

验证并且排除Cisco IOS MGCP网关故障

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简介

本文解释介质网关控制协议(MGCP)的一些基本验证和调试步骤在Cisco路由器。

症状

当您配置Cisco CallManager用Cisco IOS MGCP网关用模拟局外交换管理办公室和局外交换站(FXS)端口时，您能潜在遇到症状此列表：

- MGCP网关没有在Cisco CallManager注册。参考[MGCP与Cisco CallManager的网关注册故障](#)。
- 呼叫方ID在FXO端口不运作。这是因为呼叫方ID不支持与FXO端口，当配置为MGCP。请改用H.323 模式来配置网关。
- 除非用户完全摘机，否则在执行瞬间挂机时，空中寻呼会锁定 FXO 端口。在 Shut 后使用 No shut 会重置端口。参考的Cisco Bug ID [CSCef62275 \(仅限注册用户\)](#)。此问题在Cisco IOS软件版本12.3(14)T修复和以后。

本文是文档套件的第4部分：

1. [配置带 IOS MGCP 网关 \(模拟 FXO、FXS 端口 \) 的 Cisco CallManager 3.x](#)
2. [配置 Cisco IOS MGCP 网关](#)
3. [在Cisco CallManager服务器上配置MGCP网关和FXO/FXS端口](#)
4. 验证并且排除Cisco IOS MGCP网关故障
5. [调试 MGCP 包示例](#)
6. [监控、重置和删除Cisco CallManager的MGCP网关](#)

先决条件

要求

本文档没有任何特定的要求。

使用的组件

此配置用Cisco CallManager 3.0，3.1和3.2和Cisco IOS软件版本12.2镜像多种版本测试。使用此软件、硬件和其他设备，屏幕画面和Cisco IOS软件配置捕获：

- 1 *Cisco 2610/2 X FXS/2 X FXO/1快速以太网10/100端口;Cisco IOS软件版本12.2(11)T
- 运行在MCS7835的1 *Cisco CallManager 4.1(0.91)
- 2 *模拟电话听筒
- 2 * Cisco 7960 IP 电话

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

参考推荐的兼容性软件版本的[Cisco CallManager兼容性矩阵](#)在Cisco CallManager和Cisco IOS网关之间。

注意： Cisco IOS软件版本12.2(11)T或以后根据**ccm-manager**命令增强推荐。**ccm-manager**命令要求Cisco IOS软件版本12.1(5)XM或稍后所有路由器(Cisco 2600及3600)和Cisco语音网关200 (VG200)。

如果他们运行Cisco IOS软件版本12.1(3)T或以后，2600和3600路由器支持MGCP。您需要的版本决定于您需要启用的功能。Cisco CallManager服务器一定运行版本3.0(5)a或以上。所有类型路由器的配置是相同。Cisco CallManager配置对于所有类型的路由器都是相同的。

Cisco IOS软件版本12.1(5)xm1及以上版本支持VG200。您需要的版本决定于您需要启用的功能。虽然Cisco CallManager更早版本支持VG200，推荐版本3.0(5)a或以上。

规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

执行的任务

- [任务 1：显示和调试指令验证配置](#)
- [任务 2：关闭并且启用语音端口](#)

任务 1：显示和调试指令验证配置

这些步骤不需要按他们出现的顺序被执行。**显示**命令是有用的，因为他们显示配置的当前状态以及验证您做的变动生效了。

- **show ccm-manager**此命令验证激活和冗余已配置的Cisco CallManager服务器。它也指示网关是否用Cisco CallManager当前注册。**注意：** 此**show ccm-manager**命令输出在一个被分离的环境捕获。

```
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**请使用此命令验证路由器MGCP参数的状况。您应该看到您使用Cisco CallManager服务器的IP地址(10.89.129.211, 在这种情况下。)所有其他参数在此配置方面被留下在他们的默认行为。

```
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: 0 MGCP 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
```

字段说明在show

mgcp命令输出中

- **show mgcp endpoint**请使用此命令显示语音端口(终端)在路由器的MGCP控制下。此命令验证哪些语音端口一定对MGCP应用程序。这与被输入在本文的普通旧式电话服务拨号对端下[配置Cisco IOS MGCP网关的application MGCPAPP命令和端口命令](#)涉及。

```
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**请使用此命令显示所有激活MGCP连接。终端是Slot1/Module 0/Port 0。这对应于在Cisco CallManager的MGCP成员配置标识符。这告诉您路由器的哪个端口是在呼叫的终端。!There是一个激活的呼叫在此命令输出中：

```
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
```

字段说明在show mgcp connection命令输出中
- **show voice port mod_number/slot_number/port_number**请使用此命令验证语音端口的当前状态和配置路由器的。这是从show voice port命令的输出示例: FXO语音端口的：

```
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 **注意：**正常环路启动模式断开呼叫的FXO端口，当他们检测第二电池反极(回到正常)。请使用[no battery-reversal命令](#)在FXO端口禁用此操作。如果FXO端口或其对等体FXS端口不支持电池反极，请避免配置在FXO端口的电池反转或电池反转答案。在不支持电池反极的FXO端口上，[battery-reversal命令](#)能引起无法预测的行为，而[battery-reversal answer命令](#)防止呼叫回答。请使用[no battery-reversal命令](#)保证电池反极答案在不支持电池反极的FXO端口禁用。**注意：**此示例禁用在语音端口1/1/0的电池反极路由器的。voice-port 1/1/0

`no battery-reversal`这是从[show voice port命令](#)的输出示例: FXS语音端口的：`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 **字段说明在show voice port命令输出中**

- **show mgcp statistics**请使用此命令显示统计相关的信息到路由器的MGCP活动。`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 **字段说明在show mgcp statistics命令输出中**

- **调试MGCP包示例[全部|错误|事件|数据包|分析程序]**请使用这些命令，当您遇到您相信与配置错误或硬件故障没有涉及的问题时。当您遇到问题时，请保持其中每一的示例[debug mgcp packet命令](#)的。[关于调试指令的参考的重要信息](#)，在您发出其中一个调试指令前。

任务 2：关闭并且启用语音端口

在某些情况下关闭然后重新激活MGCP网关的语音端口也许是必要的。如果呼叫不可能在FXO端口被做，有在FXS端口的无拨号音，或者您遇到相似的问题，尝试此步骤：

```
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

注意： 此步骤知道解决与问题涉及的几个不同的问题用FXS和FXO端口。

[故障排除](#)

[在他们转接三次后，从PSTN的呼叫丢弃](#)

在他们第三次后，转接从PSTN的呼叫到一个IP电话到MGCP网关丢弃。在IP电话里面之间的呼叫工作，不用此问题。

[解决方案](#)

这发生，当Cisco CallManager派出ISDN通知对Telco，并且电信公司端不支持它。在NOTIFY接收三次后，Telco也许断开呼叫。为了抑制这些请通知消息对PSTN，完成这些步骤。

1. 选择**Service>Service参数**，选择**发布服务器IP地址**并且选择服务作为**CallManager**。
2. 点击**先进**在服务参数页和搜索标题**集群域内参数的(设备- PRI和MGCP网关)**。
3. 设置Enable (event) DMS PRI通知消息从用户到网络参数值对**错误**并且点击**更新**。这帮助抑制通知发送的消息到PSTN。

[相关信息](#)

- [如何在数字 PRI 和 Cisco CallManager 中配置 MGCP](#)
- [语音技术支持](#)
- [语音和统一通信产品支持](#)
- [Cisco IP 电话故障排除](#)
- [技术支持和文档 - Cisco Systems](#)