

# 如何在数字 PRI 和 Cisco CallManager 中配置 MGCP

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## 简介

当您使用Cisco IOS软件版本12.4(5b)时，本文解释如何配置与PRI的介质网关控制协议(MGCP)。本文也展示注册过程、成功的呼入和呼出电话从PSTN，以及调试和Cisco CallManager跟踪呼叫的。

## 症状

当您配置Cisco CallManager用Cisco IOS MGCP网关用PRI端口时，您能潜在遇到这些症状：

- MGCP网关不向Cisco CallManager登记。参考[MGCP网关注册失败用Cisco CallManager](#)欲知更多信息。
- MGCP PRI端口不向Cisco CallManager登记。保证PRI端口连接到有第1层和第2层的电信公司

线路在有效状态。

## 先决条件

### 要求

尝试进行此配置之前，请确保满足以下要求：

- 运行Cisco IOS软件版本12.4(5b)以Cisco IOS网关用数字PRI和Cisco CallManager 4.1。

**注意：**当 PRI 和 MGCP 配合使用时，Cisco CallManager 不支持该配置或无法使用 Fractional PRI。如果部分PRI是必要的您能使用H.323而不是MGCP。

### 使用的组件

本文档中的信息基于以下软件和硬件版本：

- Cisco 2620路由器
- NM-4VWIC-MBRD
- Cisco IOS软件Release12.4(5b)和Cisco IOS软件版本12.4(fc2)
- Cisco CallManager版本4.1

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。

### 相关产品

此设置能也使用这些Cisco IOS网关中的任一：VG200，2600，3600，运行同一个Cisco IOS软件版本。Cisco CallManager版本3.1或以后支持此配置。

### 规则

有关文档规则的详细信息，请参阅 [Cisco 技术提示规则](#)。

## 配置网关

在此部分，您提交以信息配置网关。

**注意：**有关本文档所用命令的详细信息，请使用[命令查找工具](#)（[仅限注册用户](#)）。

### 网络图

本部分使用以下网络设置：



## 配置

本文档使用以下配置：

- AV-2620-4

### AV-2620-4

```
AV-2620-4#show run
version 12.4
no parser cache
no service single-slot-reload-enable
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname AV-2620-4
!
logging rate-limit console 10 except errors
enable secret 5 xxxx
enable password 7xxxx
!
voice-card 1
!
ip subnet-zero
!
!
no ip domain-lookup
!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 172.16.240.124 2427 service-type mgcp
version 0.1
ccm-manager mgcp

!--- These three commands are necessary to enable Cisco
CallManager !--- to control the gateway. This enables
the trombone feature, which !--- is the feature that
lets Cisco CallManager control the gateway. mgcp dtmf-
relay voip codec all mode out-of-band mgcp rtp
unreachable timeout 1000 action notify mgcp modem
passthrough voip mode cisco mgcp sdp simple mgcp
package-capability rtp-package mgcp package-capability
sst-package no mgcp timer receive-rtcp no mgcp explicit
hookstate isdn switch-type primary-ni call rsvp-sync ! !
ccm-manager music-on-hold ccm-manager config server
172.16.240.124 ccm-manager config ! ! controller T1 1/0
framing esf clock source internal linecode b8zs
cablelength short 133 pri-group timeslots 1-24 service
mgcp !! interface FastEthernet0/0 ip address
172.16.15.129 255.255.255.0 ip helper-address
172.16.15.10 no ip mroute-cache duplex auto speed auto !
interface Serial0/2/0:23 no ip address no logging event
link-status isdn switch-type primary-ni isdn incoming-
voice voice isdn T310 10000 isdn bind-l3 ccm-manager no
cdp enable !no ip http server ! snmp-server community
public RO snmp-server community private RW snmp-server
packet-size 4096 ! voice-port 0/2/0:23 ! dial-peer cor
custom ! ! dial-peer voice 9991023 pots application
mgcpapp port 0/2/0:23 !--- application mgcpapp or !---
service MGCPAPP !--- is not required if isdn bind-l3
ccm-manager !--- is applied on the serial interface of
```

```
the T1/E1 !--- that corresponds to the voice-port
mentioned in pots dial-peer.
```

```
!
!
line con 0
  exec-timeout 0 0
line aux 0
line vty 0 4
  exec-timeout 0 0
  password 7 xxxx
  login
line vty 5 15
  login
!
!
end
```

**注意：**使用MGCP，您不能根据呼叫方目录号码(DN)阻塞呼入呼叫。然而，如果使用H323，您能如此执行。

**注意：**在您在MGCP网关后做所有配置更改，请依顺序发出这两global命令在MGCP网关使更改生效。

```
AV-2620-4#show run
version 12.4
no parser cache
no service single-slot-reload-enable
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname AV-2620-4
!
logging rate-limit console 10 except errors
enable secret 5 xxxx
enable password 7xxxx
!
voice-card 1
!
ip subnet-zero
!
!
no ip domain-lookup
!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 172.16.240.124 2427 service-type mgcp version 0.1
ccm-manager mgcp
```

*!--- These three commands are necessary to enable Cisco CallManager !--- to control the gateway. This enables the trombone feature, which !--- is the feature that lets Cisco CallManager control the gateway.* mgcp dtmf-relay voip codec all mode out-of-band mgcp rtp unreachable timeout 1000 action notify mgcp modem passthrough voip mode cisco mgcp sdp simple mgcp package-capability rtp-package mgcp package-capability sst-package no mgcp timer receive-rtcp no mgcp explicit hookstate isdn switch-type primary-ni call rsvp-sync !! ccm-manager music-on-hold ccm-manager config server 172.16.240.124 ccm-manager config !! controller T1 1/0 framing esf clock source internal linecode b8zs cablelength short 133 pri-group timeslots 1-24 service mgcp !! interface FastEthernet0/0 ip address 172.16.15.129 255.255.255.0 ip helper-address 172.16.15.10 no ip mroute-cache duplex auto speed auto ! interface Serial0/2/0:23 no ip address no logging event link-status isdn switch-type primary-ni isdn incoming-voice voice isdn T310 10000 isdn bind-13

```
ccm-manager no cdp enable !no ip http server ! snmp-server community public RO snmp-server
community private RW snmp-server packetsize 4096 ! voice-port 0/2/0:23 ! dial-peer cor custom !
! dial-peer voice 9991023 pots application mgcpapp port 0/2/0:23 !--- application mgcpapp or !---
- service MGCPAPP !--- is not required if isdn bind-13 ccm-manager !--- is applied on the serial
interface of the T1/E1 !--- that corresponds to the voice-port mentioned in pots dial-peer.
```

```
!
!
line con 0
  exec-timeout 0 0
line aux 0
line vty 0 4
  exec-timeout 0 0
  password 7 xxxx
  login
line vty 5 15
  login
!
!
end
```

AV-2620-4#**show run**

```
version 12.4
no parser cache
no service single-slot-reload-enable
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname AV-2620-4
!
logging rate-limit console 10 except errors
enable secret 5 xxxx
enable password 7xxxx
!
voice-card 1
!
ip subnet-zero
!
!
no ip domain-lookup
!
no ip dhcp-client network-discovery
mgcp
mgcp call-agent 172.16.240.124 2427 service-type mgcp version 0.1
ccm-manager mgcp
```

*!--- These three commands are necessary to enable Cisco CallManager !--- to control the gateway. This enables the trombone feature, which !--- is the feature that lets Cisco CallManager control the gateway.* mgcp dtmf-relay voip codec all mode out-of-band mgcp rtp unreachable timeout 1000 action notify mgcp modem passthrough voip mode cisco mgcp sdp simple mgcp package-capability rtp-package mgcp package-capability sst-package no mgcp timer receive-rtcp no mgcp explicit hookstate isdn switch-type primary-ni call rsvp-sync !! ccm-manager music-on-hold ccm-manager config server 172.16.240.124 ccm-manager config !! controller T1 1/0 framing esf clock source internal linecode b8zs cablelength short 133 pri-group timeslots 1-24 service mgcp !! interface FastEthernet0/0 ip address 172.16.15.129 255.255.255.0 ip helper-address 172.16.15.10 no ip mroute-cache duplex auto speed auto ! interface Serial0/2/0:23 no ip address no logging event link-status isdn switch-type primary-ni isdn incoming-voice voice isdn T310 10000 isdn bind-13 ccm-manager no cdp enable !no ip http server ! snmp-server community public RO snmp-server community private RW snmp-server packetsize 4096 ! voice-port 0/2/0:23 ! dial-peer cor custom ! ! dial-peer voice 9991023 pots application mgcpapp port 0/2/0:23 **!--- application mgcpapp** or **!---** **- service MGCPAPP** **!---** is not required if **isdn bind-13 ccm-manager** **!---** is applied on the serial

```

interface of the T1/E1 !--- that corresponds to the voice-port mentioned in pots dial-peer.

!
!
line con 0
  exec-timeout 0 0
line aux 0
line vty 0 4
  exec-timeout 0 0
  password 7 xxxx
  login
line vty 5 15
  login
!
!
end

```

这些MGCP in命令一个相似的顺序用于重置在IOS网关的MGCP。如果其中任一个MGCP接口发生故障，通过发出一关闭和no shutdown命令重置接口在各自的接口配置模式。然后以相似的方式请重置MGCP在网关为了解决问题。

## 验证网关配置

使用本部分可确认配置能否正常运行。

[命令输出解释程序 \( 仅限注册用户 \)](#) (OIT) 支持某些 show 命令。使用 OIT 可查看对 show 命令输出的分析。

- [show ccm-manager](#) —显示注册状态用Cisco CallManager。
- [show mgcp endpoint](#) —显示端口状态。

这些命令输出显示此处：

```

AV-2620-4#show ccm-manager
MGCP Domain Name: AV-2620-4
Priority   Status           Host
=====
Primary   Registered        172.16.240.124
First Backup  None Second Backup  None
Current active Call Manager: 172.16.240.124
Backhaul/Redundant link port: 2428
Failover Interval:      30 seconds
Keepalive Interval:     15 seconds
Last keepalive sent:    00:45:31 (elapsed time: 00:00:04)
Last MGCP traffic time: 00:45:31 (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
PRI Backhaul Link info:
  Link Protocol:      TCP
  Remote Port Number: 2428
  Remote IP Address: 172.16.240.124
  Current Link State: OPEN
  Statistics:
    Packets recvd:    32
    Recv failures:    0
    Packets xmitted:  32

```

```
Xmit failures: 0
PRI Ports being backhauled:
Slot 1, port 0
Configuration Auto-Download Information
=====
No configurations downloaded
Current state: Automatic Configuration Download feature is disabled
Configuration Error History:
FAX mode: cisco
```

```
AV-2620-4#show mgcp endpoint
```

```
Interface T1 0/2/0
```

| ENDPOINT-NAME             | V-PORT   | SIG-TYPE | ADMIN |
|---------------------------|----------|----------|-------|
| S0/SU2/ds1-0/1@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/2@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/3@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/4@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/5@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/6@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/7@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/8@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/9@AV-2620-4  | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/10@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/11@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/12@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/13@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/14@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/15@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/16@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/17@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/18@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/19@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/20@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/21@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/22@AV-2620-4 | 0/2/0:23 | none     | up    |
| S0/SU2/ds1-0/23@AV-2620-4 | 0/2/0:23 | none     | up    |

## 排除故障网关配置

使用本部分可排除配置故障。

**注意：** 使用 `debug` 命令之前，请参阅[有关 Debug 命令的重要信息](#)。

- [MGCP信息包](#)—使您验证网关是否与Cisco CallManager联络。

此命令输出显示此处：

```
AV-2620-4#debug mgcp packet
```

```
Media Gateway Control Protocol packets debugging is on
```

```
AV-2620-4#terminal monitor
```

```
AV-2620-4#
```

```
*Jan 23 05:19:39.703: MGCP Packet sent to 172.16.240.124:2427---->
```

```
NTFY 221919402 *@MGCP MGCP 0.1
```

```
X: 0
```

```
O:
```

```
<--- *Jan 23 05:19:39.771: MGCP Packet received from 172.16.240.124:2427---->
```

```
200 221919402
```

<---

```
*Jan 23 05:19:54.703: MGCP Packet sent to 172.16.240.124:2427--->
NTFY 221919403 *@MGCP MGCP 0.1
X: 0
O:
<---
```

```
*Jan 23 05:19:54.771: MGCP Packet received from 172.16.240.124:2427--->
200 221919403
<---
```

```
*Jan 23 05:20:09.703: MGCP Packet sent to 172.16.240.124:2427--->
NTFY 221919404 *@MGCP MGCP 0.1
X: 0
O:
<---
```

```
*Jan 23 05:20:09.771: MGCP Packet received from 172.16.240.124:2427--->
200 221919404
```

## 配置 Cisco CallManager

此部分描述步骤配置Cisco CallManager，并且提供验证信息和提示排除故障。

### 配置步骤

完成这些步骤配置在Cisco CallManager的网关：

1. 选择在Cisco CallManager管理页的**Device > Gateway**。



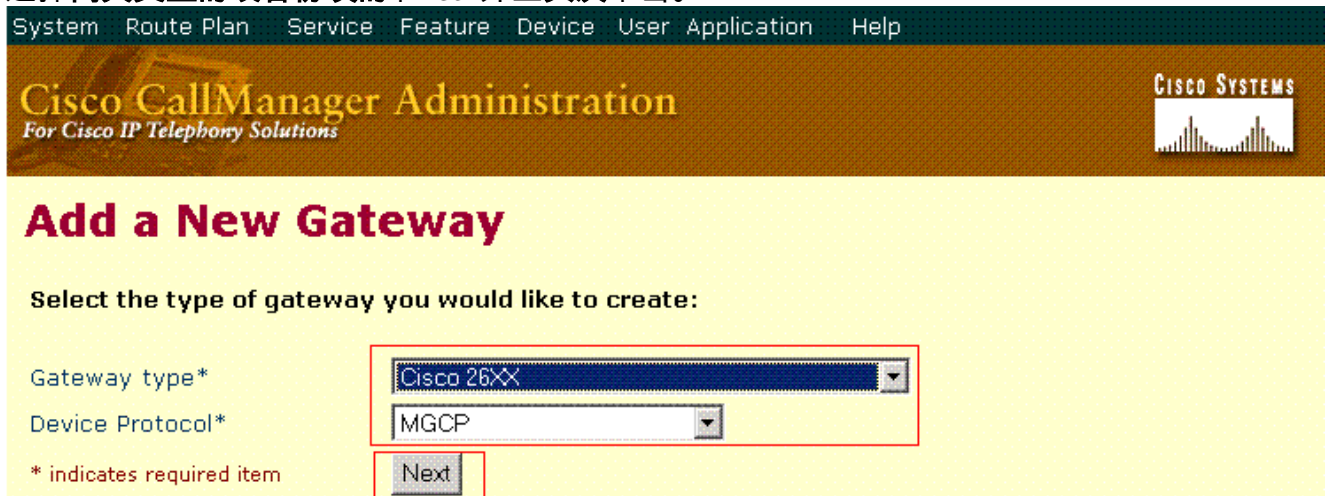
The screenshot shows the Cisco CallManager Administration web interface. The top navigation bar includes 'System', 'Route Plan', 'Service', 'Feature', 'Device', 'User', 'Application', and 'Help'. The 'Device' menu is expanded, showing options: 'Add a New Device', 'CTI Route Point', 'Gatekeeper', 'Gateway' (highlighted with a red box), 'Phone', 'Trunk', and 'Device Settings'. The main content area features the Cisco CallManager logo, a 'Details' button, and copyright information: 'Copyright © 1999 - 2004 Cisco Systems, Inc. All rights reserved.' Below this, there is a paragraph of legal disclaimer text and a link to U.S. laws governing cryptographic products.



2. 点击Add a New Gateway。



3. 选择网关类型的设备协议的和MGCP并且其次单击。



4. 进入路由器的主机名，域名，选择Cisco CallManager组，选择在适当的slot的已安装语音接口卡并且点击插入键。

## Gateway Configuration

[Back to Find/List Gateways](#)**Product:** Cisco 26XX**Protocol:** MGCP**MGCP:** New

Status: Ready

Domain Name\*

AV-2620-4

Description

AV-2620-4

Cisco CallManager Group\*

LAB

**Installed Voice Interface Cards****Endpoint Identifiers**

Module in Slot 0

NM-4VVIC-MBRD

Module in Slot 1

&lt; None &gt;

Module in Slot 2

&lt; None &gt;

**Product Specific Configuration**

5. 选择亚单位的T1卡在已安装语音接口卡slot下并且点击**更新**。对话框看来提示您重置网关。点击OK键然后单击“Reset”。现在，请点击**Close**为了关上窗口。

## Gateway Configuration

[Back to Find/List Gateways](#)**Product:** Cisco 26XX**Protocol:** MGCP**MGCP :** AV-2620-4

Status: Insert completed

Update

Delete

Reset Gateway

Domain Name\*

Description

Cisco CallManager Group\*

**Installed Voice Interface Cards****Endpoint Identifiers**

|                  |   |
|------------------|---|
| Module in Slot 0 | <input type="text" value="NM-4VWIC-MBRD"/>  |
| Subunit 0        | <input type="text" value="&lt; None &gt;"/> |
| Subunit 1        | <input type="text" value="VWIC-1MFT-T1"/>   |
| Subunit 2        | <input type="text" value="&lt; None &gt;"/> |
| Subunit 3        | <input type="text" value="&lt; None &gt;"/> |

6. 点击端点标识符(在本例中， 0/2/0)。

## Gateway Configuration

[Back to Find/List Gateways](#)

**Product:** Cisco 26XX

**Protocol:** MGCP

**MGCP :** AV-2620-4

Status: Update completed




Domain Name\*

Description

Cisco CallManager Group\*

### Installed Voice Interface Cards

### Endpoint Identifiers

Module in Slot 0

Subunit 0

Subunit 1

Subunit 2

Subunit 3

(0/2/ 0) 

#### 7. 选择选项T1-PRI。

## Gateway Configuration

[Back to MGCP Configuration](#)
[Back to Find/List Gateways](#)

Select protocol for this gateway

Device Protocol\*

#### 8. 选择适当的设备池并且点击插入键。

