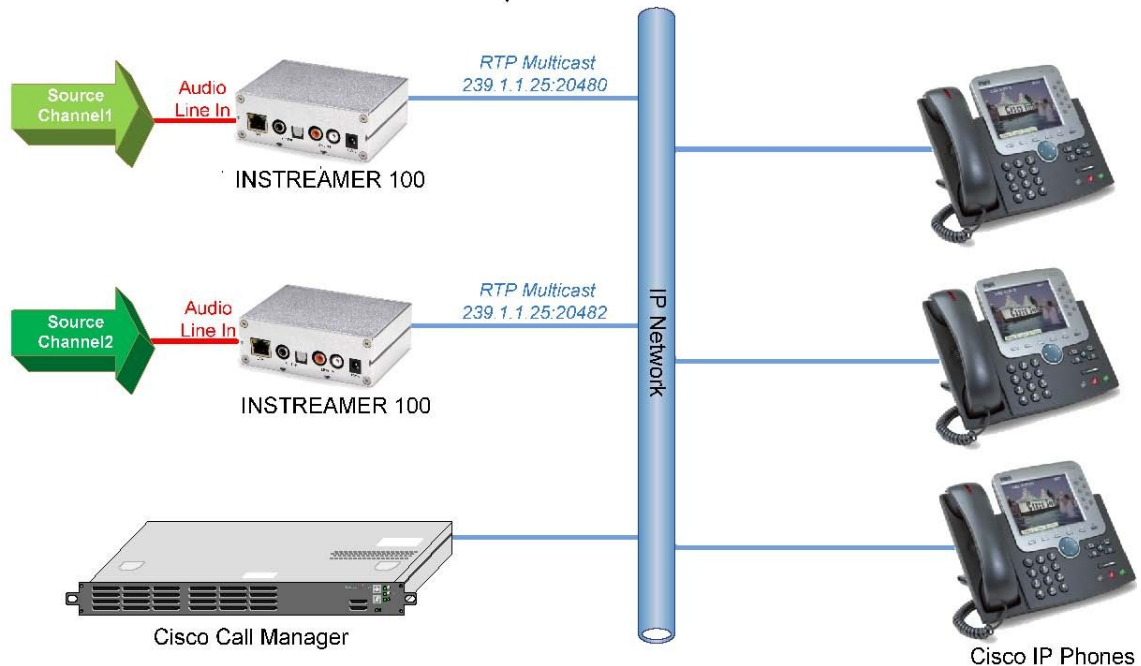


Multi Sources Live Audio Feed for Cisco IP Phone

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 100 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 100 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.



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

6. Audio Settings

Set **Encoding+Frequency** to **G.711 uLaw/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]



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											
SETTINGS		SETTINGS											
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	<input type="text" value="send always"/>	Streaming mode	<input type="text" value="send always"/>										
Control GPI	<input type="text" value="1"/>	Control GPI	<input type="text" value="1"/>										
Active open/closed	<input type="text" value="closed"/>	Active open/closed	<input type="text" value="closed"/>										
Send Contact Closure information	<input type="text" value="no"/>	Send Contact Closure information	<input type="text" value="no"/>										
Trigger Level	<input type="text" value="-24"/> dB. only for mode "send on Level"	Trigger Level	<input type="text" value="-24"/> dB. only for mode "send on Level"										
Pre Trigger Start	<input type="text" value="0"/> msec	Pre Trigger Start	<input type="text" value="0"/> msec										
Post Trigger Play	<input type="text" value="1024"/> msec	Post Trigger Play	<input type="text" value="1024"/> msec										
Buffer Underrun Mode (TCP)	<input type="text" value="skip"/>	Buffer Underrun Mode (TCP)	<input type="text" value="skip"/>										
Stream Packet Strategy	<input type="text" value="lowest latency"/>	Stream Packet Strategy	<input type="text" value="lowest latency"/>										
UDP Tx Source Port	<input type="text" value="0"/>	UDP Tx Source Port	<input type="text" value="0"/>										
Radio Path	<input type="text" value="/xstream"/>	Radio Path	<input type="text" value="/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	<input type="text" value="public"/>	Shoutcast stream	<input type="text" value="public"/>										
Type of Service/DSCP	<input type="text" value="0"/>	Type of Service/DSCP	<input type="text" value="0"/>										
Stream to		Stream to											
# Conn. type	Enter IP Address or Domain Name	: Port #	# Conn. type	Enter IP Address or Domain Name	: Port #								
1	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0	1	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0						
2	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0	2	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0						
3	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0	3	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0						
4	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0	4	<input type="text" value="Internet Radio"/>	<input type="text" value=""/>	: 0						
# Conn. type	IP #	#	#	#	Port #	# Conn. type	IP #	#	#	#	Port #		
5	<input type="text" value="RTP"/>	<input type="text" value="239"/>	<input type="text" value=".1"/>	<input type="text" value=".1"/>	<input type="text" value=".25"/>	: 20480	5	<input type="text" value="RTP"/>	<input type="text" value="239"/>	<input type="text" value=".1"/>	<input type="text" value=".1"/>	<input type="text" value=".25"/>	: 20482
6	<input type="text" value="Internet Radio"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	: 0	6	<input type="text" value="Internet Radio"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	: 0
7	<input type="text" value="Internet Radio"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	: 0	7	<input type="text" value="Internet Radio"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	: 0
8	<input type="text" value="Internet Radio"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	: 0	8	<input type="text" value="Internet Radio"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="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 for configuring an IP Phone Service. The page title is "IP Phone Services Configuration" and it includes a "Save" button at the top left. The "Status" section shows "Status: Ready". The "Service Information" section contains two rows of input fields: "Service Name*" and "ASCII Service Name*" both containing "Channel1"; and "Service Description" and "Service URL*" with "Service URL*" containing "http://192.168.1.85/livefeed.xml". A "Save" button is located at the bottom of the form.

Add another Phone Service for the second Instreamer

The screenshot shows the Cisco Unified CM Administration interface for configuring a second IP Phone Service. The page title is "IP Phone Services Configuration" and it includes a "Save" button at the top left. The "Status" section shows "Status: Ready". The "Service Information" section contains two rows of input fields: "Service Name*" and "ASCII Service Name*" both containing "Channel2"; and "Service Description" and "Service URL*" with "Service URL*" containing "http://192.168.1.86/livefeed.xml". A "Save" button is located at the bottom of the form.

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

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration

System | Call Routing | Media Resources | Voice Mail | **Device** | Application | User Management | Bulk Administration

Find and List Phones | Related Links: [Actively Logged In Device Report](#)

+ Add New | Select All | Clear All | Delete Selected | Reset Selected

Status
1 records found

Phone (1 - 1 of 1) | Rows per Page: 50

Find Phone where: Device Name | begins with | Find | Clear Filter

	Device Name(Line)	Description	Device Pool	Device Protocol	Status	IP Address	Copy	Super Copy
<input checked="" type="checkbox"/>	SEP001CBF25AB78	Default	SCCP	Registered with CUCM6	192.168.1.248			

+ Add New | Select All | Clear All | Delete Selected | Reset Selected

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

Cisco Unified CM Administration
For Cisco Unified Communications Solutions

Navigation: Cisco Unified CM Administration

System | Call Routing | Media Resources | Voice Mail | Device | Application | User Management | Bulk Administration | Help

Phone Configuration | Related Links: [Subscribe/Unsubscribe Services](#)

Save | Delete | Copy | Reset | Add New

Status
Status: Ready

Association Information
Modify Button Items

1	Line [1] - 201 (no partition)
2	Line [2] - Add a new DN
3	Add a new SD
4	Add a new SD

Phone Type
Product Type: Cisco IP Communicator
Device Protocol: SCCP

Device Information
Registration: Registered with Cisco Unified Communications Manager CUCM6
IP Address: 192.168.1.248
Device Name*: SEP001CBF25AB78

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

Subscribed Cisco IP Phone Services for SEP001CBF25AB78


Save | Help

Status
Add successful
Service Subscription: Channel2

Service Information
Service Name: Channel2
Service Name*: Channel2
ASCII Service Name*: Channel2

Subscribed Services
[Subscribe a New Service](#)
Channel1
Channel2

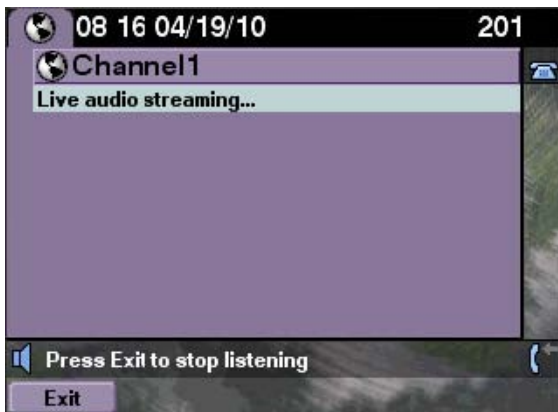
Listening Live Audio Streaming with the IP Phone

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.

Cisco is a registered trademark of the Cisco Systems Inc and is here used as reference only.

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