

# Verify and Troubleshoot the Cisco IOS MGCP Gateway

Document ID: 42106

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## Introduction

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**NetPro Discussion Forums – Featured Conversations**

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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)
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4. Verify and Troubleshoot the Cisco IOS MGCP Gateway
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## Prerequisites

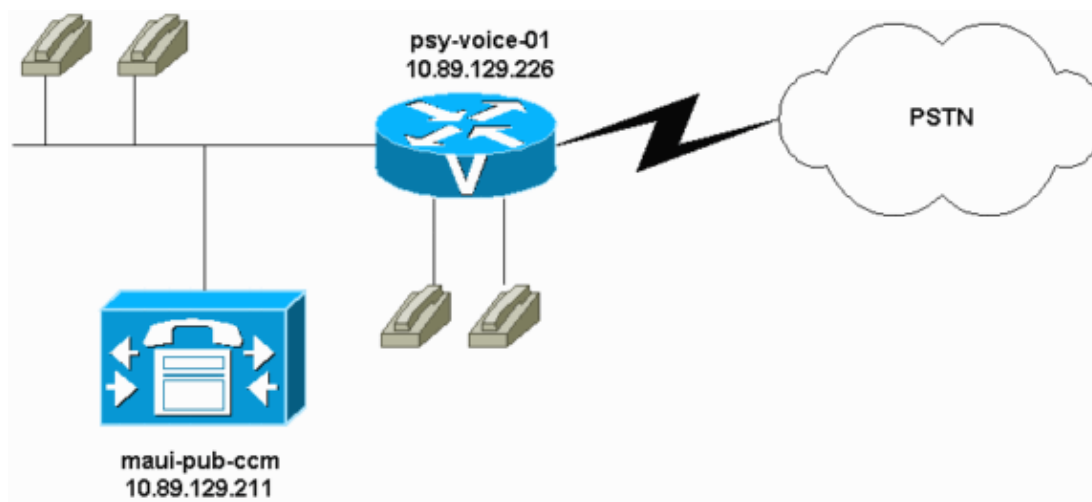
## Requirements

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

```

## 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 timer

The setting for the **net-cont-test** keyword in the **mgcp timer** command.

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 precedence

The **signaling 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

Settings for the **mgcp fax t.38** command. These values are displayed:

- ◆ 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
```

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

Administrative State

Administrative state of the voice port.

Alias

User-supplied alias for this voice port.

Clear Wait Duration Timing

Time of inactive seizure signal 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
```

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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Voice & Video: Unified Communications
Voice & Video: IP Phone Services for Developers
Voice & Video: General

## Related Information

- **How to Configure MGCP with Digital PRI and Cisco CallManager**
- **Voice Technology Support**
- **Voice and Unified Communications Product Support**
- **Recommended Reading: Troubleshooting Cisco IP Telephony**
- **Technical Support & Documentation – Cisco Systems**

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