled with the mgcp src-cac command.
MGCP xpc-codec	Whether the mgcp sdp xpc-codec command has been configured to generate the X-pc-codec field for Session Description Protocol (SDP) codec negotiation in Network-based Call Signaling (NCS) and Trunking Gateway Control Protocol (TGCP).
MGCP persistent hookflash	Whether the mgcp persistent hookflash command has been configured to send persistent hookflash events to the call agent.
MGCP persistent offhook	Whether the mgcp persistent offhook command has been configured to send persistent offhook events to the call agent.
MGCP persistent onhook	Whether the mgcp persistent onhook command has been configured to send persistent onhook events to the call agent.
MGCP piggyback msg	Whether the mgcp piggyback message command has been configured to enable piggyback messaging.
MGCP endpoint offset	Whether the mgcp endpoint offset command has been configured to enable incrementing of the local portion of an endpoint name for NCS. The local portion contains the analog or digital

	voice port identifier.
MGCP simple-sdp	Whether the mgcp sdp simple command has been configured to enable simple mode SDP operation.
MGCP undotted notation	Whether the mgcp sdp notation undotted command has been configured to enable undotted SDP notation for the codec string.
MGCP codec type	The setting for the mgcp codec command.
MGCP packetization period	The packetization period parameter setting for the mgcp codec command.
MGCP JB threshold lwm	The jitter-buffer minimum-threshold parameter setting for the mgcp quality-threshold command.
MGCP JB threshold hwm	The jitter-buffer maximum-threshold parameter setting for the mgcp quality-threshold command.
MGCP LAT threshold lwm	The latency minimum-threshold parameter setting for the mgcp quality-threshold command.
MGCP LAT threshold hwm	The latency maximum-threshold parameter setting for the mgcp quality-threshold command.
MGCP PL threshold lwm	The packet-loss minimum-threshold parameter setting for the mgcp quality-threshold command.
MGCP PL threshold hwm	The packet-loss maximum-threshold parameter setting for the mgcp quality-threshold command.
MGCP CL threshold lwm	The cell-loss minimum-threshold parameter setting for the mgcp quality-threshold command.
MGCP CL threshold hwm	The cell-loss maximum-threshold parameter setting for the mgcp quality-threshold command.
MGCP playout mode is	The jitter-buffer packet type and size.
MGCP IP ToS low delay	The low-delay parameter setting for the mgcp ip-tos command.
MGCP IP ToS high throughput	The high-throughput parameter setting for the mgcp ip-tos command.
MGCP IP ToS high reliability	The high-reliability parameter setting for the mgcp ip-tos command.
MGCP IP ToS low cost	The low-cost parameter setting for the mgcp ip-tos command.
MGCP IP RTP precedence	The rtp precedence parameter setting for the mgcp ip-tos command.
MGCP signaling	The signaling precedence

precedence	parameter setting for the mgcp ip-tos command.
MGCP default package	The package configured as the default package with the mgcp default-package command.
MGCP supported packages	Packages configured with the mgcp package-capability command to be supported on this gateway in this session. The lcr-package display is new in Cisco IOS Software Release 12.3(8)T.
MGCP T.38 Fax	<p>Settings for the mgcp fax t.38 command. These values are displayed:</p> <ul style="list-style-type: none"> • MGCP T.38 fax: ENABLED OR DISABLED. • Error correction mode (ECM): ENABLED OR DISABLED. • Nonstandard facilities (NSF) override: ENABLED OR DISABLED. If enabled, the override code is displayed. • MGCP T.38 fax low-speed redundancy: the factor set on the gateway for redundancy. • MGCP T.38 fax high-speed redundancy: the factor set on the gateway for redundancy.

- **show mgcp endpoint**

Use this command to show the voice ports (endpoints) that are under MGCP control in the router. This command verifies which voice ports have been bound to the MGCP application. This is related to the **application MGCPAPP** command and the **port** commands that were entered under the plain old telephone service (POTS) dial peers in the document [Configuring the Cisco IOS MGCP Gateway](#).

```
psy-voice-01#show mgcp endpoint
aaln/S1/SU0/0@psy-voice-01
aaln/S1/SU0/1@psy-voice-01
aaln/S1/SU1/0@psy-voice-01
aaln/S1/SU1/1@psy-voice-01
```

- **show mgcp connection**

Use this command to display any active MGCP connections. The endpoint is Slot1/Module 0/Port 0. This corresponds to the MGCP Member Configuration identifier in Cisco CallManager. This tells you which port on the router is the endpoint in the call.

!There is one active call in this command output:

```
psy-voice-01#show mgcp connection
Endpoint      Call_ID(C) Conn_ID(I) (P)ort (M)ode (S)tate (CO)dec
(E)vent[SIFL] (R)esult[EA]
1. aaln/S1/SU0/0          C=A00000000100007c000000F5,14,15 I=0x6 P=
17068,19094
M=3 S=4,4 CO=1 E=2,10,0,2 R=0,0
```

Explanation of Fields in show mgcp connection

Command Output

Endpoint	The endpoint for each call shown in the digital endpoint naming convention of slot number (S0) and digital line (DS1-0) number (1).
Call_ID (C)	The MGCP call ID sent by the call agent, the internal call control application programming interface (CCAPI) call ID for this endpoint, and the peer call legs CCAPI call ID. (CCAPI is an application programming interface [API] to provide call control facilities to applications.)
Conn_ID (I)	The connection ID generated by the gateway and sent in the acknowledgment message.
(P)ort	The ports used for this connection. The first port is the local UDP port. The second port is the remote UDP port.
(M)ode	The call mode, for which: 0—Indicates an invalid value for mode. 1—Indicates the gateway should only send packets. 2—Indicates the gateway should only receive packets. 3—Indicates the gateway can send and receive packets. 4—Indicates the gateway should neither send nor receive packets. 5—Indicates the gateway should place the circuit in loopback mode. 6—Indicates the gateway should place the circuit in test mode. 7—Indicates the gateway should use the circuit for network access for data. 8—Indicates the gateway should place the connection in network loopback mode. 9—Indicates the gateway should place the connection in network continuity test mode. 10—Indicates the gateway should place the connection in conference mode. All other values are used for internal debug purposes.
(S)tate	The call state. The values are used for internal debug purposes.
(C)odec	The codec identifier. The values are used for internal debug purposes.
(E)vent [SIFL]	Used for internal debug purposes.
(R)esult [EA]	Used for internal debug purposes.

- **show voice port** *mod_number/slot_number/port_number*

Use this command to verify the current status and configuration of the voice ports on the router.

This is sample output from the **show voice port** command for an FXO voice port:

```
psy-voice-01#show voice port 1/1/0

Foreign Exchange Office 1/1/0 Slot is 1, Sub-unit is 1, Port is 0
Type of VoicePort is FXO
Operation State is DORMANT
Administrative State is UP
No Interface Down Failure
Description is not set
Noise Regeneration is enabled
Non Linear Processing is enabled
Non Linear Mute is disabled
Non Linear Threshold is -21 dB
Music On Hold Threshold is Set to -38 dBm
In Gain is Set to 0 dB
```

Out Attenuation is Set to 3 dB
Echo Cancellation is enabled
Echo Cancellation NLP mute is disabled
Echo Cancellation NLP threshold is -21 dB
Echo Cancel Coverage is set to 8 ms
Playout-delay Mode is set to adaptive
Playout-delay Nominal is set to 60 ms
Playout-delay Maximum is set to 200 ms
Playout-delay Minimum mode is set to default, value 40 ms
Playout-delay Fax is set to 300 ms
Connection Mode is normal
Connection Number is not set
Initial Time Out is set to 10 s
Interdigit Time Out is set to 10 s
Call Disconnect Time Out is set to 60 s
Ringing Time Out is set to 180 s
Wait Release Time Out is set to 30 s
Companding Type is u-law
Region Tone is set for US

Analog Info Follows:

Currently processing none
Maintenance Mode Set to None (not in mtc mode)
Number of signaling protocol errors are 0
Impedance is set to 600r Ohm
Station name None, Station number None
Translation profile (Incoming):
Translation profile (Outgoing):

Voice card specific Info Follows:

Signal Type is loopStart
Battery-Reversal is enabled
Number Of Rings is set to 1
Supervisory Disconnect is signal
Answer Supervision is inactive
Hook Status is On Hook
Ring Detect Status is inactive
Ring Ground Status is inactive
Tip Ground Status is inactive
Dial Out Type is dtmf
Digit Duration Timing is set to 100 ms
InterDigit Duration Timing is set to 100 ms
Pulse Rate Timing is set to 10 pulses/second
InterDigit Pulse Duration Timing is set to 750 ms
Percent Break of Pulse is 60 percent
GuardOut timer is 2000 ms

Note: FXO ports in loopstart mode normally disconnect calls when they detect a second battery reversal (back to normal). Use the **no [battery-reversal](#)** command on FXO ports to disable this action. If an FXO port or its peer FXS port does not support battery reversal, avoid configuring **battery-reversal** or **battery-reversal answer** on the FXO port. On FXO ports that do not support battery reversal, the **battery-reversal** command can cause unpredictable behavior, while the **battery-reversal answer** command prevents calls from being answered. Use the **no [battery-reversal](#)** command to ensure that battery reversal answer is disabled on FXO ports that do not support battery reversal.

Note: This example disables battery reversal on voice port 1/1/0 on a router.

```
voice-port 1/1/0
no battery-reversal
```

This is sample output from the **show voice port** command for an FXS voice port:

```
psy-voice-01#show voice port 1/0/0
```

Foreign Exchange Station 1/0/0 Slot is 1, Sub-unit is 0, Port is 0
 Type of VoicePort is FXS
 Operation State is UP
 Administrative State is UP
 No Interface Down Failure
 Description is not set
 Noise Regeneration is enabled
 Non Linear Processing is enabled
 Non Linear Mute is disabled
 Non Linear Threshold is -21 dB
 Music On Hold Threshold is Set to -38 dBm
 In Gain is Set to 0 dB
 Out Attenuation is Set to 3 dB
 Echo Cancellation is enabled
 Echo Cancellation NLP mute is disabled
 Echo Cancellation NLP threshold is -21 dB
 Echo Cancel Coverage is set to 8 ms
 Playout-delay Mode is set to adaptive
 Playout-delay Nominal is set to 60 ms
 Playout-delay Maximum is set to 200 ms
 Playout-delay Minimum mode is set to default, value 40 ms
 Playout-delay Fax is set to 300 ms
 Connection Mode is normal
 Connection Number is not set
 Initial Time Out is set to 10 s
 Interdigit Time Out is set to 10 s
 Call Disconnect Time Out is set to 60 s
 Ringing Time Out is set to 180 s
 Wait Release Time Out is set to 30 s
 Companding Type is u-law
 Region Tone is set for US

Analog Info Follows:

Currently processing unknown
 Maintenance Mode Set to None (not in mtc mode)
 Number of signaling protocol errors are 0
 Impedance is set to 600r Ohm
 Station name None, Station number None
 Translation profile (Incoming):
 Translation profile (Outgoing):

Voice card specific Info Follows:

Signal Type is loopStart
 Ring Frequency is 25 Hz
 Hook Status is Off Hook
 Ring Active Status is inactive
 Ring Ground Status is inactive
 Tip Ground Status is inactive
 Digit Duration Timing is set to 100 ms
 InterDigit Duration Timing is set to 100 ms
 No disconnect acknowledge
 Ring Cadence is defined by CPTone Selection
 Ring Cadence are [20 40] * 100 msec
 Ringer Equivalence Number is set to 1

Explanation of Fields in show voice port Command Output

Administrative State	Administrative state of the voice port.
Alias	User-supplied alias for this voice port.
Clear Wait	Time of inactive seizure signal

Duration Timing	to declare call cleared.
Connection Mode	Connection mode of the interface.
Connection Number	Full E.164 (ITU-T) telephone number used to establish a connection with the trunk or private line, automatic ringdown (PLAR) mode.
Currently processing	Type of call currently being processed: none, voice, or fax.
Delay Duration Timing	Maximum delay signal duration for delay dial signaling.
Delay Start Timing	Timing of generation of delayed start signal from detection of incoming seizure.
Dial Type	Out-dialing type of the voice port.
Digit Duration Timing	Dual tone multifrequency (DTMF) digit duration in milliseconds.
E&M Type	Type of ear and mouth (E&M) interface.
Echo Cancel Coverage	Echo cancel coverage for this port.
Echo Cancellation	Whether echo cancellation is enabled for this port.
Hook Flash Duration Timing	Maximum length of hook flash signal.
Hook Status	Hook status of the FXO/FXS interface.
Impedance	Configured terminating impedance for the E&M interface.
In Gain	Amount of gain inserted at the receiver side of the interface.
In Seizure	Incoming seizure state of the E&M interface.
Initial Time Out	Amount of time the system waits for an initial input digit from the caller.
InterDigit Duration Timing	DTMF interdigit duration in milliseconds.
InterDigit Pulse Duration Timing	Pulse dialing interdigit timing in milliseconds.
Interdigit Time Out	Amount of time the system waits for a subsequent input digit from the caller.
Maintenance Mode	Maintenance mode of the voice port.
Music On Hold Threshold	Configured Music On Hold threshold value for this interface.
Noise Regeneration	Whether background noise should be played to fill silent gaps if voice activity detection (VAD) is activated.
Number of signaling protocol errors	Number of signaling protocol errors.
Non Linear Processing	Whether nonlinear processing is enabled for this port.

Operation State	Operation state of the port.
Operation Type	Operation of the E&M signal: two-wire or four-wire.
Out Attenuation	Amount of attenuation inserted at the transmit side of the interface.
Out Seizure	Outgoing seizure state of the E&M interface.
Port	Port number for this interface associated with the voice interface card.
Pulse Rate Timing	Pulse dialing rate in pulses per second.
Region Tone	Configured regional tone for this interface.
Ring Active Status	Ring active indication.
Ring Frequency	Configured ring frequency for this interface.
Ring Ground Status	Ring ground indication.
Signal Type	Type of signaling for a voice port: loop-start, ground-start, wink-start, immediate, or delay-dial.
Slot	Slot used in the voice interface card for this port.
Sub-unit	Subunit used in the voice interface card for this port.
Tip Ground Status	Tip ground indication.
Type of VoicePort	Type of voice port: FXO, FXS, or E&M.
The Interface Down Failure Cause	Text string that describes why the interface is down.
Wink Duration Timing	Maximum wink duration for wink start signaling.
Wink Wait Duration Timing	Maximum wink wait duration for wink start signaling.

- **show mgcp statistics**

Use this command to show statistical information related to MGCP activity on the router.

```

psy-voice-01#show mgcp statistics
UDP pkts rx 114, tx 116
Unrecognized rx pkts 0, MGCP message parsing errors 0
Duplicate MGCP ack tx 0, Invalid versions count 0
CreateConn rx 5, successful 5, failed 0
DeleteConn rx 4, successful 4, failed 0
ModifyConn rx 2, successful 2, failed 0
DeleteConn tx 0, successful 0, failed 0
NotifyRequest rx 20, successful 20, failed 0
AuditConnection rx 0, successful 0, failed 0
AuditEndpoint rx 4, successful 4, failed 0
RestartInProgress tx 2, successful 2, failed 0
Notify tx 78, successful 78, failed 0
ACK tx 35, NACK tx 0
ACK rx 79, NACK rx 0

```

IP address based Call Agents statistics:
 IP address 10.89.129.211, Total msg rx 114,
 successful 114, failed 0
 System resource check is DISABLED. No available statistic

**Explanation of Fields in show mgcp statistics
 Command Output**

UDP pkts	The number of UDP packets received (rx) and transmitted (tx).
Unrecognized rx pkts	The number of packets received that are of unknown type.
MGCP message parsing errors	The number of MGCP message parsing errors.
Duplicate MGCP ack tx	The number of duplicate MGCP transmission acknowledgment messages.
Invalid versions count	The number of invalid versions.
CreateConn rx	The number of Create Connection messages received from the call agent by the media gateway. Messages received are classified as successful or failed.
DeleteConn rx	The number of Delete Connection messages received from the call agent by the media gateway. Messages received are classified as successful or failed.
ModifyConn rx	The number of Modify Connection messages received from the call agent by the media gateway. Messages received are classified as successful or failed.
DeleteConn tx	The number of Delete Connection messages sent by the call agent. Messages received are classified as successful or failed.
NotifyRequest rx	The number of Notify messages received by the call agent from the media gateway. Messages received are classified as successful or failed.
AuditConnection rx	The number of Audit Connection messages received from the call agent by the media gateway. Messages received are classified as successful or failed.
AuditEndpoint rx	The number of Audit Endpoint messages received from the call agent by the media gateway. Messages received are classified as successful or failed.
RestartInProgress tx	The number of Restart In Progress (RSIP) messages transmitted by the call agent. Messages received are

	classified as successful or failed.
Notify tx	The number of Notify messages transmitted by the call agent. Messages received are classified as successful or failed.
ACK tx	The number of acknowledgment messages transmitted by the call agent.
NACK tx	The number of negative acknowledgment messages transmitted by the call agent.
ACK rx	The number of acknowledgment messages received by the gateway.
NACK rx	The number of negative acknowledgment messages received by the gateway.
IP address	The IP address of the call agent.
Total msg rx	The total number of messages received by the gateway. Messages received are classified as successful or failed.

- **debug mgcp [all | errors | events | packets | parser]**

Use these commands when you experience problems that you believe are not related to configuration errors or hardware problems. Keep an example of each **debug** command from a working configuration to use for comparison when you experience problems.

Refer to [Sample of Debug MGCP Packets](#) in order to understand the meaning of the output from the **debug mgcp packet** command.

Refer to [Important Information on Debug Commands](#) before you issue any of the **debug** commands.

Task 2: Shutdown and Enable the Voice Ports

In some instances it might be necessary to shut down and then reenable the voice ports on the MGCP gateway. If calls cannot be made over FXO ports, there is no dial tone on FXS ports, or you experience similar problems, try this step:

```

psy-voice-01(config)#voice-port 1/0/0
psy-voice-0(config-voiceport)#shutdown
Both ports are out of service
psy-voice-0(config-voiceport)#
00:25:44: %LINK-3-UPDOWN: Interface Foreign Exchange Station 1/0/1, changed
state to Administrative Shutdown
00:25:45: %LINK-3-UPDOWN: Interface Foreign Exchange Station 1/0/0, changed
state to Administrative Shutdown
psy-voice-0(config-voiceport)#no shutdown
Both ports are in service

psy-voice-0(config-voiceport)#
00:26:03: %LINK-3-UPDOWN: Interface Foreign Exchange Station 1/0/0,
changed state to up
00:26:03: %LINK-3-UPDOWN: Interface Foreign Exchange Station 1/0/1,
changed state

```

Note: This step is known to resolve several different issues related to problems with FXS and FXO ports.

Troubleshoot

Calls from PSTN are Dropped after they are Transferred Three Times

Calls from the PSTN to an IP phone through an MGCP gateway are dropped after they are transferred for the third time. Calls between the IP phone inside works without this issue.

Solution

This happens when Cisco CallManager sends out an ISDN NOTIFY to the Telco and the Telco side does not support it. After NOTIFY is received three times, the Telco might drop the call. In order to suppress these notify messages to the PSTN, complete these steps.

1. Choose **Service>Service Parameters**, select the **Publisher server IP address** and choose the service as **CallManager**.
2. Click **Advanced** in the Service Parameter page and search for the heading **Clusterwide Parameters (Device - PRI and MGCP Gateway)**.
3. Set the Enable DMS PRI Notify Message from User to Network parameter value to **False** and click on **Update**.

This helps to suppress the NOTIFY messages sent to the PSTN.

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