CallManager MoH uses G.711 Codec while Voice Calls use G.729 Codec Configuration Example

Document ID: 63611

Introduction

In typical Cisco CallManager configurations, voice calls and Music on Hold (MoH) streams that must traverse a low−speed WAN link use the G.729 codec in order to save bandwidth. The use of the G.729 codec for voice or MoH traffic over a WAN link is still recommended. However, in some situations G.729 does not provide adequate quality for MoH streams. This is due to the fact that G.729 codec is optimized for speech. Therefore, it typically provides only marginal audio fidelity for MoH.

In situations where it is determined that G.729 MoH is unacceptable, you can force MoH to use G.711 while you still maintain voice calls at G.729. This is done through the use of the 'region' configuration in Cisco CallManager. When you place the MoH server in a Cisco CallManager region by itself, you can specify what codecs are used between the MoH server and other regions when a user is placed on hold or during network hold. Consequently, voice calls can still use G.729 while MoH is streamed using G.711. This results in better audio quality. This document demonstrates how to achieve this.

Note: This is only supported in centralized Cisco CallManager deployments.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on Cisco CallManager 4.0(1)sr2, but the concept applies to any Cisco CallManager release where regions can be created.

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.

Conventions

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

Cisco CallManager Configuration

In order to focus on the specific configurations needed, assume that you have a central site named HQ. HQ is where the Cisco CallManager server is. You also have one remote site named Remote. The MoH server is configured on the Cisco CallManager itself at the central site.

Note: Media Resource Group configuration and Media Resource Group Lists configuration in Cisco CallManager is beyond the scope of this document. For the purpose of this document, the default SampleAudioSource is used as an audio source.

These steps are required:

1. Create three regions called HQ, Remote, and MoH.
2. Specify the codecs for each region.
3. Create three device pools called HQ_DP, Remote_DP, and MoHServer_DP.
4. Specify the region that corresponds to each device pool. For example, the region for device pool 'HQ_DP' is 'HQ'.
5. Place the IP phones in their equivalent device pool. For example, at the HQ, IP phones are placed in the HQ_DP device pool.
6. Place the MoH server in the MoHServer_DP device pool.
7. Ensure that the correct codecs are selected in the supported MoH codecs in the Cisco IP Voice Media Streaming application.

Step 1: Create the MoH, HQ, and Remote Regions

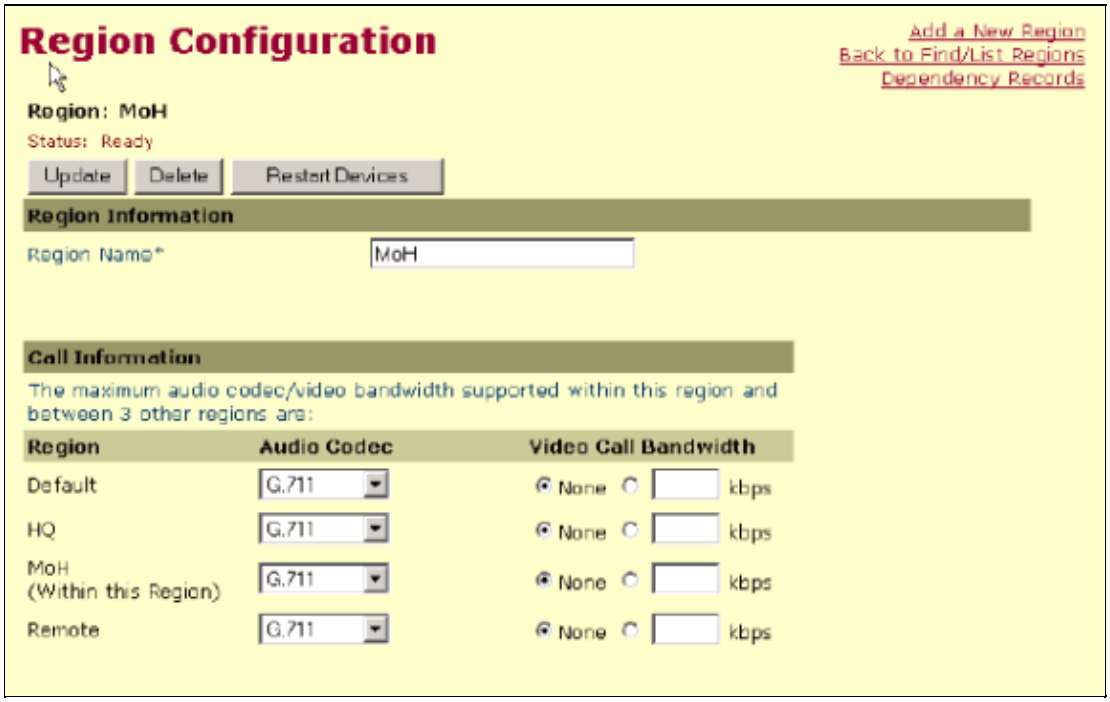
Select **System > Region > Add a New Region** in order to create each of these regions:

- MoH
- HQ
- Remote

Step 2: Specify the Codecs for Each Region

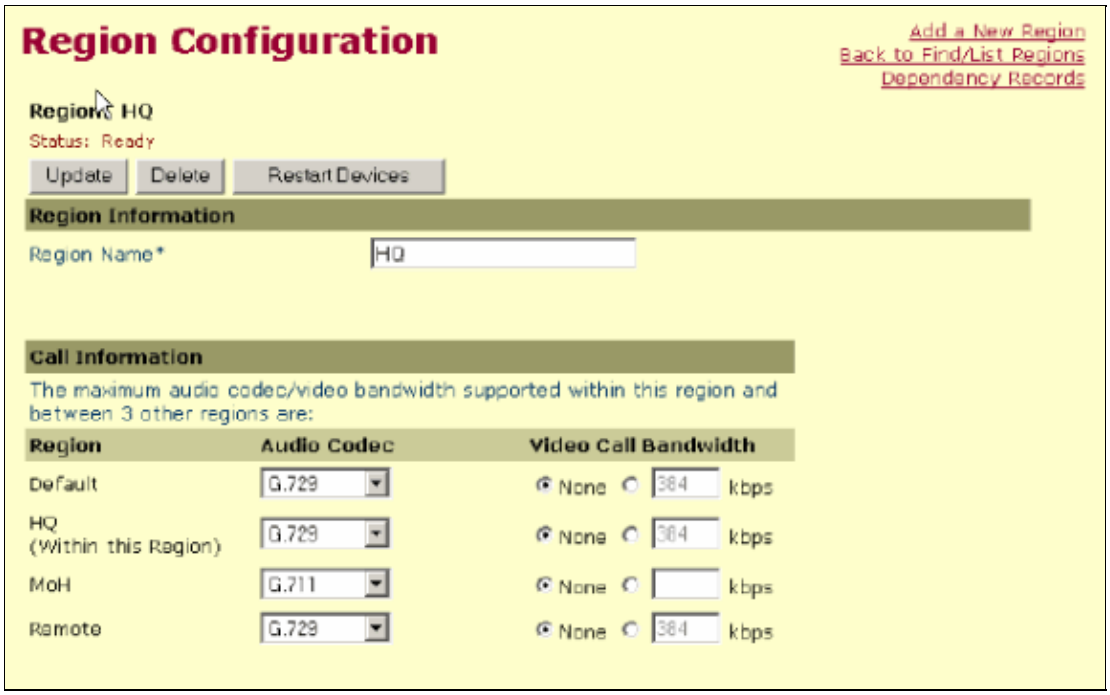
For the MoH region, specify these codecs:

- Default: **G.711**
- HQ: **G.711**
- MoH (Within this Region): **G.711**
- Remote: **G.711**



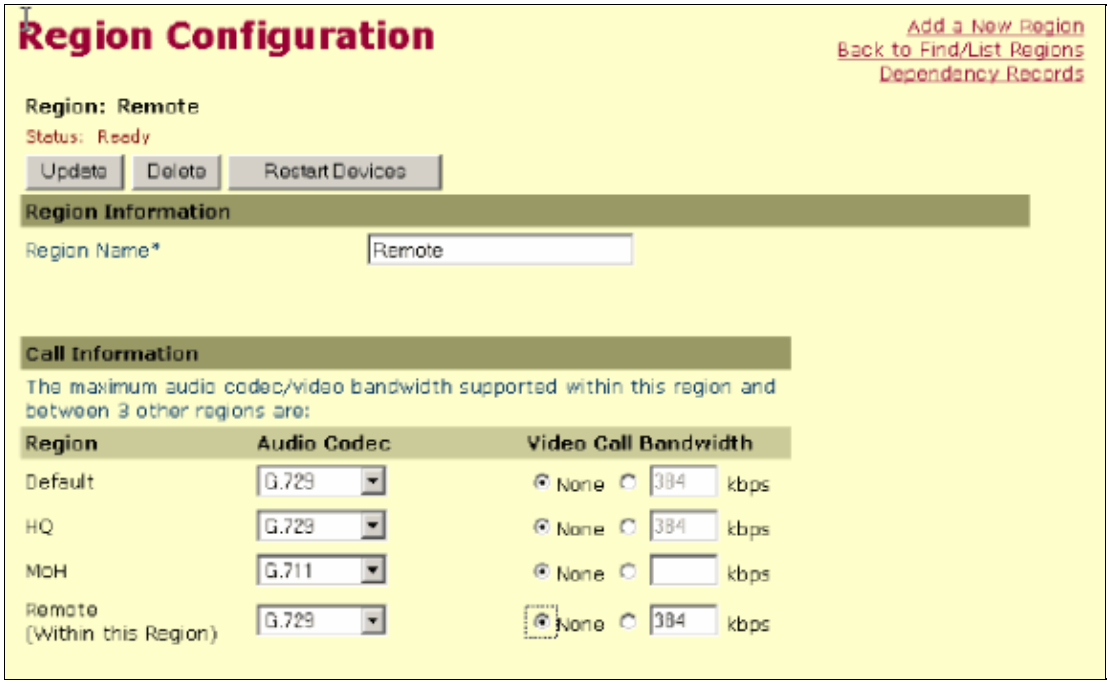
For the HQ region, specify these codecs:

- Default: **G.729**
- HQ (Within this Region): **G.729**
- MoH : **G.711**
- Remote: **G.729**



For the Remote region, specify these codecs:

- Default: **G.729**
- HQ: **G.729**
- MoH: **G.711**
- Remote (Within this Region): **G.729**



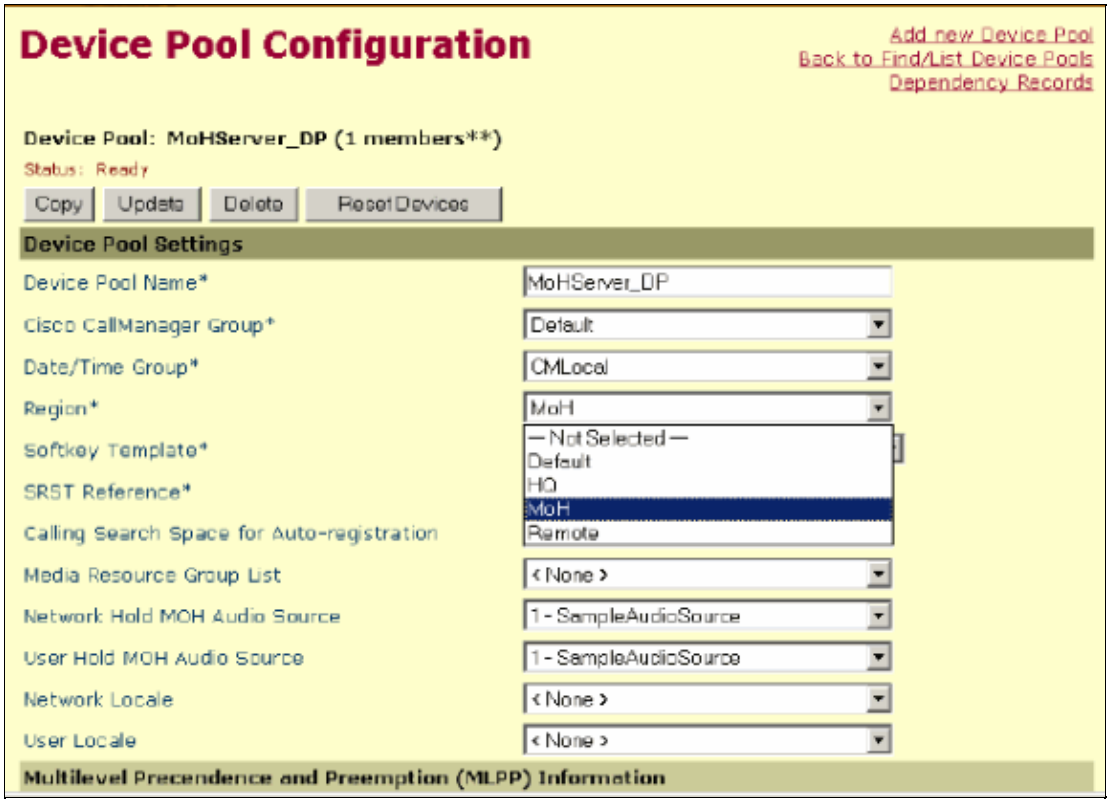
Step 3: Create the HQ_DP, Remote_DP, and MoHServer_DP Device Pools

Select **System > Device Pool > Add a New Device Pool** in order to create these three device pools:

- HQ_DP
- Remote_DP
- MoHServer_DP

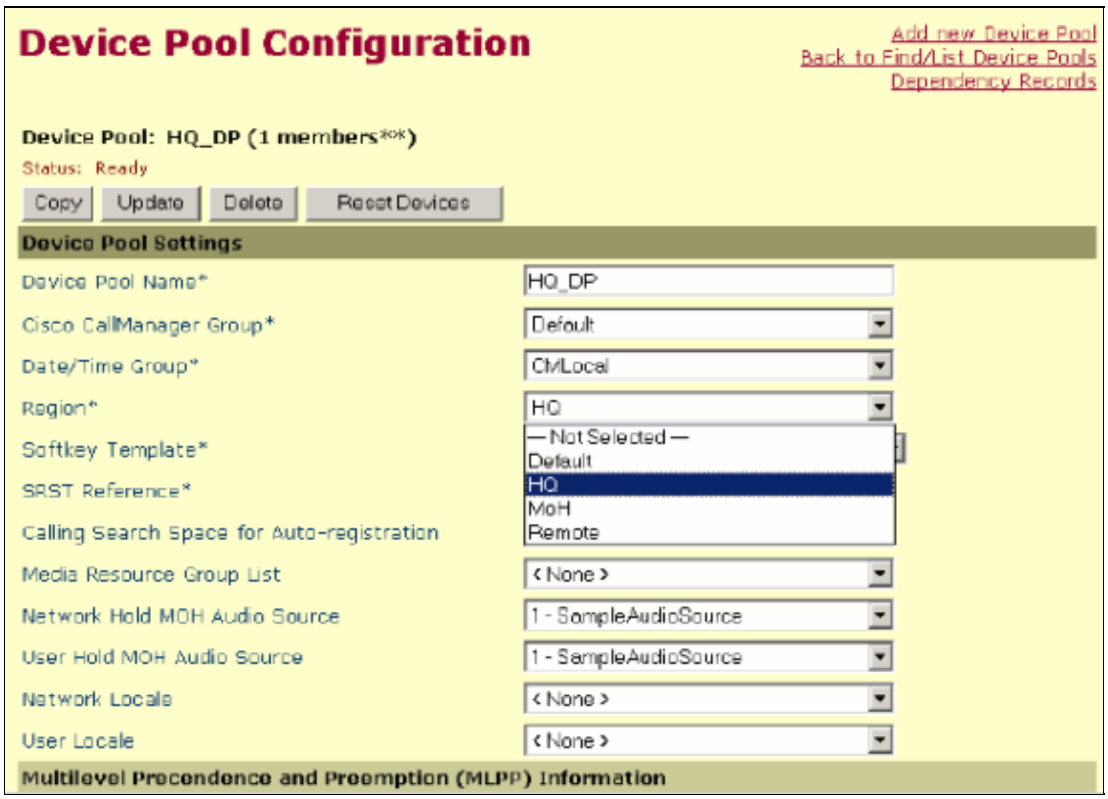
Step 4: Specify the Region that Corresponds to each Device Pool

For the MoHServer_DP device pool, specify **MoH** as the region.

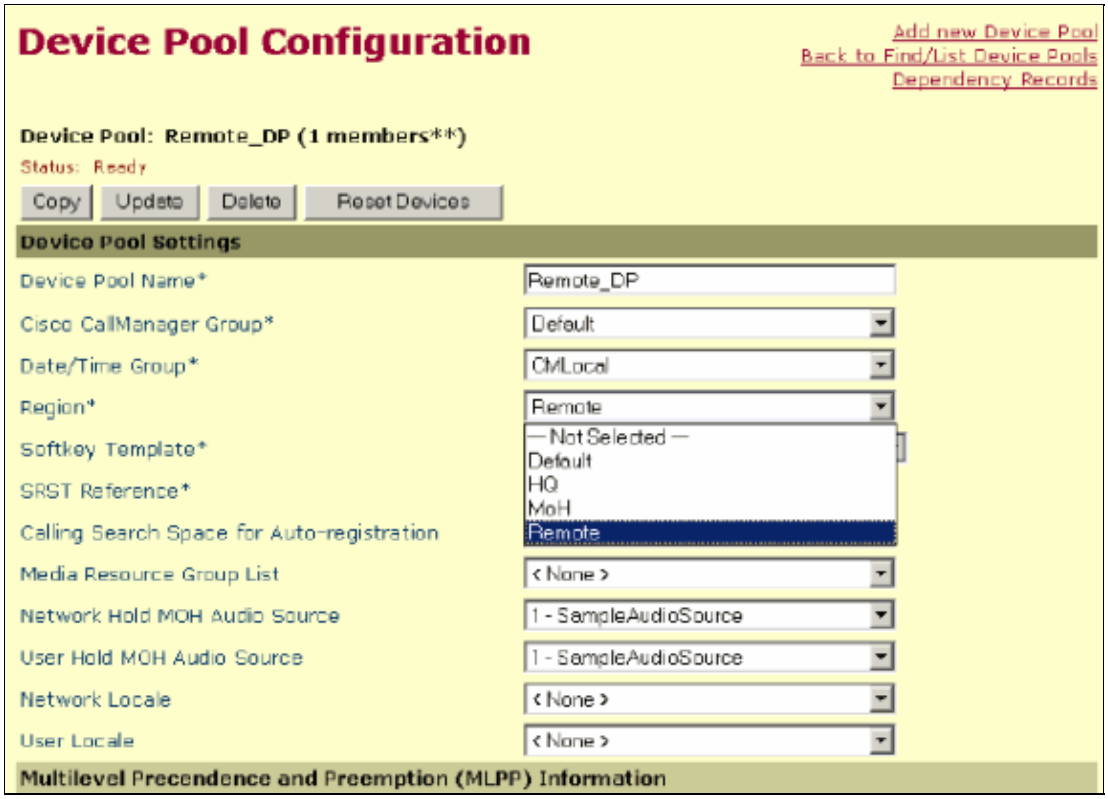


Note: The default SampleAudioSource is used as an audio source that is used by the MoH server.

For the HQ_DP device pool, specify **HQ** as the region.

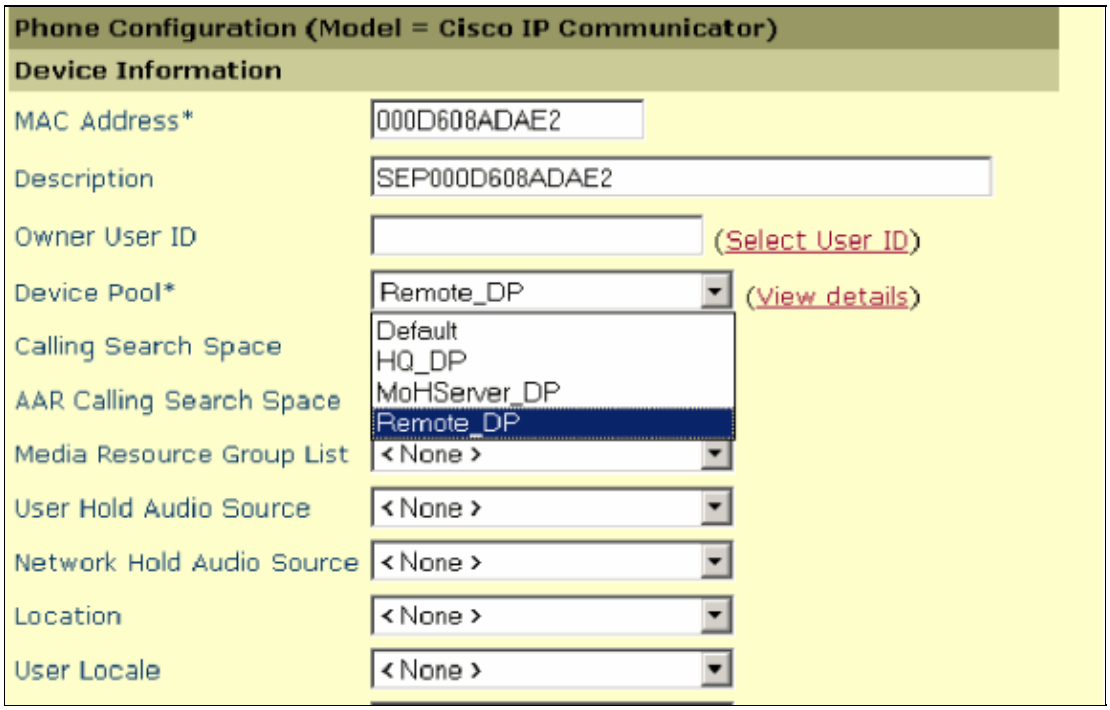


For the Remote_DP device pool, specify **Remote** as the region.

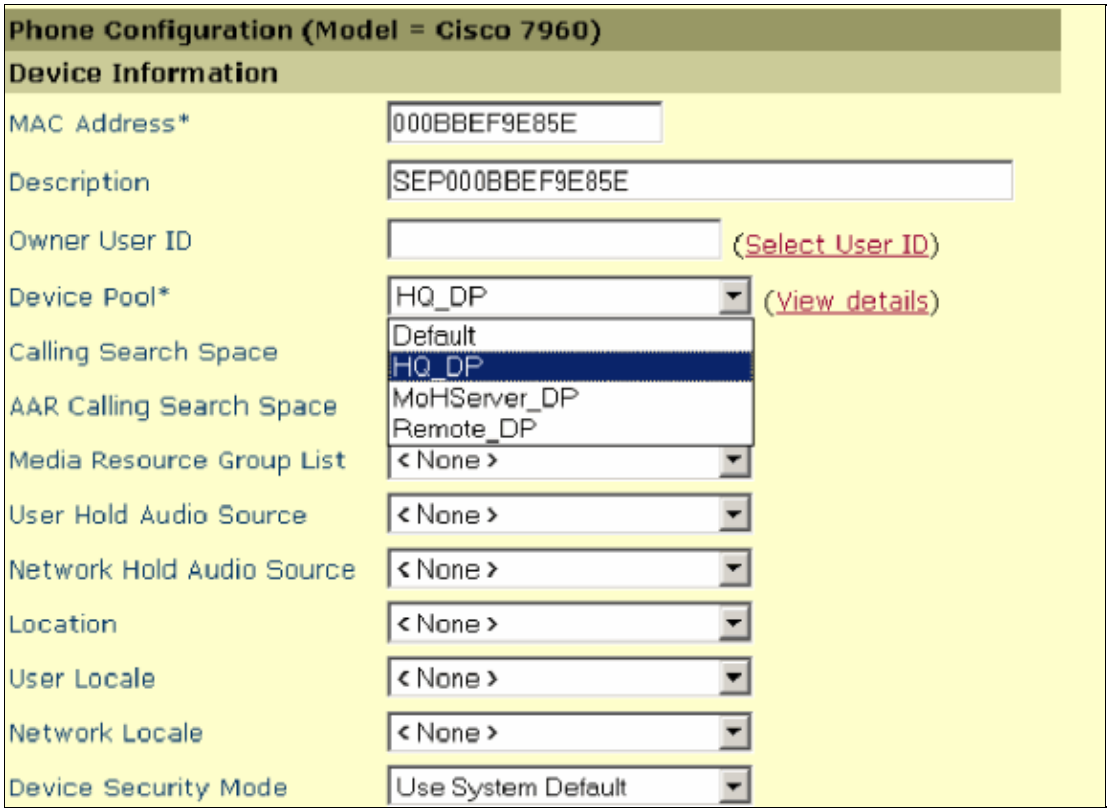


Step 5: Place the IP Phones in the Equivalent Device Pool

Based on the assumption that you have IP Communicator at the Remote region and a Cisco 7960 IP phone at the HQ region, place the IP Communicator in device pool **Remote_DP**.



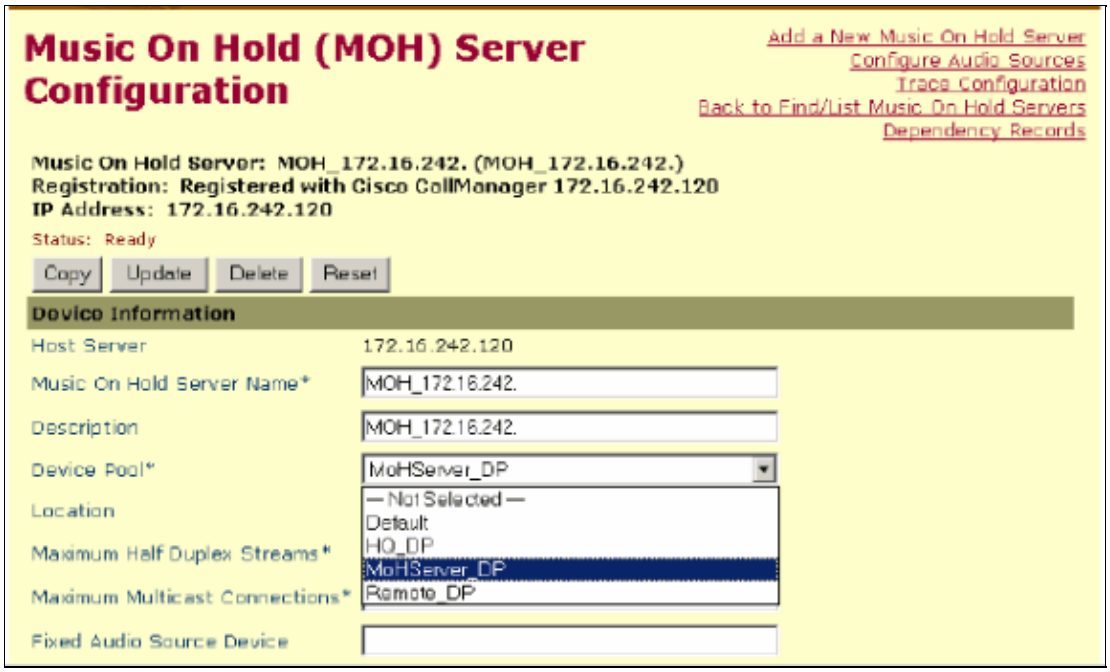
Place the Cisco 7960 in **HQ_DP**.



Step 6: Place the MoH Server in the MoHServer_DP Device Pool

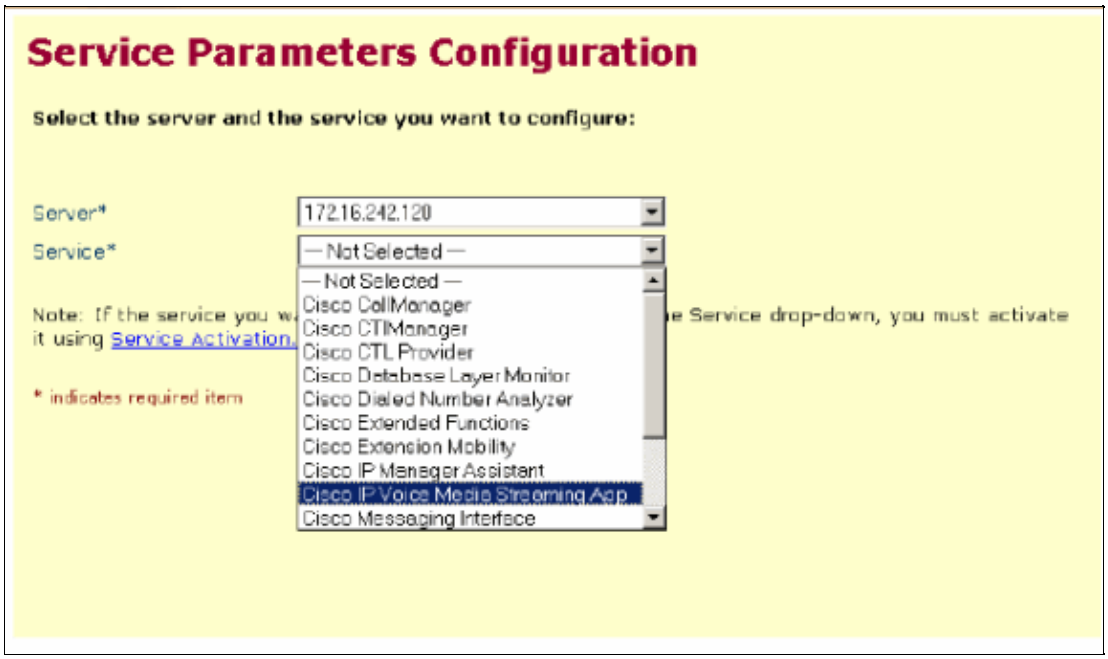
Select **Service > Media Resource** and select the MoH server.

In the Device Pool field select **MoHServer_DP**.



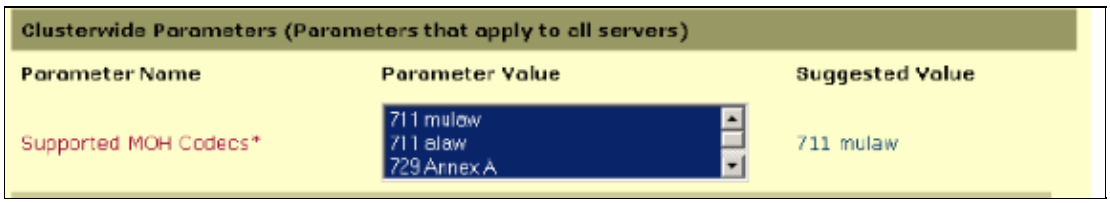
Step 7: Ensure that the Correct Codecs are Selected in the Supported MoH Codecs in Cisco IP Voice Media Streaming Application

Select **Service > Service Parameters** and choose **Cisco IP Voice Media Streaming App** from the Service pull down menu.



Under Clusterwide Parameters, select the codecs that you want supported for MoH.

Although G.729 is selected here, you only need G.711. When you select multiple codecs, hold down the CRTL key and use the mouse to select multiple codecs from the list.



Verify

Place a call from the Cisco 7960 to the IP Communicator. Once the call is answered, double−click the **?** in the IP Communicator screen to view Call Statistics.

Note: The codec used here is G.729.

From the Cisco 7960, place the user (IP Communicator phone) on hold and view Call Statistics.

Note: The codec is now G.711. This is used for the MoH transmission:

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

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

Related Information

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

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