

# APPLICATION NOTE

## How to set Barix Instreamer as MoH source for Cisco Unified Call Manager

### Introduction

Cisco Unified Call Manager (CUCM) VOIP systems can be set up to receive Music/Message on Hold from different sources, the default being a file resident on the Call Manager server.

The solution here reported uses a Barix Instreamer to generate an MoH from an analog audio source (CD player, FM tuner, legacy MoH player).

The concerns of having a file placed on the server and the physical issues of relying on a 3<sup>rd</sup> party manual update of the file, can be addressed by using a network stream provided by Barix Instreamer.

This document contains guidelines for setting up the CUCM and also the Barix Instreamer.

The setup falls in two parts:

- Configure CUCM MoH
- Configuration of the Barix Instreamer to match the CUCM

## 1. Configuring CUCM

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We identified the specific multicast group we were going to use for this application as a general pre-requisite before configuring CUCM. Next we configured an audio source in CUCM that leveraged the Sample Audio Source file but associated it to a new audio source ID (ID 2, in our setup).

The reason we used a real audio source file is that if the media consumer (i.e. the device placed on hold) was **not** on a multicast network, we still wanted to send MoH. It would just be the Cisco sample audio source.

### *Audio Source Configuration*

- Audio Stream Number: 2
- Audio Source File: SampleAudioSource
- Audio Source Name: BarixSoundFile
- Play Continuously: enabled
- Allow multi-casting: enabled

### *MoH Server Configuration*

We only associate the multicast capabilities to one of the CUCM IPVMS nodes. This MoH server was configured as follows:

- Run Flag: Yes
- Multi-cast IP Address: 239.192.1.1
- Multi-cast port number: 16384
- Increment multi-cast on: IP Address

### *Media Resource Group*

We create two media resource groups (MRGs). The MoH server is assigned to both MRGs. The only difference between the two is that one MRG is multicast enabled, while the other is not.

### *Media Resource Group List*

We created at least two media resource group lists (MRGLs). One of these MRGLs contained the multicast-enabled MRG, while the other does not. The latter is assigned to devices on networks incapable of routing multicast, while the former is associated to devices that are on multicast-enabled networks.

## 2. Configuring Barix Instreamer

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The Barix Instreamer must run firmware VB4.02 (or higher). After you assign an IP address, you can web to the system to complete the configuration.

IP address assignment can be done via DHCP on initial boot and then reconfigured to static.

### *Network Settings*

The first step is to go to **Settings** and then modify the network settings. Apply an IP address that fits your design.

### *Audio Settings*

After configuring the network, the audio settings are modified to identify the appropriate input source, the encoding mechanism, and gain. The encoding is G711 uLaw / 8 kHz mono. The rest of the settings may vary by environment.

**INSTREAMER**

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Basic Settings	
<b>Advanced Settings</b>	<b>AUDIO SETTINGS</b>
Network	<b>Input Source</b> <input type="text" value="Line mono"/>
<b>Audio</b>	<b>Audio Format</b> <input type="text" value="G.711 uLaw / 8 kHz mono"/>
Streaming	
I/O & Serial	<b>ADVANCED ENCODER SETTINGS</b>
Control & SNMP	<b>A/D amplifier gain</b> <input type="text" value="-3"/> dB
Security	

### Stream Settings

For stream settings, you can provide whatever name you want. The **streaming mode** should be set to "send always".

When setting up the multicast destination, modify **connection number 1** to use the multicast group address and port number provisioned for the MoH server in CUCM.

## INSTREAMER

- Basic Settings
- Advanced Settings**
- Network
- Audio
- Streaming**
- I/O & Serial
- Control & SNMP
- Security

**STREAMING SETTINGS**

Streaming Mode send always ▾

Buffer Underrun Mode (TCP) skip ▾

Stream Packet Strategy lowest latency ▾

UDP Tx Source Port

**SHOUTCAST/ICECAST SETTINGS**

Own Name

Radio Path

icy-url / SIP user

icy-genre

Shoutcast stream public ▾

**STREAMING DESTINATIONS**

#	Conn. type	Enter IP Address or Domain Name	Port
1	RTP ▾	<input type="text" value="239.192.1.1"/>	<input type="text" value="16384"/>
2	not used ▾	<input type="text"/>	<input type="text" value="0"/>
3	not used ▾	<input type="text"/>	<input type="text" value="0"/>
4	not used ▾	<input type="text"/>	<input type="text" value="0"/>

  

#	Conn. type	IP #	#	#	#	Port
5	not used ▾	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
6	not used ▾	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
7	not used ▾	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
8	not used ▾	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>