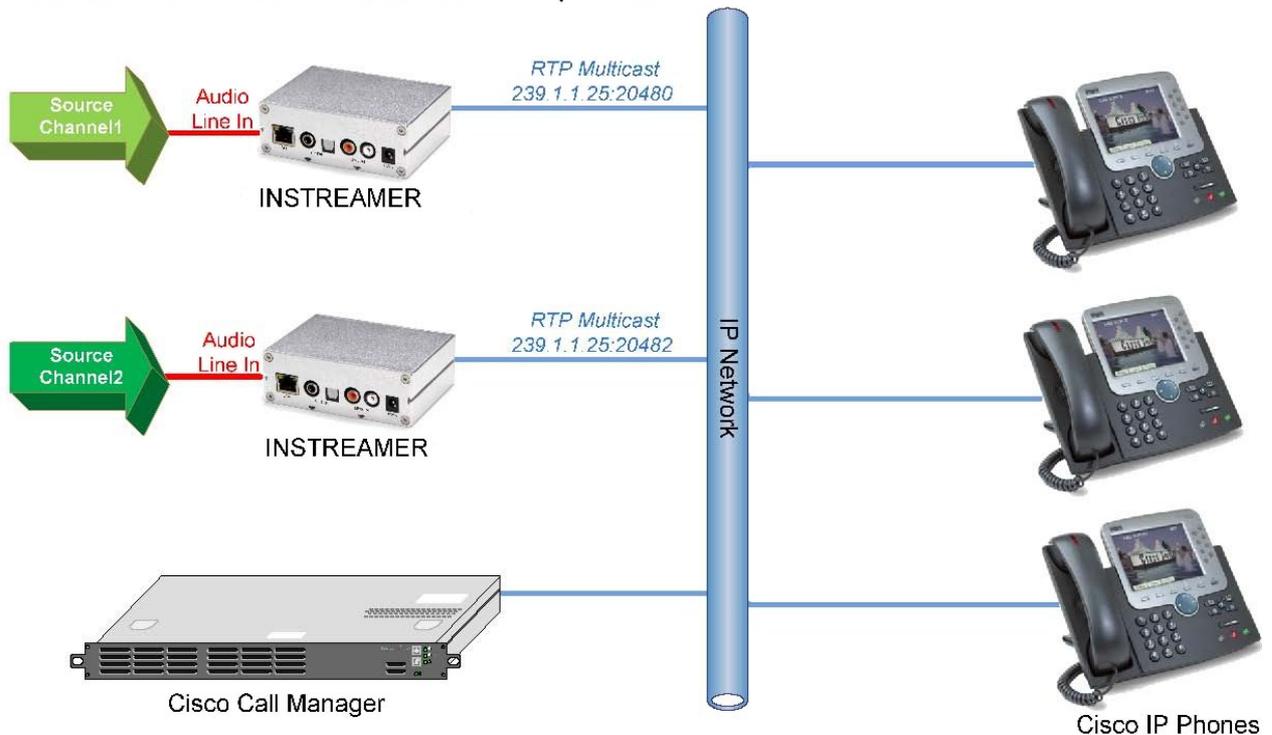


## Multi Sources Live Audio Feed for Cisco IP Phone

This solution uses Barix Instreamer as live multicast audio feed to Cisco IP phones. Users can select which source channel to be listened from the phone..



This solution takes advantage of multicast streaming technology which conserves network bandwidth by allowing a single audio stream to be accessed concurrently by thousands of users.

### Requirements

- Barix Instreamer with integrated LiveFeed Service (Instreamer firmware **vb3.17 or higher**)
- Cisco Call Manager (a.k.a Cisco Unified Call Manager or Cisco Unified Communications Manager) version 3.3 or higher.
- Cisco IP Phone (most of the current Cisco's phone models support multicast RTP, to ensure check with Cisco)

### Instreamer Configuration

1. Obtain the IP address from your DHCP server or using IPZator/SonicIP.© See Instreamer User Guide for more information.
2. Open a web browser and enter <http://ipaddress> in the address bar.
3. Click on „**CONFIGURATION**“ button to change the Instreamer Settings.

4. Check if your Instreamer is using the right firmware (**vb3.17 or higher**) as seen below.

**INSTREAMER**

**DEVICE CONFIGURATION**

MAC: 0008E1002F30  
Firmware: **VB3.17 (07/25/2011)**  
Web application: V01.20  
Bootloader: V99.22  
Setup: V01.07  
Song: V08.18  
XT: V01.18

**BARIX™**

THINK FURTHER

SETTINGS | DEFAULTS | REBOOT | UPDATE | HOME

## 5. Network Settings

To set a static IP address enter the information in the appropriate fields.

SETTINGS

NETWORK | AUDIO | STREAMING | I/O

IP Address: 192 . 168 . 1 . 85  
Netmask: 255 . 255 . 255 . 0  
Gateway IP Address: 192 . 168 . 1 . 254  
Primary DNS: 192 . 168 . 1 . 254  
Alternative DNS: 0 . 0 . 0 . 0  
DHCP Host Name:   
Use SonicIP®:  Yes  No

Apply Cancel

6. **Audio Settings** Set **Encoding+Frequency** to **G.711uLaw/8kHz Mono**. A/D amplifier gain can be adjusted to appropriate level depend on your audio source level.

SETTINGS

NETWORK | AUDIO | STREAMING | I/O | CONTROL

Input source:  Line mono  Line stereo  Mic  
Encoding+Frequency: **G.711 uLaw / 8 kHz mono**  
MPEG Encoding quality: 0 Lowest

Advanced Encoder Settings

Microphone gain: 21 dB  
A/D amplifier gain: **0** dB  
MP3 Frame CRC:  enable  disable  
MP3 Bitreservoir Mode:  used  kept empty  
MP3 Channel Mode Extension:  enable  disable MS-Stereo encoding  
MP3 Copyright Protection:  enable  disable  
MP3 Stream Type:  copy  original  
MP3 Emphasis: none

Apply Cancel

## 7. Streaming Settings

Set **Own Name** to your audio channel name.

Set **Stream Packet Strategy** to lowest latency.

Set **Stream to #5** to **RTP** multicast IP address and port number. Port number must be an even port number within the range of 20480 to 32768. For the second Instreamer, you can use different multicast IP address with the same port number or the same multicast IP address with different port number.

Instreamer 1		Instreamer 2													
NETWORK	AUDIO	STREAMING	I/O	CONTROL	SERIAL	SECURITY	NETWORK	AUDIO	STREAMING	I/O	CONTROL	SERIAL	SECURITY		
Own Name	<input type="text" value="Channel1"/>						Own Name	<input type="text" value="Channel2"/>							
Streaming mode	send always						Streaming mode	send always							
Control GPI	1						Control GPI	1							
Active open/closed	closed						Active open/closed	closed							
Send Contact Closure information	no						Send Contact Closure information	no							
Trigger Level	-24 dB. only for mode "send on Level"						Trigger Level	-24 dB. only for mode "send on Level"							
Pre Trigger Start	0 msec						Pre Trigger Start	0 msec							
Post Trigger Play	1024 msec						Post Trigger Play	1024 msec							
Buffer Underrun Mode (TCP)	skip						Buffer Underrun Mode (TCP)	skip							
Stream Packet Strategy	lowest latency						Stream Packet Strategy	lowest latency							
UDP Tx Source Port	0						UDP Tx Source Port	0							
Radio Path	/xstream						Radio Path	/xstream							
icy-url / SIP user	<input type="text"/>						icy-url / SIP user	<input type="text"/>							
icy-genre	<input type="text"/>						icy-genre	<input type="text"/>							
Shoutcast stream	public						Shoutcast stream	public							
Type of Service/DSCP	0						Type of Service/DSCP	0							
Stream to							Stream to								
#	Conn. type	Enter IP Address or Domain Name					Port #	#	Conn. type	Enter IP Address or Domain Name					Port #
1	Internet Radio	<input type="text"/>					: 0	1	Internet Radio	<input type="text"/>					: 0
2	Internet Radio	<input type="text"/>					: 0	2	Internet Radio	<input type="text"/>					: 0
3	Internet Radio	<input type="text"/>					: 0	3	Internet Radio	<input type="text"/>					: 0
4	Internet Radio	<input type="text"/>					: 0	4	Internet Radio	<input type="text"/>					: 0
#	Conn. type	IP #	#	#	#	Port #	#	Conn. type	IP #	#	#	#	Port #		
5	RTP	239	.1	.1	.25	: 20480	5	RTP	239	.1	.1	.25	: 20482		
6	Internet Radio	0	.0	.0	.0	: 0	6	Internet Radio	0	.0	.0	.0	: 0		
7	Internet Radio	0	.0	.0	.0	: 0	7	Internet Radio	0	.0	.0	.0	: 0		
8	Internet Radio	0	.0	.0	.0	: 0	8	Internet Radio	0	.0	.0	.0	: 0		
List of TCP and BRTP connections							List of TCP and BRTP connections								

## Call Manager Settings

1. Log in to the CM Administration web interface.
2. Under **Device > Device Settings>** choose **Phone Services**.  
Enter the appropriate or desired information.  
Enter the Name you would like for the phone service. This will be displayed when you press the Services button on the phone.  
Enter Service URL. <http://IPAddress/livefeed.xml> . The IP Address should be replaced with the IP Address of your Instreamer.  
Click **Save** when finished.

The screenshot shows the Cisco Unified CM Administration interface. The page title is "IP Phone Services Configuration". The status is "Ready". The service name is "Channel1" and the service URL is "http://192.168.1.85/livefeed.xml".

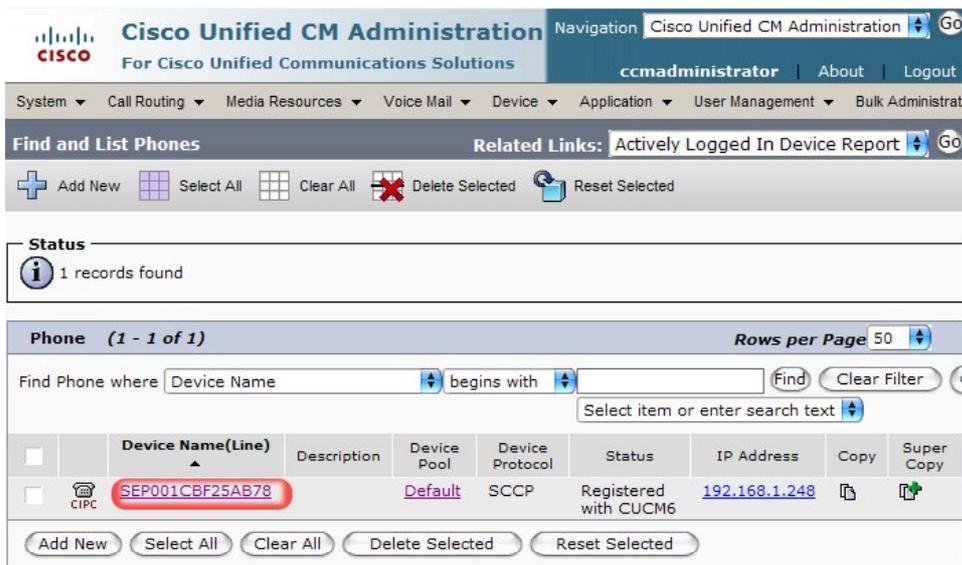
Service Information	
Service Name*	ASCII Service Name*
<input type="text" value="Channel1"/>	<input type="text" value="Channel1"/>
Service Description	Service URL*
<input type="text"/>	<input type="text" value="http://192.168.1.85/livefeed.xml"/>

Add another Phone Service for the second Instreamer

The screenshot shows the Cisco Unified CM Administration interface. The page title is "IP Phone Services Configuration". The status is "Ready". The service name is "Channel2" and the service URL is "http://192.168.1.86/livefeed.xml".

Service Information	
Service Name*	ASCII Service Name*
<input type="text" value="Channel2"/>	<input type="text" value="Channel2"/>
Service Description	Service URL*
<input type="text"/>	<input type="text" value="http://192.168.1.86/livefeed.xml"/>

3. Under **Device> Phone**, find and select the phone you want to configure.



4. In the **Phone Configuration**, select **Subscribe/Unsubscribe Services**, click **Go** button.



A subscribe window will be pop up and you can subscribe the two services you just created.

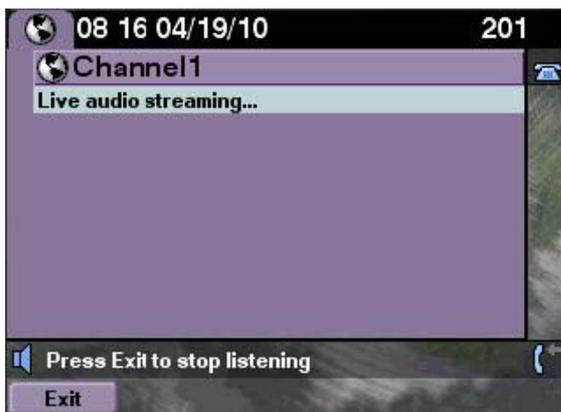


## Listening Live Audio Streaming with the IP Phone

1. On the IP Phone click the service button 
2. The list of services will be shown  up on the phone display:



3. Select the service name, you will start to listen live audio streaming.



4. Click Exit to stop listening and return to main menu.

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Many thanks to our partner **avanca Technologies Pte Ltd** for creating this solution and the application note !