

# Configuring Cisco CallManager with IOS MGCP Gateways (Analog FXO, FXS Ports)

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## Introduction

This document is a working example of the use of Media Gateway Control Protocol (MGCP) between a Cisco IOS® Gateway (for example, VG200, 2600, 3600, IAD2400) and a Cisco CallManager Media Convergence Server (MCS). It covers the configuration of one foreign exchange office (FXO) connection to the public switched telephone network (PSTN), as well as foreign exchange station (FXS) connections to analog hand sets. This document also shows VoIP connectivity to Cisco 7960 IP phones. When this configuration is complete, it will be possible to make calls between all of the phones used in this configuration. It will also be possible to route calls over the PSTN from any of the phones used in this configuration.

This document assumes that the reader is already familiar with how to configure Cisco IP phones in CallManager. This document also assumes that there is at least one IP phone already active on the Cisco CallManager server.

## Symptoms

You can potentially encounter these symptoms when you configure Cisco CallManager with IOS MGCP gateways with analog FXO and 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. Instead, configure the gateway in H.323 mode.
- Overhead paging locks up the FXO port when doing hookflash unless users go completely off-hook. Perform a shut, no shut to reset the port. This is related to Cisco bug ID CSCef62275 ( registered customers only) and is fixed in Cisco IOS Software Release 12.3(14)T and later.

## Prerequisites

## Requirements

There are no specific requirements for this document.

## Components Used

This configuration was tested with Cisco CallManager versions 3.x and 4.x and various versions of Cisco IOS Software 12.2 images. The screen shots found in the links within this document and the Cisco IOS

configurations listed were captured using the software, hardware and other equipment listed here.

- Cisco VG200 / 2 X FXS / 2 X FXO / 1 FastEthernet 10/100 port
- Various versions of Cisco IOS Software Release 12.2
- Cisco CallManager (specific versions are listed in the individual documents below)
- Analog handsets
- 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.

For recommended compatibility software versions between Cisco CallManager and the IOS Gateway, refer to the Cisco CallManager Compatibility Matrix. If your network has special needs, consult with your Cisco Account Manager before you change any Cisco IOS Software.

**Note:** Cisco recommends Cisco IOS Software Release 12.2(11)T or later 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 (2600, 3600) and the VG200.

Cisco 2600 and 3600 routers support MGCP if they run Cisco IOS Software Release 12.1(3)T or later. The release and version that you require will be based on the features that you need to enable. The router configuration is the same for all types of routers. See the Document Contents section for documentation on specific features and requirements related to Cisco CallManager.

**Note:** NM-HD-2V on an MGCP gateway is supported only from Cisco CallManager 3.3(3)SR4a and later. The NM-HD-2V is not listed as an MGCP Gateway option in Cisco CallManager versions earlier than 3.3(3)SR4a.

## Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

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2. Configuring the Cisco IOS MGCP Gateway
3. Configuring the Cisco CallManager Server
4. Verifying and Troubleshooting the Cisco IOS MGCP Gateway
5. Sample of Debug MGCP Packets
6. Monitor, Reset, and Delete MGCP Gateways for Cisco CallManager

You can use this document as a guide to configure the devices for use in a real network or as a workbook example to use in a lab environment for learning or testing purposes. Sections 4 and 5 are provided for additional information. If the tasks in sections 2 and 3 result in a working configuration, it is not necessary to refer to sections 4, 5 or 6.

**Note:** It is not necessary to do sections 2 and 3 in the order presented.

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## Related Information

- **Voice Technology Support**
  - **Voice and Unified Communications Product Support**
  - **Recommended Reading: Troubleshooting Cisco IP Telephony**
  - **Technical Support & Documentation – Cisco Systems**
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