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# Interaction Media Streaming Server

## Technical Reference

### Abstract

Interaction Media Streaming Server is a CIC subsystem that streams audio from multiple sources for different audio playback operations, including music-on-hold and voice mail, to telephony devices.

For the latest version of this document, see the PureConnect Documentation Library at: <http://help.genesys.com/pureconnect>.

For copyright and trademark information, see [https://help.genesys.com/pureconnect/desktop/copyright\\_and\\_trademark\\_information.htm](https://help.genesys.com/pureconnect/desktop/copyright_and_trademark_information.htm).

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# Introduction to Interaction Media Streaming Server

Interaction Media Streaming Server is a Media Resource Control Protocol (MRCP) server that can inject audio from the following sources into calls in a CIC environment:

- Streaming audio – Using external audio sources, such as microphones or audio devices connected to the host machine, Interaction Media Streaming Server can insert the audio input from these devices into calls within the CIC system. An example of an external audio source is a CD player connected to the line-in audio port on a personal computer, which you can then use as the audio that parties hear when placed on hold.

## **Important!**

Copyright laws prohibit you from rebroadcasting licensed, commercial recordings or performances. You are solely responsible for licensing any audio, including music, that you configure Interaction Media Streaming Server to play to persons in calls in the CIC environment. Commercial recordings and performances include radio broadcasts, Internet radio, privately purchased music, and any commercially produced recordings.

There are many businesses that offer audio recordings or broadcasts for playing to persons in calls in a contact center environment. Also, some royalty-free audio recordings are available on the Internet.

You are responsible for ensuring that you are aware of and abide by any regional, national, and international laws regarding the rebroadcast of audio recordings or performances.

The following website addresses from leading music licensing organizations provide information on the requirements for rebroadcasting and commercial use of recordings:

<http://www.bmi.com/licensing/faq>

<http://www.ascap.com/licensing/licensingfaq.html>

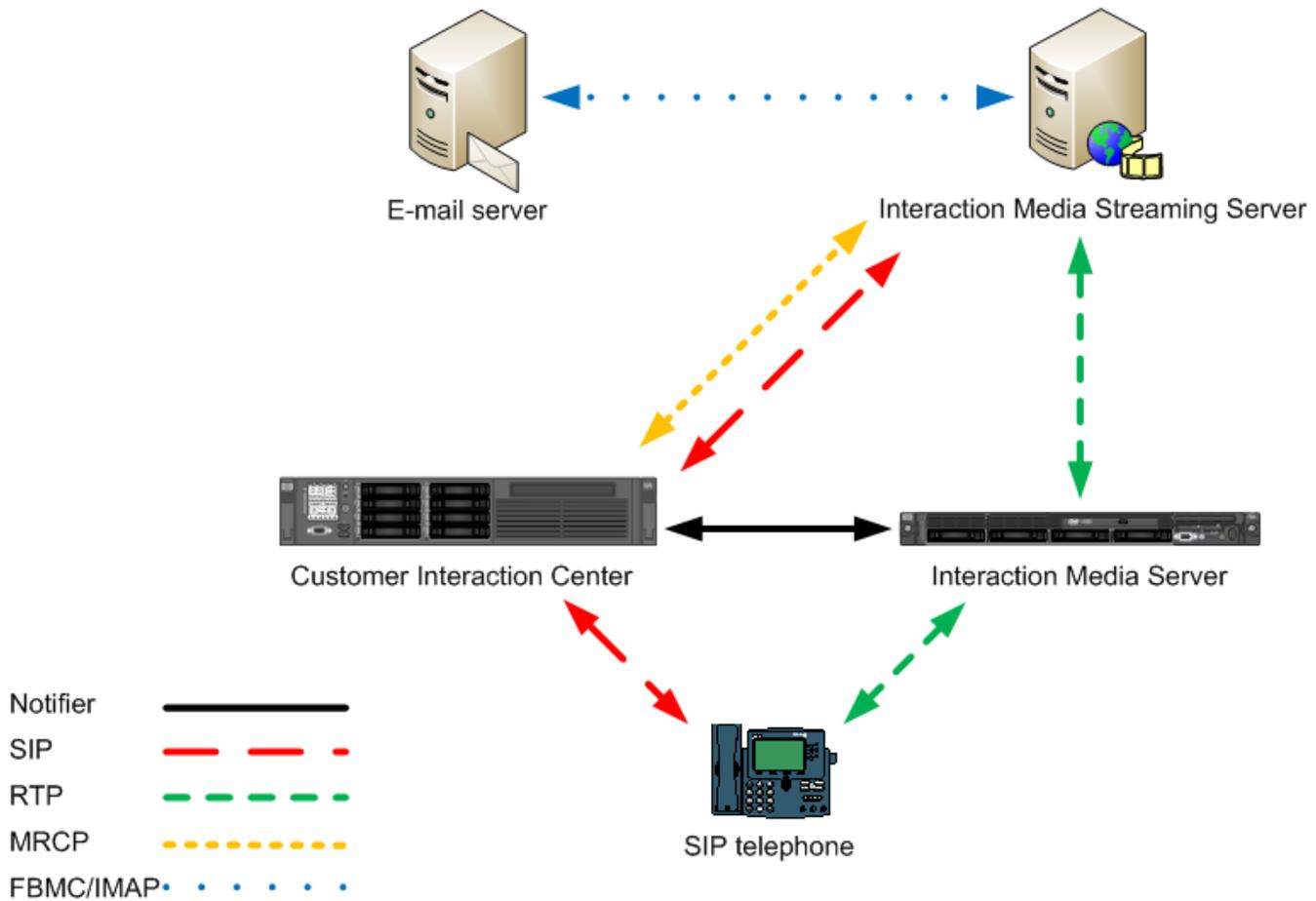
<http://www.sesac.com/Licensing/FAQsBroadcast.aspx>

<http://www.harryfox.com/public/FAQ.jsp>

Genesys and its subsidiaries are not legally responsible for any usage of Interaction Media Streaming Server that violates any law.

- Voice mail – Interaction Media Streaming Server extracts voice mail messages stored as attachments in email messages on an email server. It then injects the audio from the voice mail attachments into calls in the CIC system.
- Speech synthesis – Interaction Media Streaming Server uses the Microsoft Speech Application Programming Interface (SAPI) engine in Windows to generate audio streams with synthesized speech from written text.

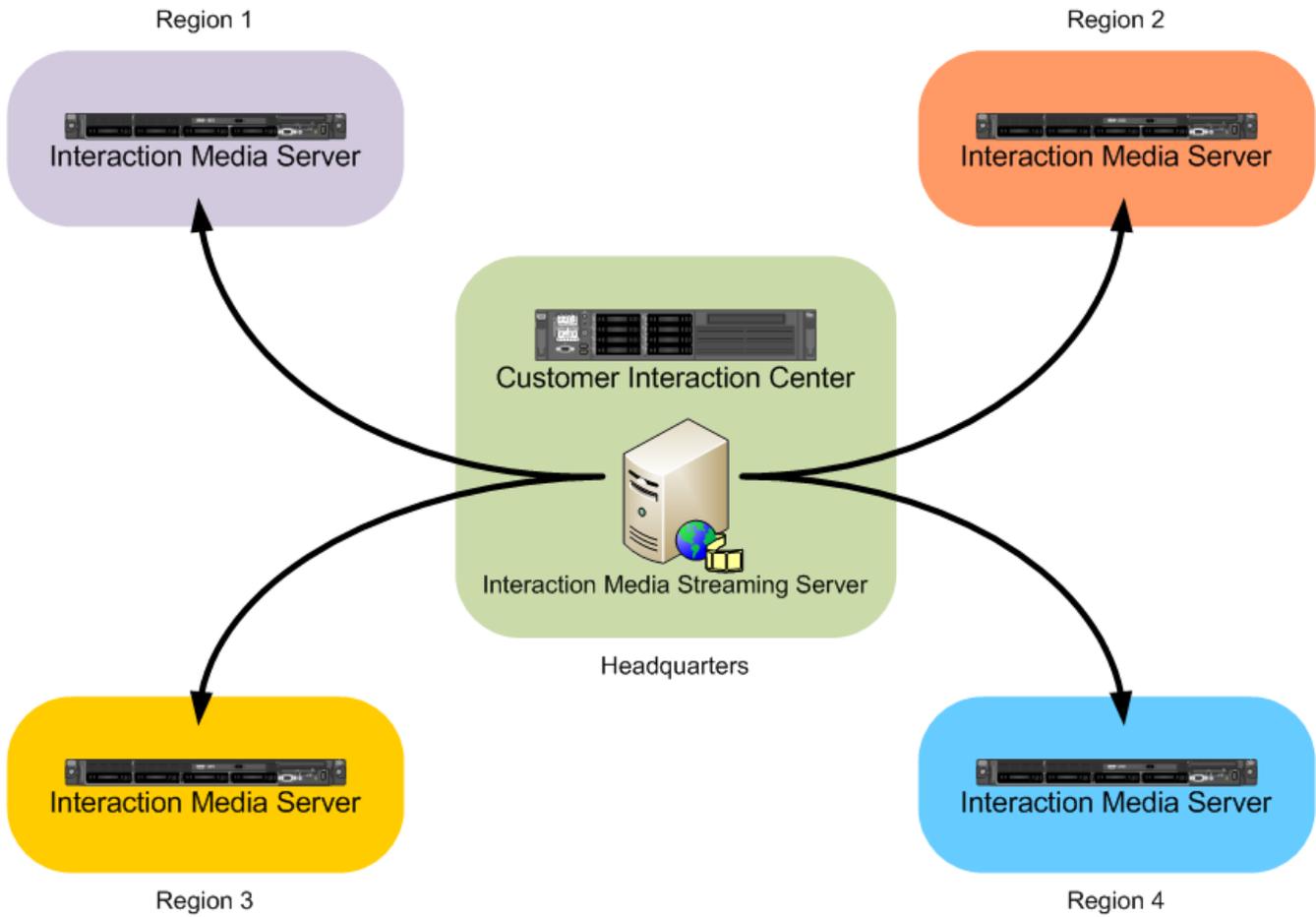
# Interaction Media Streaming Server Network Technologies



<b>Notifier</b>	Proprietary communication method that allows the CIC systems to exchange messages efficiently.
<b>Session Initiation Protocol (SIP)</b>	Interaction Media Streaming Server uses SIP to establish communication channels and relay supported resources, codecs, and media player operations. The default port is 6060.
<b>Real-time Transfer Protocol (RTP)</b>	Interaction Media Streaming Server sends audio to Interaction Media Server through RTP. The system always sends audio using the G.711 codec. The default port range is 16384-32767.
<b>Media Resource Control Protocol (MRCP)</b>	Interaction Media Streaming Server uses MRCP version 2 to communicate with the CIC server. These systems use MRCP to send and receive specific media commands. The default port is 8104.
<b>File Based Mail Connector (FBMC) Internet Message Access Protocol (IMAP)</b>	Interaction Media Streaming Server uses these protocols to communicate with and retrieve audio files from email messages on an email server.
<b>Hypertext Transfer Protocol (HTTP)</b>	Interaction Media Streaming Server uses HTTP to allow configuration through its web interface. The default port is 8190.

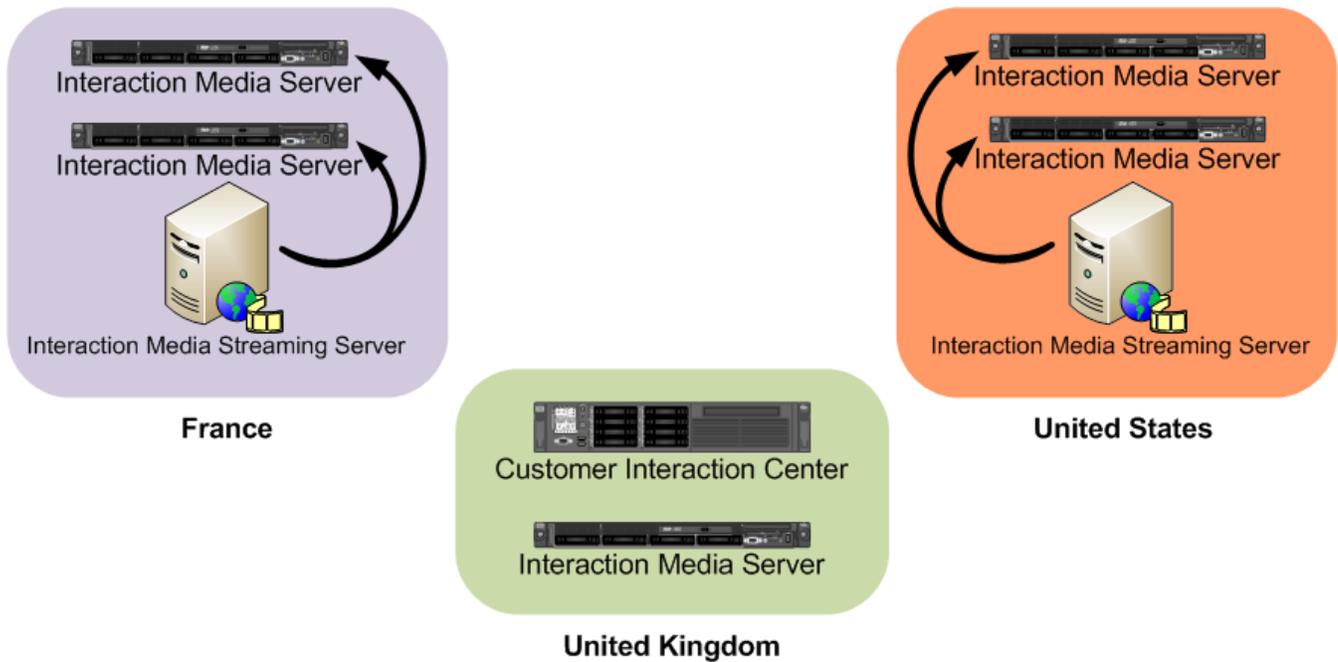
## Single location

Interaction Media Streaming Server can be a centralized source of streaming audio for an entire CIC network.



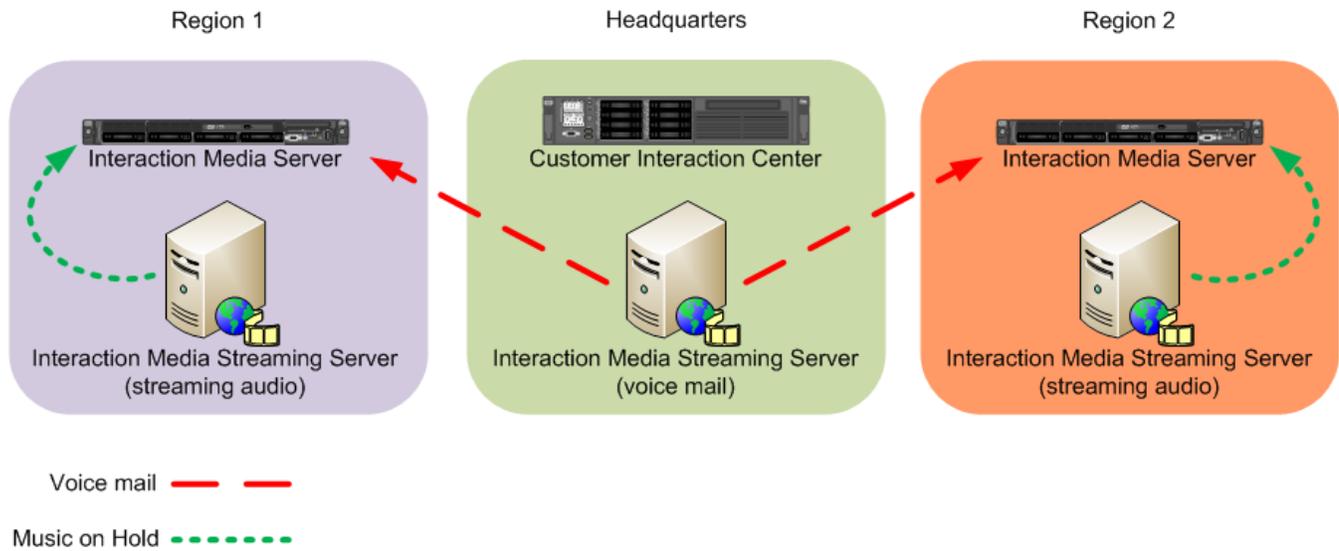
## Multiple locations

You can deploy multiple Interaction Media Streaming Servers to service different Locations, such as in other countries or regions of the world.



## Hybrid deployment

You can deploy separate installations of Interaction Media Streaming Server with each one handling a single function. For example, you can deploy one Interaction Media Streaming Server that only retrieves voice mail messages in a central headquarters location that also contains the email server. You can then deploy multiple Interaction Media Streaming Servers that only play streaming audio in each location defined in your Customer Information Center environment.



## Selection rules

Using MRCP selection rules, you can configure CIC to use specific Interaction Media Streaming Servers in specific or variable location. For more information about MRCP selection rules, see the [MRCP Technical Reference](#).

## Load balancing

You can deploy multiple Interaction Media Streaming Servers in a single location to service high volumes of call traffic. For load balancing between multiple Interaction Media Streaming Servers, use the same name for an external audio source on each server. The CIC server then selects the Interaction Media Streaming Server with the most available resources to service the call.

For example, if you attach an MP3 player to each of two Interaction Media Streaming Servers in a location and configure "MP3" as the name for each MP3 player source, the CIC server selects the Interaction Media Streaming Server with the most available resources. The system plays the audio stream from "MP3" on that specific Interaction Media Streaming Server to the caller.

# Headquarters

Customer Interaction Center

# Region 1



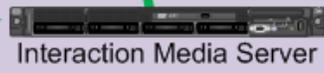
"MP3"

Interaction Media Streaming Server  
(60% available)



"MP3"

Interaction Media Streaming Server  
(70% available)



Interaction Media Server



Gateway



PSTN



MRCP - - - - -

RTP - - - - -

# Plan Interaction Media Streaming Server Implementation

Before you install Interaction Media Streaming Server, determine how it can best serve your needs in the CIC environment. You can install Interaction Media Streaming Server in a single, centralized location or install it in multiple locations for performance and cost benefits.

## Feature usage and proximity of associated systems

Interaction Media Streaming Server can support voice mail playback, streaming audio, and Text-to-Speech (TTS) operations. Will you use all of these features in your CIC environment? Each of these features gain performance benefits when the host computer is close to the entities with which it communicates, such as Interaction Media Server and an email server.

## Potential workload

If you use all features of Interaction Media Streaming Server, there is minimal impact (usually) on the resources of a typical desktop computer. However, consider which features you plan to use simultaneously and the number of concurrent calls being serviced.

For example, if your contact center services thousands of simultaneous calls where callers are played Music on Hold, you might consider using separate installations of Interaction Media Streaming Server so as not to affect other features, such as playing voice mail and Text-to-Speech, or hinder the Music on Hold capabilities.

Also, a single network segment may not efficiently or sufficiently handle thousands of Real-time Transport Protocol (RTP) streams used in the playing of streaming audio. In this situation, you may want to consider deploying multiple installations of Interaction Media Streaming Server and use load balancing or MRCP selection rules to distribute the workload.

If your company uses voice mail as a primary means of communication instead of email, your Interaction Media Streaming Server services more calls more often and experiences periods of high usage, such as the beginning of the workday and end-of-meal periods.

## Network costs

Along with bandwidth availability, network costs can include charges by carriers to other geographic locations and performance hindrances.

If you administer multiple contact centers or satellite offices across a country, continent, or the world, you probably are familiar with the costs of transmitting data to those locations. Installing Interaction Media Streaming Server locally to the location that you want it to service ensures that communication data largely remains in local networks. You can also use MRCP selection rules in Interaction Administrator to configure which Interaction Media Streaming Servers in other locations can service calls.

Another network consideration is quality. Network connections to distant geographic locations require many hops along the route. Each of these hops can introduce latency that slows down the transmission of real-time audio data. Another point to consider is that the farther the distance to the network destination, the higher the chance of losing packets.

## Language and cultural requirements

Depending on the requirements of your CIC environment, your Interaction Media Streaming Server can use external audio sources that contain audio that is specific to a country, region, or language. Before you start installing and configuring Interaction Media Streaming Server, consider the exact audio content to play to the locations that it services.

For example, installing and configuring Interaction Media Streaming Server in a location in Japan but having it also service a location in Australia could cause caller confusion with its configured Music on Hold, custom spoken recordings in a specific language, and Text-to-Speech voice. You risk call abandonment and customer loss in a particular country if the Music on Hold plays a patriotic theme for a rival country.

## Redundancy needs

Redundant systems are important in all network configurations. If an Interaction Media Streaming Server is unavailable to service a request, do you have an alternate system available? Interaction Administrator allows you to configure MRCP selection rules to specify which Interaction Media Streaming Servers in different locations can service other locations.

In addition to selection rules, you can use Interaction Administrator to set priority levels for multiple MRCP servers in a location. If the MRCP server with the highest priority level is unavailable, the system sends the request to the MRCP server in that location with the next highest priority level.

# Interaction Media Streaming Server Requirements

## Interaction Media Streaming Server hardware requirements

<b>Central Processing Unit</b>	Same as operating system requirements
<b>Random Access Memory</b>	Same as operating system requirements
<b>Free disk space</b>	175 MB
<b>Sound controller</b>	An installed and enabled audio device
<b>Network Interface Speed</b>	<p>The speed of the network interface determines the number of concurrent sessions that Interaction Media Streaming Server can service.</p> <p><b>Note:</b> Each Real-time Transport Protocol (RTP) stream from Interaction Media Streaming Server uses approximately 95.2 Kbps of bandwidth for an Ethernet connection. For example, a 100Base-T Ethernet network connection can service approximately 1000 concurrent RTP streams.</p>

### Important!

Interaction Media Streaming Server requires a personal computer or server that has a physical sound device. For this reason, you cannot install Interaction Media Streaming Server on a virtual machine.

## Interaction Media Streaming Server software requirements

<b>Operating System</b>	<ul style="list-style-type: none"> <li>Windows 8.1 (64-bit)</li> <li>Windows 7 (64-bit)</li> <li>Windows Server 2012 R2</li> <li>Windows Server 2008 R2 with Service Pack 1</li> </ul>
<b>CIC environment</b>	<ul style="list-style-type: none"> <li>4.0 Service Update 3 or later</li> <li>20nn Rn</li> </ul>
<b>Software Co-residency</b>	<p>Interaction Media Streaming Server cannot co-reside on a host computer with any of the following PureConnect products:</p> <ul style="list-style-type: none"> <li>Interaction Media Server</li> <li>CIC server</li> </ul>
<b>Antivirus Compatibility</b>	<ul style="list-style-type: none"> <li>McAfee VirusScan Enterprise 10.5</li> <li>Symantec Endpoint Protection 12.1 RU1</li> </ul>
<b>Administration</b>	<p>Configure Interaction Media Streaming Server with the following applications:</p> <ul style="list-style-type: none"> <li>Interaction Administrator</li> <li>Web browser</li> </ul>

## Interaction Media Streaming Server network requirements

<b>Network bandwidth</b>	Ensure that the network connections from the host computer to the destination can support the required number of possible RTP streams. A 100Base-T Ethernet connection can support approximately 1000 concurrent Real-time Transport Protocol (RTP) streams.
<b>Application Layer Protocols</b>	<p>Interaction Media Streaming Server uses the following application layer protocols and default port numbers:</p> <ul style="list-style-type: none"> <li>• HTTP – 8190</li> <li>• SIP – 6060</li> <li>• MRCP – 8104</li> <li>• RTP – 16384-32767</li> <li>• IMAP – 143 (Configured through the <b>Mail</b> container in Interaction Administrator)</li> </ul> <p><b>Note:</b> To allow these protocols and ports, ensure that you configure any firewalls along the network path.</p>
<b>Transport Layer Protocols</b>	<ul style="list-style-type: none"> <li>• TCP</li> <li>• UDP</li> </ul>
<b>Internet Layer Protocols</b>	<ul style="list-style-type: none"> <li>• IPv4</li> <li>• IPv6</li> </ul>
<b>Other network technologies</b>	<ul style="list-style-type: none"> <li>• Quality of Service (QoS)</li> </ul>
<b>Mailbox permissions</b>	The network user ID that you use to install Interaction Media Streaming Server must have the appropriate permissions to read and delete email messages for all mailboxes on the email server.
<b>Interaction Message Store permissions</b>	If you use Interaction Message Store to store and retrieve voice mail messages, configure each CIC user and workgroup with a mailbox.

# Install Interaction Media Streaming Server

Before you install the Interaction Media Streaming Server, ensure the following:

- You have read the [Interaction Media Streaming Server Requirements](#) and that the host computer, network, and environment meet or exceed those requirements.
- The network user ID with which you install Interaction Media Streaming Server has Administrator permissions.

## To install Interaction Media Streaming Server

1. Do the following (if you haven't already):
  - a. Download the CIC 2015 R1 or later `.iso` file from the [PureConnect Product Downloads page](#).
  - b. Copy the `.iso` file to a non-CIC file server with a high bandwidth connection to the computers on which you plan to install CIC.
  - c. Mount the `.iso` file and share the contents to make them accessible to the computers on which you plan to install CIC.
2. Go to the `\Installs\Off-ServerComponents` directory of the mounted `.iso` file.
3. Copy the `MediaStreamingServer_20nnRn.msi` file to the server on which you plan to install it.
4. Log on to the computer where you plan to install Interaction Media Streaming Server with an administrative network user ID.
5. Run the following installation program:  
`MediaStreamingServer_20nnRn.msi`  
The Interaction Media Streaming Server installation program displays the first page.
6. Click **Next**. The **Destination Folder** page appears.

### Note:

If you have other PureConnect products installed on the computer, you cannot change the destination folder.

7. To change the location where the program installs Interaction Media Streaming Server on the computer, click **Change**, type the appropriate path, and then click **OK**.
8. Click **Next**. The **Domain User Validation** page appears.
9. In the **Password** box, type the password for the network user ID that you used to log on to this Windows computer.
10. Click **Next**. The **Web Configuration Server** page appears.
11. Specify the following:

**Web Configuration Server Port:** Port number to use to access the web interface of Interaction Media Streaming Server. The default value is **8190**. Always provide this port number when you specify the URL address in a web browser as displayed in the following example: `http://server.yourcompany.com:8190`

**Administration Login Name:** Name of the account to use to log on and configure Interaction Media Streaming Server.

**Administration Login Password:** Password for the account to use to log on and configure Interaction Media Streaming Server.

### Important!

There isn't a password confirmation box to ensure that you typed the password that you intended. Ensure that you type the password correctly as it could restrict you from accessing the Interaction Media Streaming Server web interface.

12. Click **Next**. The **Interaction Media Streaming Server Install** page appears.
13. To change the directory where Interaction Media Streaming Server saves downloaded voice mail messages and generated text-to-speech streams, in the **Temporary Directory Location** box, type or browse to the drive and directory path.
14. Click **Next**. The **Media Streaming Server Options** page appears.
15. Click one or more of the following options:

**External Audio:** If selected, Interaction Media Streaming Server streams audio from devices connected to the host computer, such as a CD player or MP3 player.

**Text to Speech:** If selected, Interaction Media Streaming Server converts text to spoken audio.

**Voicemail Playback:** If selected, Interaction Media Streaming Server retrieves voice mail messages from an email server and injects the audio into calls in the CIC environment.

16. Click **Next**. If you do not have other PureConnect products on the computer, the **Logging File Path** page appears.
17. If the **Logging File Path** page appears, type or select the location for Interaction Media Streaming Server to save logging files and then click **Next**. The **Ready to install Interaction Media Streaming Server** page appears.
18. To review or modify your settings, click **Back**.
19. Click **Install**. The installation program displays the progress of the installation process. When the installation process completes, the installation program displays a final screen.

20. Click **Finish**. The installation program prompts you to restart the computer to complete the process.
21. Click **Yes**.

## Apply releases

Interactive Update Client receives release updates from the Interactive Update Provider on the CIC server. To apply a release version manually after installing Interaction Media Streaming Server, see the [PureConnect Product Downloads page](#).

## Repair or change installations

If, after installing Interaction Media Streaming Server, you attempt to do a **Repair** or **Change** installation, the installation program allows you to modify all settings, such as port and domain authentication, except for tracing. Changing the tracing could affect other PureConnect products installed on the same host.

To change the tracing option when you don't have any other PureConnect products installed on the host, delete the `ININ_TRACE_ROOT` entry from your Windows environment variables. The installation program displays the tracing option and allows you to set it during a **Repair** or **Change** installation.

# Interaction Media Streaming Server Configuration

## Configure Host Computer for Interaction Media Streaming Server

Complete the following procedures for configuring the Windows computer where you installed Interaction Media Streaming Server.

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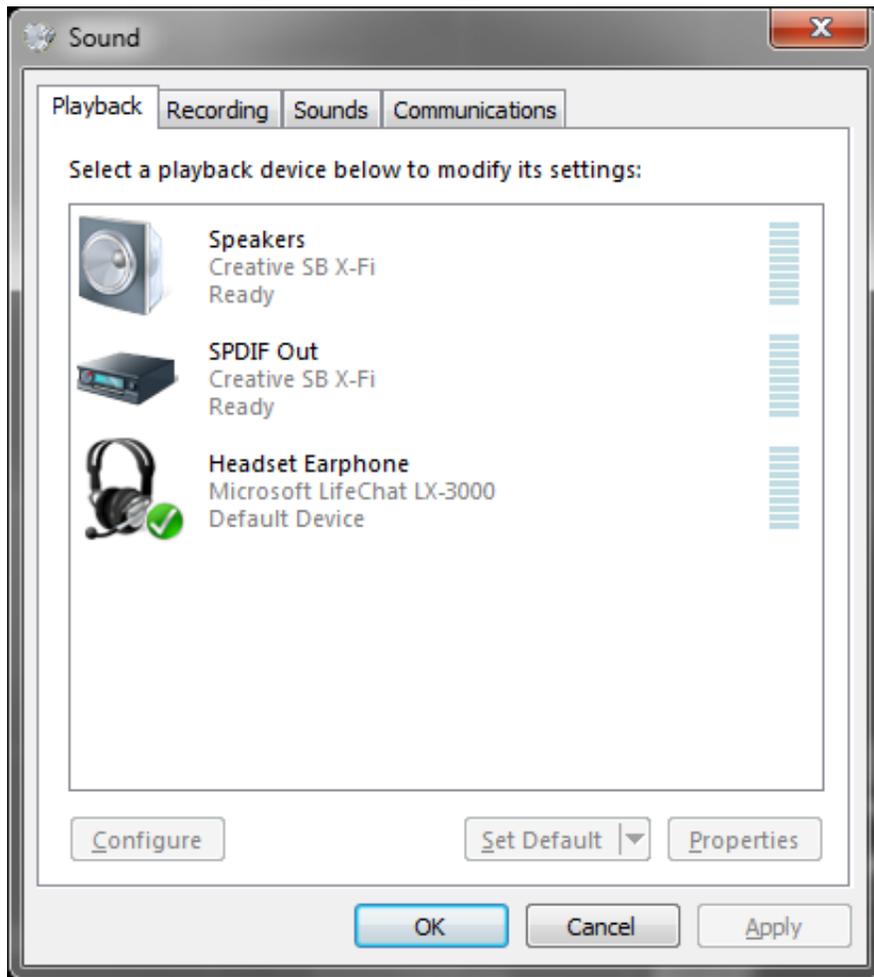
### Enable audio sources in Windows

#### To enable audio sources in Windows

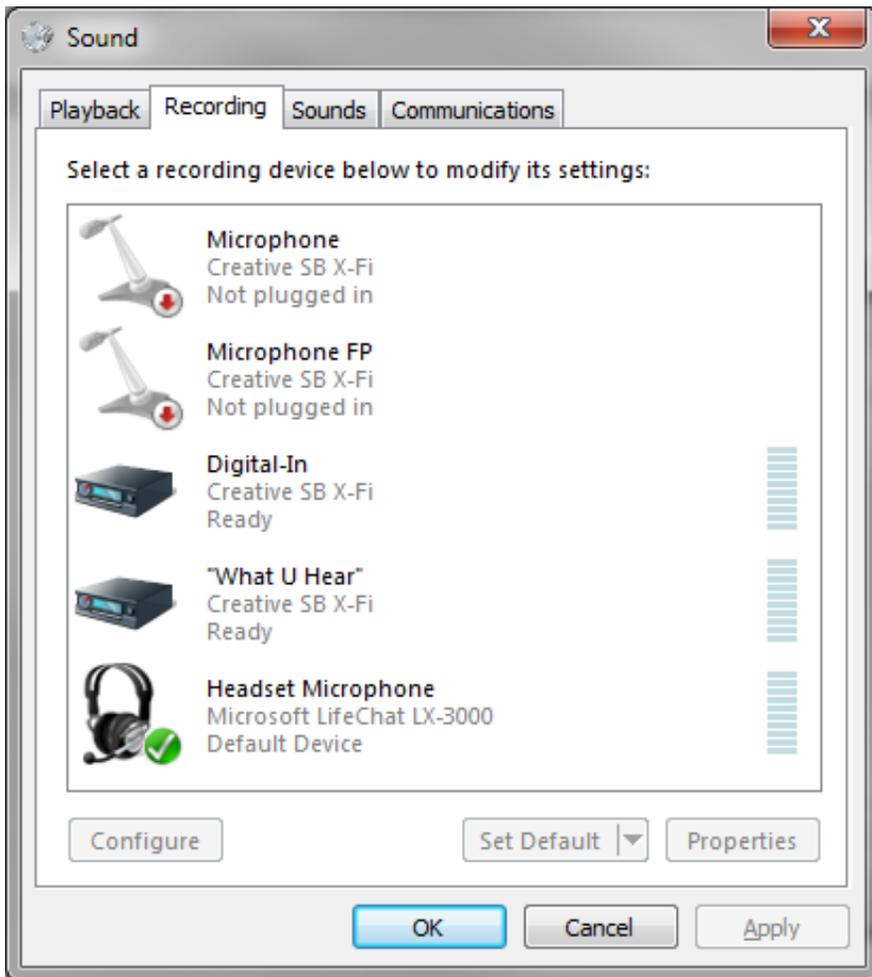
1. With a user account that has Administrator permissions, log on to the Windows computer where you installed Interaction Media Streaming Server.
2. Open the Run dialog box by pressing `Win + R` on the keyboard.
3. In the Open box, type the following command: `control /name Microsoft.Sound`. If you didn't enable the Windows Audio Service, the following message appears:



4. If the message appears, click **Yes** to enable and start Windows Audio Service, which now starts automatically when Windows starts. The Sound dialog box appears.



5. Click the **Recording** tab. The **Recording** tab appears.



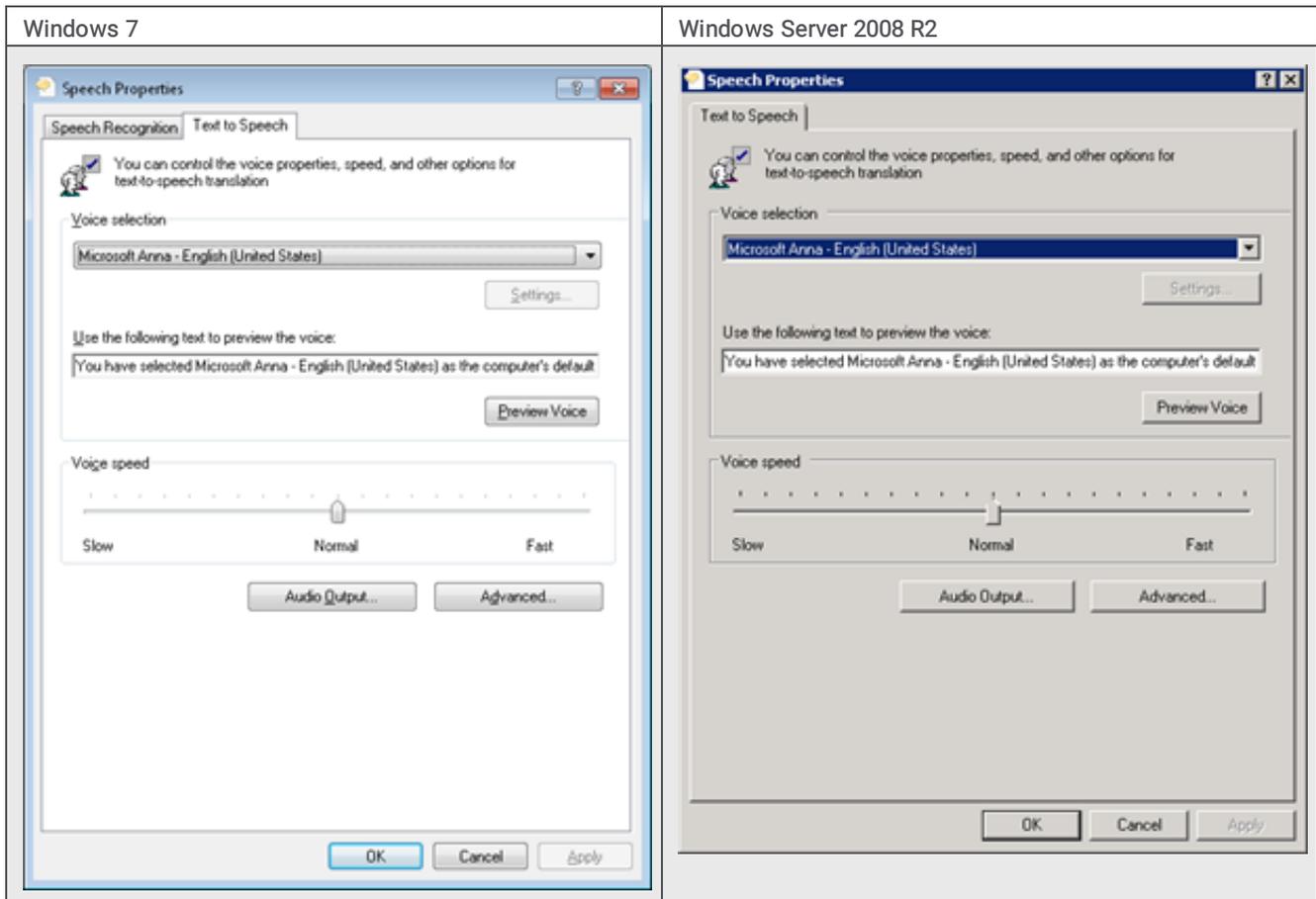
6. To verify the connection and availability of the devices that you want to use as audio sources for Interaction Media Streaming Server, right-click a listed device and select the appropriate option from the resulting shortcut menu.
7. Click OK.

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## Configure the default text-to-speech voice and speed

### To configure the default text-to-speech voice and speed

1. With a user account that has Administrator permissions, log on to the Windows computer where you installed Interaction Media Streaming Server.
2. Open the **Run** dialog box by pressing **Win + R** on the keyboard.
3. In the **Open** box, type the following command: `control /name Microsoft.TextToSpeech`. The **Text to Speech** tab of the **Speech Properties** dialog box appears.



4. In the **Voice selection** list box, click the voice to use for speech synthesis and then click **OK**.

**Note:**

You can configure the speed of the speech synthesis through Interaction Media Streaming Server. To set the default setting that Interaction Media Streaming Server uses, adjust the **Voice speed**.

## Configure Interaction Media Streaming Server in the Web Interface

Use the Web interface to configure Interaction Media Streaming Server.

### Log on to Interaction Media Streaming Server interface

To log on to Interaction Media streaming server interface

1. On any Windows computer that can access the computer hosting Interaction Media Streaming Server, open a web browser.
2. Specify the URL address of Interaction Media Streaming Server.

**Tip:**

The URL address of Interaction Media Streaming Server must include the port number.

Following are examples of the URL address format for Interaction Media Streaming Server:

- o http://192.168.0.1:8190
- o http://mss.mycompany.com:8190

Ensure that you use the correct IP address or computer name; not the identifiers used in the examples.

The web browser displays a dialog box requesting a user name and password.

3. In the dialog box, type the administrator credentials that you specified during installation and submit the credentials for authentication. The **Status-About** page of the Interaction Media Streaming Server interface appears.

### Configure general settings

General settings include the configuration of Session Initiation Protocol (SIP), Media Resource Control Protocol (MRCP), temporary directory, and which network interface listens for MRCP requests.

#### To configure general settings

1. In the upper right corner of the page, click the **Config** icon. The **Config-General** page appears.
2. Specify the values necessary for your environment and then click **Apply Changes**. For more information about these values, see "General page" in [Interaction Media Streaming Server Config Pages](#).

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## Configure audio settings

Audio settings include the configuration of Real-time Transport Protocol (RTP), Real-time Transport Control Protocol (RTCP), diagnostic recordings, cache directories, and *Prosody*.

#### To configure audio settings

1. From the **Config-General** page, click the **Audio** tab. The **Config-Audio** page appears.
2. Specify the values necessary for your environment and then click **Apply Changes**. For more information about these values, see "Audio page" in [Interaction Media Streaming Server Config Pages](#).

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## Configure mail server settings

For Interaction Media Streaming Server to retrieve voice mail messages from an email server and play them in calls in a CIC environment, do the following actions for the selected method in the **Mail** container in Interaction Administrator:

- IMAP - Define an IMAP-compatible email server.
- Interaction Message Store
  - Using Interaction Administrator, define the drive and path for CIC to create mail boxes to store voice mail messages.
  - Using Interaction Administrator, define Interaction Message Store mailboxes for each user and workgroup to receive voice mail messages.

For more information about configuring an email server for the CIC environment, see "Providers" in the [Interaction Administrator Help](#).

#### To configure mail server settings

1. From the **Config-General** page, click the **Mail Server** tab. The **Config-Mail Server** page appears.
2. Specify the values necessary for your environment and then click **Apply Changes**. For more information about these values, see "Mail Server page" in [Interaction Media Streaming Server Config Pages](#).

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## Configure external audio settings

External audio includes enabling the streaming audio feature and defining the audio devices of the host computer.

#### To configure external audio settings

1. From the **Config-General** page, click the **External Audio** tab. The **Config-External Audio** page appears.
2. Specify the values necessary for your environment and then click **Apply Changes**. For more information about these values, see "External Audio page" in [Interaction Media Streaming Server Config Pages](#).

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## Configure text-to-speech settings

Text-to-speech (TTS) includes enabling the TTS feature.

#### To configure text-to-speech settings

1. From the **Config-General** page, click the **Text to Speech** tab. The **Config-Text to Speech** page appears.
2. Specify the values necessary for your environment and then click **Apply Changes**. For more information about these values, see "Text to Speech page" in [Interaction Media Streaming Server Config Pages](#).

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## Configure administration settings

Administration includes changing the administrative user name and password for logging on to the web interface.

#### To configure administration settings

1. From the **Config-General** page, click the **Administration** tab. The **Config-Administration** page appears.
2. Specify the values necessary for your environment and then click **Apply Changes**. For more information about these values, see "Administration page" in [Interaction Media Streaming Server Config Pages](#).

## Interaction Media Streaming Server Status Pages

The following status pages are available when you log on to the Interaction Media Streaming Server web interface.

---

### About page

The **About** page displays the following information:

<b>Machine Name</b>	Name of the computer where you installed Interaction Media Streaming Server.
<b>File Version</b>	Version of Interaction Media Streaming Server main ".exe" file.
<b>Your IP Address</b>	IP address of the computer on which you are viewing the Interaction Media Streaming Server user interface.

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### Server Status page

The **Server Status** page displays the following information:

<b>SIP Session ID</b>	Unique identifier of a specific SIP session.
<b>State</b>	Action that Interaction Media Streaming Server is using for this SIP session.
<b>Resource Channel ID</b>	Channel identifier of the MRCP entity that is receiving the audio from Interaction Media Streaming Server.
<b>Details</b>	Displays another page that contains more information about this SIP session.
<b>Auto-refresh every 10 s</b>	Indicates whether to update the data on this page every 10 seconds.
<b>Refresh</b>	Re-displays the page with the most current information.

---

### Session Details page

The **Session Details** page displays the following information:

<b>Channel ID</b>	Channel identifier of the MRCP entity with which Interaction Media Streaming Server is communicating for this session.
<b>Resource ID</b>	Identifier for this session. This identifier applies to only active sessions.
<b>Local RTP Address</b>	IP address that Interaction Media Streaming Server is using for RTP communications with the requesting MRCP entity for this session.
<b>Local RTP Port</b>	Network port that Interaction Media Streaming Server is using for RTP communications with the requesting MRCP entity for this session.
<b>Local RTP Mode</b>	Communication method that Interaction Media Streaming Server is using for RTP communications with the requesting MRCP entity for this session. Valid values are: <ul style="list-style-type: none"> <li>• <b>sendonly</b> - Interaction Media Streaming Server disregards any RTP messages that it receives from the MRCP entity.</li> <li>• <b>recvonly</b> - Interaction Media Streaming Server cannot send any RTP messages to the MRCP entity.</li> <li>• <b>sendrecv</b> - Interaction Media Streaming server sends and receives messages in communications with the MRCP entity.</li> </ul>
<b>Remote RTP Address</b>	IP address of the MRCP entity that Interaction Media Streaming Server is using for RTP communications for this session.
<b>Remote RTP Port</b>	Network port of the MRCP entity that Interaction Media Streaming Server is using for RTP communications for this session.
<b>Current State</b>	Action that Interaction Media Streaming Server is using for this SIP session.
<b>Current SPEAK Request</b>	Identifier of the current MRCP SPEAK request that Interaction Media Streaming Service is servicing. MRCP SPEAK requests contain voice parameters, such as gender, category, and volume, for TTS requests.
<b>Auto-refresh every 10s</b>	Indicates whether to update the data on this page every 10 seconds.
<b>Back</b>	Returns to the <b>Server Status</b> page.
<b>Refresh</b>	Re-displays the page with the most current information.

## Resource Details page

The Resource Details page displays the following information:

<b>Resource ID</b>	Identifier for this session. This identifier applies to only active sessions.
<b>Type</b>	Type of operation that Interaction Media Streaming Server is using for this resource.
<b>Creation Time</b>	Date and time when Interaction Media Streaming Server created this resource.
<b>Age</b>	Amount of time that this resource has been active.
<b>Idle</b>	Indicates whether this resource is actively servicing a call.
<b>Engine Thread ID</b>	Identifier of the audio engine thread that is servicing this resource. PureConnect Customer Care can use this information in troubleshooting and diagnostic investigation.
<b>Graph ID</b>	Identifier for this resource that is related to the number of sessions that the associated audio engine is processing. PureConnect Customer Care can use this information in troubleshooting and diagnostic investigation.
<b>XML data</b>	Technical information for this resource in an Extensible Markup Language (XML) format. PureConnect Customer Care can use this information in troubleshooting and diagnostic investigation.
<b>Auto-refresh every 10s</b>	Indicates whether to update the data on this page every 10 seconds.
<b>Back</b>	Returns to the <b>Server Status</b> page.
<b>Refresh</b>	Re-displays the page with the most current information.

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## Audio Engine page

Interaction Media Streaming Server uses *audio engines* to process communications for interactions. Each audio engine is associated with a specific core of the CPU on the host computer. A single audio engine can process communications for multiple interactions but is limited to the available resources of the CPU core.

The **Audio Engine** page displays the current statistics of each audio engine for this installation of Interaction Media Streaming Server.

<b>Thread ID</b>	Identifier of each audio engine that Interaction Media Streaming Server can use to serve audio to VoIP calls.
<b>CPU ID</b>	Identifier of the CPU core (physical or hyperthreaded) that runs the associated audio engine.
<b>Location</b>	Windows hardware identifier of the CPU core (physical or hyperthreaded) that runs the associated audio engine. PureConnect Customer Care can use this information in troubleshooting and diagnostic investigation.
<b>Current Load</b>	Percentage of the available resources of the CPU core that the associated audio engine is using.
<b>Average Load</b>	Average percentage of CPU core resources that the associated audio engine is using. This percentage is averaged over the last 30 seconds. Interaction Media Streaming Server does not calculate the percentage over a set 30-second window. Instead, it calculates the percentage for the 30 second period before the page displays or the data refreshes.
<b>Graphs</b>	Number of sessions that the associated audio engine is processing. PureConnect Customer Care can use this information in troubleshooting and diagnostic investigation.
<b>Elements</b>	Number of separate tasks that the associated audio engine is processing for all of its current graphs. PureConnect Customer Care can use this information in troubleshooting and diagnostic investigation.
<b>Auto-refresh every 10s</b>	Indicates whether to update the data on this page every 10 seconds.
<b>Refresh</b>	Re-displays the page with the most current information.

## Interaction Media Streaming Server Config Pages

The following configuration pages are available when you log on to the Interaction Media Streaming Server web interface.

### General page

The **General** page allows you to configure settings for network control message protocols and temporary files.

<b>Listen address type</b>	<p>Version of IP addressing that Interaction Media Streaming Server supports for incoming communications.</p> <ul style="list-style-type: none"> <li>• <b>Any</b> (default) - Indicates that Interaction Media Streaming Server supports either the IPv4 or IPv6 protocol.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p><b>Note:</b> You can assign an IPv4 address, IPv6 address, or both for the network interface specified in the <b>Listen interface</b> control.</p> </div> <ul style="list-style-type: none"> <li>• <b>IP4</b> - Indicates that Interaction Media Streaming Server supports only the IPv4 protocol.</li> <li>• <b>IP6</b> - Indicates that Interaction Media Streaming Server supports only the IPv6 protocol.</li> </ul>
<b>Listen interface</b>	<p>Network interface through which Interaction Media Streaming Server processes SIP and MRCP requests. The default value is <b>Any</b>.</p> <p>The <b>Any</b> item causes Interaction Media Streaming Server to listen for SIP and MRCP messages on all defined network interfaces in the operating system.</p>
<b>Temporary directory</b>	<p>Local drive and directory path where Interaction Media Streaming Server stores ".wav" files when it plays voice mail messages and Text-to-Speech (TTS) requests.</p> <p>The default value is the directory specified during installation.</p>

<b>Keep temporary files</b>	<p>Indicates whether Interaction Media Streaming Server preserves temporary files that it creates when serving audio file for voice mail and TTS requests.</p> <p>When set to <b>false</b>, Interaction Media Streaming Server deletes temporary files immediately after use.</p> <p><b>Note:</b> Enable this feature only when troubleshooting audio problems with voice mail and TTS.</p>
<b>MRCP - maximum number of concurrent requests</b>	<p>Maximum number of concurrent MRCP sessions that Interaction Media Streaming Server supports. The default value is 32.</p> <p><b>Note:</b> Ensure that you specify an appropriate number of MRCP sessions. Using a low number can result in Interaction Media Streaming Server refusing to insert audio into VoIP calls during periods of high call volume. Using a high number can result in Interaction Media Streaming Server exhausting CPU resources.</p>
<b>MRCP - port</b>	<p>Network port that Interaction Media Streaming Server uses for sending and receiving MRCP messages.</p> <p><b>Important!</b> If you use port numbers other than the default values, ensure that you configure any necessary firewalls to allow those port numbers.</p>
<b>MRCP - protocol</b>	<p>Transport layer protocol that Interaction Media Streaming Server uses for sending MRCP messages.</p>
<b>MRCP - QoS DSCP value</b>	<p>Differentiated Service Code Point (DSCP) that Interaction Media Streaming Server assigns in the Quality of Service (QoS) header of MRCP packets.</p>
<b>MRCP - QoS enabled</b>	<p>Indicates whether to allow Interaction Media Streaming Server to mark MRCP packets with QoS data.</p>
<b>SIP - port</b>	<p>Network port that Interaction Media Streaming Server uses for sending and receiving SIP messages.</p> <p><b>Important!</b> If you use port numbers other than the default values, ensure that you configure any necessary firewalls to allow those port numbers.</p>
<b>SIP - protocol</b>	<p>Transport layer protocol that Interaction Media Streaming Servers uses for sending SIP messages</p>
<b>SIP - QoS DSCP value</b>	<p>DSCP value that Interaction Media Streaming Server assigns in the QoS header of SIP packets.</p>
<b>Apply Changes</b>	<p>Saves your changes and allows Interaction Media Streaming Server to use the new values.</p>
<b>Cancel</b>	<p>Discards your changes.</p> <p><b>Important!</b> Using the <b>Cancel</b> button after using the <b>Apply Changes</b> button does not restore the previous values on this page. You can use the <b>Cancel</b> button after changing values only if you have not used the <b>Apply Changes</b> button.</p>

## Audio page

The Audio page allows you to configure settings for network media protocols and audio processing.

<b>HTTP client cache directory</b>	<p>Genesys reserved this feature for future use.</p> <p><b>Important!</b> This box must contain a valid path on the host computer. Do not specify the value using the Universal Naming Convention (UNC) paradigm of <code>\\&lt;servername&gt;\&lt;resource&gt;</code>.</p>
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<b>Maximum number of active diagnostic captures</b>	<p>Maximum number of concurrent diagnostic recordings that Interaction Media Streaming Server can service. The default value is <b>32</b>.</p> <p><b>Note:</b> Ensure that you specify an appropriate number of sessions. Using a high number can result in Interaction Media Streaming Server exhausting CPU resources during periods of high call volume.</p>
<b>Default Prosody Rate</b>	<p>Default speed of voice mail and TTS audio that Interaction Media Streaming Server inserts into calls. Interaction Media Streaming Server cannot increase the speed of audio playback for streaming audio sources, such as line-in devices and Internet-based sources.</p>
<b>Default Prosody Volume</b>	<p>Default volume of audio that Interaction Media Streaming Servers inserts into calls.</p> <p><b>Note:</b> This feature cannot overcome the problem of an audio source configured with a low volume setting in Windows. Using this feature in such a way can result in distorted audio and decreased quality. Ensure that each audio source that you use for Interaction Media Streaming Server has an acceptable volume level.</p>
<b>RTCP - QoS DSCP value</b>	<p>Differentiated Service Code Point (DSCP) that Interaction Media Streaming Server assigns in the Quality of Service (QoS) header of RTCP packets.</p>
<b>RTCP - QoS enabled</b>	<p>Indicates whether to allow Interaction Media Streaming Server to mark RTCP packets with QoS data.</p>
<b>RTP - address type</b>	<p>Version of IP addressing that Interaction Media Streaming Server supports for RTP communications.</p> <ul style="list-style-type: none"> <li><b>Any</b> (default) - Indicates that Interaction Media Streaming Server supports either the IPv4 or IPv6 protocol.</li> </ul> <p><b>Note:</b> You can assign an IPv4 address, IPv6 address, or both.</p> <ul style="list-style-type: none"> <li><b>IP4</b> - Indicates that Interaction Media Streaming Server supports only the IPv4 protocol.</li> <li><b>IP6</b> - Indicates that Interaction Media Streaming Server supports only the IPv6 protocol.</li> <li><b>IP4IP6</b> - Indicates that Interaction Media Streaming Server supports both the IPv4 and IPv6 protocols.</li> </ul> <p><b>Important!</b> To use this setting, configure both an IPv4 and an IPv6 address for the network interface specified in the <b>RTP - interface</b> control. If the specified network interface does not contain both address formats, all communications from Interaction Media Streaming Server fail.</p>
<b>RTP - captures enabled</b>	<p>Allows Interaction Media Streaming Server to create packet capture (PCAP) files for diagnosing problems of audio playback. These files are in the logging directory that you specified during installation.</p>
<b>RTP - port range</b>	<p>One or more ranges of network ports that Interaction Media Streaming Server uses for sending RTP (audio) packets.</p> <p>In the box on the left, specify the starting port number for the range. In the box on the right, specify the ending port number for the range.</p> <p>The default values are <b>16384</b> and <b>32767</b>.</p> <p><b>Note:</b> You can create multiple port ranges. For example, to use ports 15000 through 15500 and 15700 through 15999, you can use the <b>Add Value</b> button to create the second range.</p> <p><b>Important!</b> If you use port numbers other than the default values, ensure that you configure any necessary firewalls to allow those port numbers.</p>
<b>Add Value</b>	<p>Adds another range of network ports that Interaction Media Streaming Server can use to send RTP (audio) packets.</p>
<b>Del</b>	<p>Removes the associated range of ports from the Interaction Media Streaming Server configuration.</p>
<b>RTP - QoS DSCP value</b>	<p>Differentiated Service Code Point (DSCP) that Interaction Media Streaming Server assigns in the Quality of Service (QoS) header of RTP packets.</p>
<b>RTP - QoS enabled</b>	<p>Indicates whether to allow Interaction Media Streaming Server to mark RTCP packets with QoS data.</p>

<b>RTP - interface</b>	<p>Network interface that Interaction Media Streaming Server uses to send RTP packets.</p> <p><b>Note:</b> If you select the <b>Any</b> item, the Interaction Media Streaming Server service selects an available network interface, which it continues to use until the service restarts.</p>
<b>Apply Changes</b>	Saves your changes and allows Interaction Media Streaming Server to use the new values.
<b>Cancel</b>	<p>Discards your changes.</p> <p><b>Important!</b> Using the <b>Cancel</b> button after using the <b>Apply Changes</b> button does not restore the previous values on this page. You can use the <b>Cancel</b> button after changing values only if you have not used the <b>Apply Changes</b> button.</p>

## Mail Server page

The **Mail Server** page allows you to configure the settings that Interaction Media Streaming Server requires to retrieve voice mail messages from an email server.

### Important!

This version of Interaction Media Streaming Server supports only IMAP email servers and the Interaction Message Store for storing and retrieving voice mail messages.

To have Interaction Media Streaming Server retrieve voice mail messages from an Exchange server, install and configure Microsoft Outlook on the host computer.

To have Interaction Media Streaming Server retrieve voice mail messages from an IBM Notes server, install and configure the Notes client on the host computer.

<b>Mail retrieval enabled</b>	Indicates whether to allow Interaction Media Streaming Server to retrieve voice mail audio files from an email server and insert the audio into a call.
<b>IMAP - timeout</b>	Number of seconds that elapse before Interaction Media Streaming Server closes the current IMAP connection to the server. A value of -1 specifies that the connection does not expire. The maximum value is 32767.
<b>IMS - root directory</b>	<p>Directory where the CIC server saves voice mail and fax messages. The file location requires different methods of specifying the root IMS directory:</p> <ul style="list-style-type: none"> <li>• CIC server - Drive and directory path, such as <code>D:\I3\IC\FBMC</code>.</li> <li>• Remote file server - Universal Naming Convention (UNC) path, such as <code>\\&lt;server name&gt;\FBMC\</code>.</li> </ul> <p><b>Important!</b> The user account under which you configured the Interaction Media Streaming Server service to run must have read and write permissions to the IMS root directory.</p>
<b>Notes - password</b>	Password that the IBM Notes server requires for authentication.
<b>Apply Changes</b>	Saves your changes and allows Interaction Media Streaming Server to use the new values.
<b>Cancel</b>	<p>Discards your changes.</p> <p><b>Important!</b> Using the <b>Cancel</b> button after using the <b>Apply Changes</b> button does not restore the previous values on this page. You can use the <b>Cancel</b> button after changing values only if you have not used the <b>Apply Changes</b> button.</p>

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## External Audio page

The **External Audio** page allows you to specify the audio sources that Interaction Media Streaming Server can use to insert audio into VoIP calls. These sources include defined Windows devices and a ".wav" file.

<b>External audio enabled</b>	Indicates whether to allow Interaction Media Streaming Server to use audio sources in the <b>Device/Name Mapping</b> set of controls.
<b>Device/Name Mapping</b>	<p>Custom label for audio devices defined on the computer.</p> <ul style="list-style-type: none"><li>• <b>Device Description</b> - Name of the device as it appears in Windows.</li><li>• <b>Name</b> - Unique name to represent this device. Interaction Media Streaming Server and CIC use this name to reference the associated device.</li></ul> <p><b>Important!</b> Provide a value in the <b>Name</b> box for any device that you want to use as an audio source with Interaction Media Streaming Server. If you do not provide a name, Interaction Media Streaming Server cannot insert audio from the device into calls.</p> <p><b>Tip:</b> To use streaming Internet sources or multimedia files on the computer as audio for Interaction Media Streaming Server, select an output device, such as <b>Speakers</b>, and use the appropriate program on the computer to play the audio source. For example, to use audio from a streaming Internet source, open a web browser, navigate to the website, and play the audio as you would normally.</p>
<b>Fallback Audio File (read only)</b>	<p>".wav" file that Interaction Media Streaming Server plays if no audio devices are available on the host computer. The default value is</p> <p>C:\ProgramFiles(x86)\InteractiveIntelligence\Resources\SystemDefaultAudioOnHold.wav.</p> <p>For example, if you disconnect a USB audio device that Interaction Media Streaming Server uses as an audio source, it determines that the device is not present and, instead, plays this ".wav" file.</p>
<b>Apply Changes</b>	Saves your changes and allows Interaction Media Streaming Server to use the new values.
<b>Cancel</b>	<p>Discards your changes.</p> <p><b>Important!</b> Using the <b>Cancel</b> button after using the <b>Apply Changes</b> button does not restore the previous values on this page. You can use the <b>Cancel</b> button after changing values only if you have not used the <b>Apply Changes</b> button.</p>

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## Text to Speech page

The **Text to Speech** page allows you to enable or disable the TTS feature.

<b>Text-to-speech enabled</b>	Indicates whether to allow Interaction Media Streaming Server to service Text-to-Speech (TTS) requests.
<b>Available Voices (read only)</b>	Text-to-Speech (TTS) voices that are available on the host Windows operating system.
<b>Apply Changes</b>	Saves your changes and allows Interaction Media Streaming Server to use the new values.
<b>Cancel</b>	Discards your changes.  <b>Important!</b> Using the <b>Cancel</b> button after using the <b>Apply Changes</b> button does not restore the previous values on this page. You can use the <b>Cancel</b> button after changing values only if you have not used the <b>Apply Changes</b> button.

## Administration page

The **Administration** page allows you to change the user name and password that you use to log on to the Interaction Media Streaming Server web interface.

### Caution!

This page does not use HTTPS for secure transmission of data. Genesys strongly recommends that you change the user name and password only from the host computer and not from a remote computer.

<b>Old User Name</b>	Current user account to change.
<b>Old Password</b>	Password of the user account specified in the <b>Old User Name</b> box.
<b>New User Name</b>	New name for the user account specified in the <b>Old User Name</b> box.
<b>New Password</b>	New password of the user account specified in the <b>New User Name</b> box.
<b>Confirm New Password</b>	New password specified in the <b>New Password</b> box. The system uses this box to verify that you typed the password in the <b>New Password</b> box as you intended.
<b>Apply</b>	Saves your changes and allows Interaction Media Streaming Server to use the new values.
<b>Revert</b>	Discards your changes.  <b>Important!</b> Using the <b>Revert</b> button after using the <b>Apply</b> button does not restore the previous values on this page. You can use the <b>Revert</b> button after changing values only if you have not used the <b>Apply</b> button.

# CIC Environment Configuration for Interaction Media Streaming Server

After you configure Interaction Media Streaming Server, configure other systems in the CIC environment to use the resources of the Interaction Media Streaming Server.

For more information, see the following:

- [Define Interaction Media Streaming Server in Interaction Administrator](#)
- [Configure Music On Hold From Interaction Media Streaming Server External Audio Source](#)
- [Configure Interaction Media Streaming Server External Audio Sources With Handlers](#)

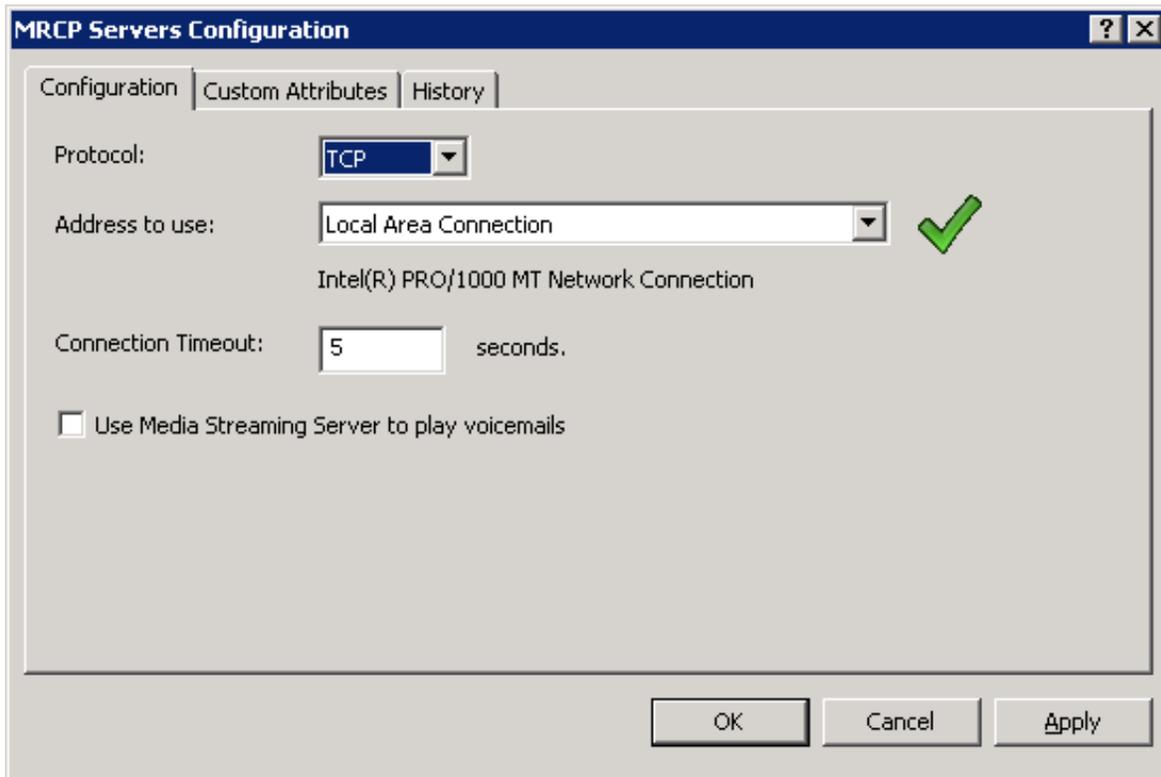
## Define Interaction Media Streaming Server in Interaction Administrator

To use Interaction Media Streaming Server in your CIC environment, define it as a Media Resource Control Protocol (MRCP) server in Interaction Administrator.

**To define Interaction Media Streaming Server in Interaction Administrator**

1. Open Interaction Administrator and log on with credentials that have administrator permissions. The **Interaction Administrator** window appears.
2. In the **System Configuration** container, click **MRCP Servers**.





**Note:**

If you plan to use Interaction Media Streaming Server to perform Text-to-Speech operations, in the left pane click **System Configuration** and in the right pane, double-click **Configuration**. In the **System Configuration** dialog box, click the **Text To Speech** tab. In the **Default TTS Provider** list box, click the provider to use.

- To use Interaction Media Streaming Server to play voice mail messages in Customer Information Center calls, select the **Use Media Streaming Server to play voicemails** check box.

**Important!**

Enabling the **Use Media Streaming Server to play voicemails** feature overrides the previous voice mail retrieval method for the entire CIC environment.

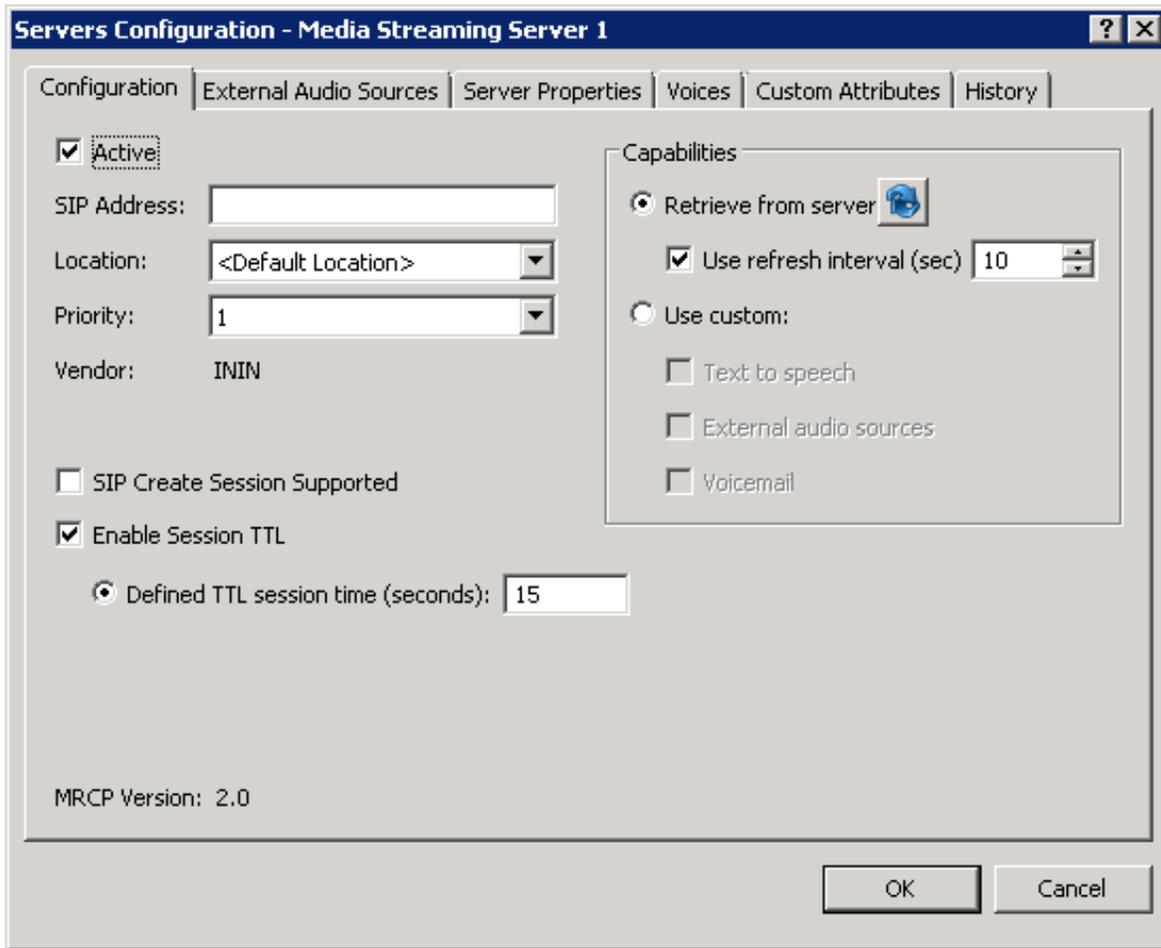
When you enable this feature, the CIC server sends voice mail play requests to Interaction Media Streaming Server.

When you disable this feature, the CIC server downloads the voice mail message and Interaction Media Server retrieves and plays the voice mail message from the Prompt Server component.

- Click **OK**.
- In the left pane of the **Interaction Administrator** window, expand **MRCP Servers** and then click **Servers**.
- In the right pane, right-click an open area and **select New** from the resulting shortcut menu. The **New MRCP Server** dialog box appears.



- In the **Name** box, type a unique name for the Interaction Media Streaming Server.
- In the **Vendor** group, click **ININ** and then click **OK**. The **Servers Configuration** dialog box appears.



- In the **SIP Address** box, type a Session Initiation Protocol (SIP) address specifying the Interaction Media Streaming Server.

SIP addresses require the following format:

```
sip:<entity>@<server address>:<port>
```

Examples:

- sip:mss1@192.168.1.10:6060
- sip:mss1@myserver.domain.com:6060

You can specify any string as the *<entity>* variable.

- In the **Location** list box, click the existing location to which to assign this Interaction Media Streaming Server.

**Note:**

You can use MRCP selection rules to configure CIC to select Interaction Media Streaming Servers in specific locations to service calls in the same or other locations. For more information about MRCP selection rules, see the [MRCP Technical Reference](#).

- In the **Priority** list box, click a value to indicate whether CIC selects this Interaction Media Streaming Server to service a call.

The values for the **Priority** list box range from 1 (highest priority) to 5 (lowest priority). To service a call with MRCP requests, CIC first sends the request to a server with a priority level of 1. If none are available, CIC searches for any servers with a priority level of 2. CIC continues this process of searching for servers of specific priority levels until it finds one that accepts the request. If none are found, the MRCP operation fails.

**Note:**

A CIC server considers the **Priority** of an Interaction Media Streaming Server after MRCP selection rules.

- If you enabled and configured all features of Interaction Media Streaming Server through its web interface, you can leave the **Retrieve from Server** option selected. If you want to limit this server definition to one or two specific features, click the **Use custom** option and select the appropriate check boxes.

**Note:**

If you are using external audio sources, click the **Retrieve from Server** option to populate them. If you always have the **Use custom** option selected, CIC never knows that the MSS has external audio sources. CIC has to retrieve that information at least once.

- Click **OK**. The Interaction Media Streaming Server can now service calls in the CIC environment.

**Note:**

If you click the option to the right of the **Retrieve from server** check box, the system removes all configuration data and doesn't update the items on the **External Audio Sources** tab. To see any device changes on that tab, close and reopen the **Servers Configuration** dialog box for that specific MRCP server.

## Configure Music On Hold From Interaction Media Streaming Server External Audio Source

After you define external audio sources through the web interface of Interaction Media Streaming Server and define the server through the MRCP Servers object in Interaction Administrator, you can use the external audio sources as music on hold for workgroups.

### To configure music on hold from Interaction Media Streaming Server external audio source

- Open Interaction Administrator and log on to Interaction Administrator with credentials that have administrator permissions. The **Interaction Administrator** window appears.
- In the **People** container, click **Workgroups** and in the right pane, double-click an existing workgroup for which to configure the music on hold source. The **Workgroup Configuration** dialog box appears.

**Workgroup Configuration - Marketing**

Phonetic Spellings | Secure Input Forms | Options | Security | Custom Attributes | History

Configuration | **Files** | Members | Roles/Supervisors | Wrap-up Codes | ACD

Extension:

Mailbox User:  ...

Preferred Language:

Workgroup has Queue

Active

Record All Calls, Emails, Chats and Instant Questions in this Workgroup

Workgroup Spans Sites

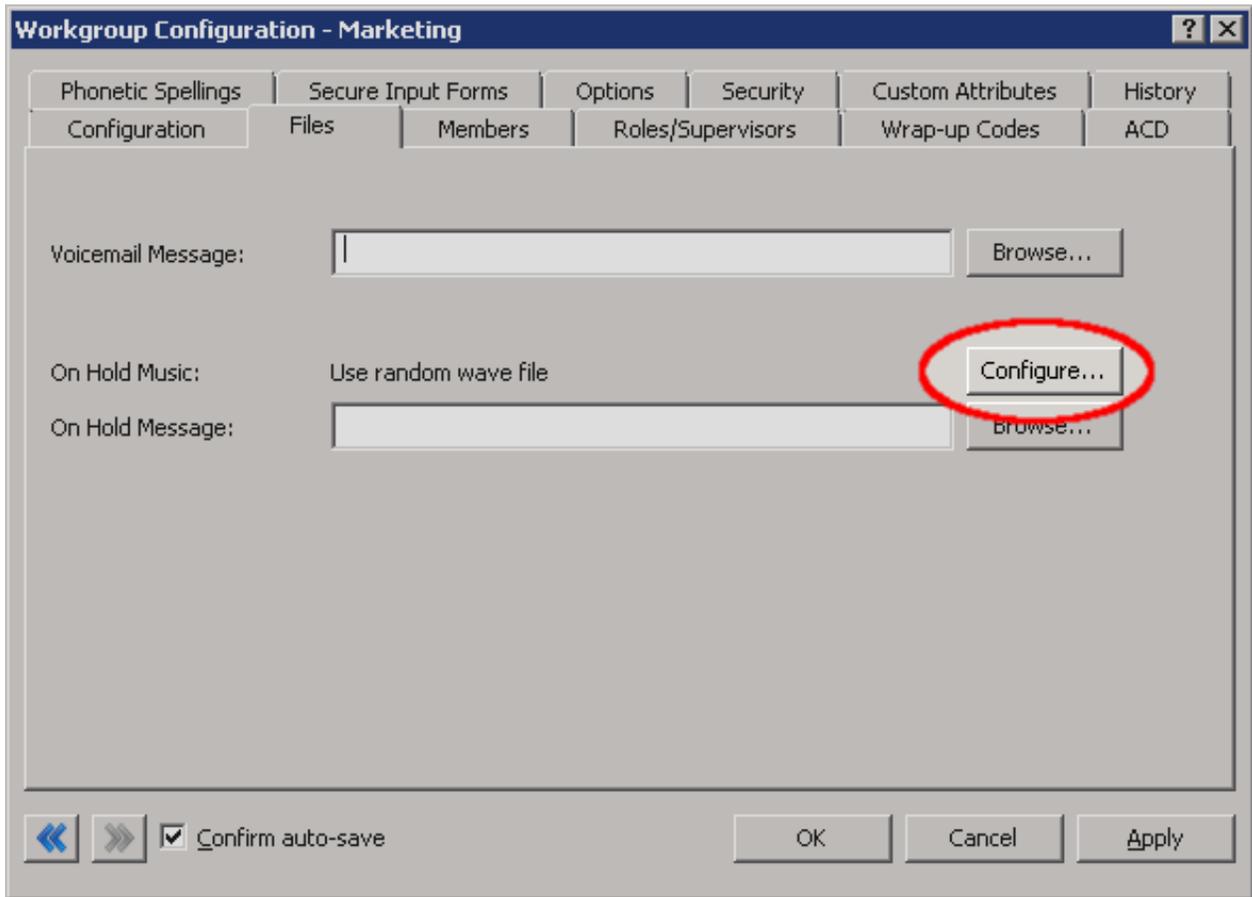
Use this tone when recording

Play to external parties only

Save beep tones in recordings

Confirm auto-save

- Click the **Files** tab.



4. Click **Configure**. The **Audio Configuration** dialog box appears.



5. Click **Use external audio source**.
6. In the **Use external audio source** list box, click the Interaction Media Streaming Server external audio source that you want callers to hear when placed on hold.

Optionally, you can select the **Only play the audio source for** check box and specify the number of seconds to play the audio from the external audio source. For example, you can use the external audio source for 120 seconds, play an On Hold Message, and then continue using the external audio source.

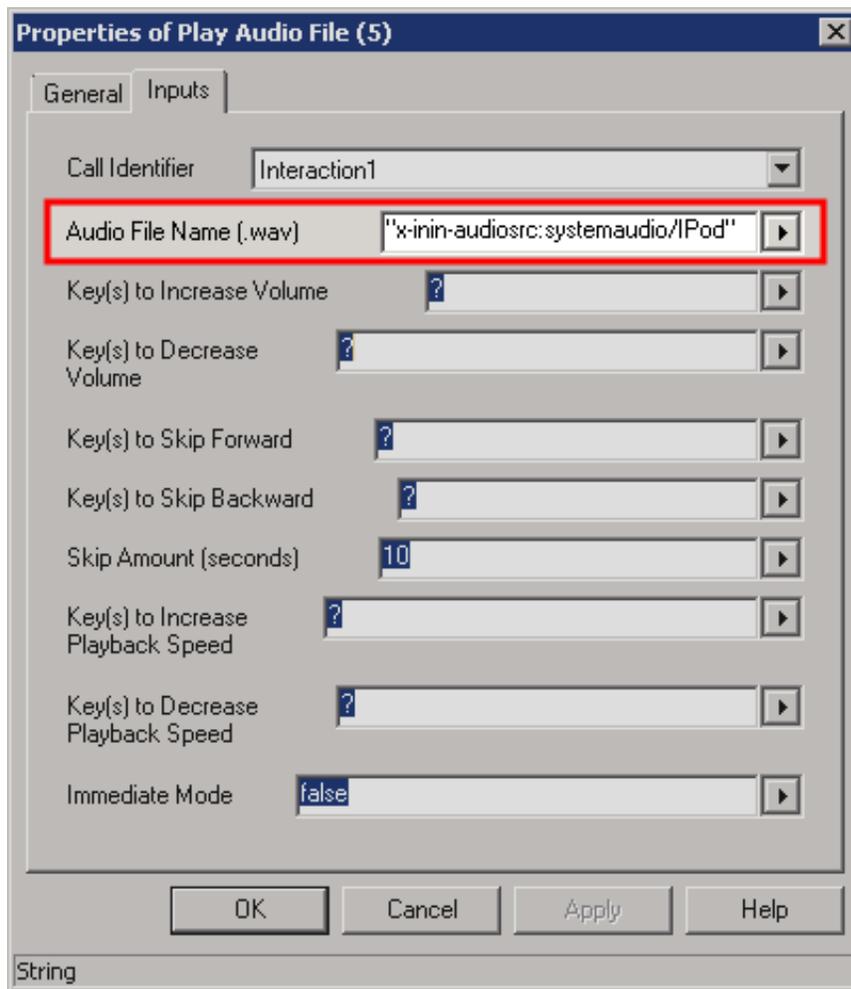
7. Click **OK** to save your changes and return to the **Workgroup Configuration** dialog box.

## Configure Interaction Media Streaming Server External Audio Sources With Handlers

You can configure the **Play Audio File** tool step in a handler to use an external audio source from an Interaction Media Streaming Server. For more information about the **Play Audio File** tool step, see "Play Audio File" in the ["Interaction Designer Help"](#).

To configure Interaction Media Streaming Server external audio sources with handlers

1. Open Interaction Designer and click the **Telephony** tab.
2. Double-click the **Play Audio File** tool step. The tool step appears in the handler.
3. Right-click the tool step and then click **Properties**. The **Properties of Play Audio File** dialog box appears.
4. Click the **Inputs** tab.



5. In the **Audio File Name (.wav)** box, specify the Interaction Media Streaming Server external audio source. The format is: "x-inin-audiosrc:systemaudio/<external audio source>".

<external audio source> is the name of the Interaction Media Streaming Server external audio source that you define on the **External Audio** tab of the Interaction Media Streaming Server web interface. For more information about the **External Audio** tab, see "Configure external audio settings" in [Configure Interaction Media Streaming Server in the Web Interface](#).

## Specify an External Audio Source for a Play Audio Operation

For a Play Audio operation in Interaction Attendant, you can specify that it uses an external audio source from an Interaction Media Streaming Server.

### Note:

Before you can specify the external audio source in Interaction Attendant, define the external audio sources using the Interaction Media Streaming Server web interface and define the server through the **MRCP Servers** object in Interaction Administrator. For more information, see "Configure external audio settings" in [Configure Interaction Media Streaming Server in the Web Interface](#) and [Define Interaction Media Streaming Server through Interaction Administrator](#).

To specify an external audio source for a Play Audio operation

1. In Interaction Attendant, insert a Play Audio operation.
2. In the right pane, select the **External audio source** option in the **Audio** group.
3. In the Name list box, specify an available external audio source.

The screenshot shows the configuration window for 'Audio Playback1'. The title bar reads 'Audio Playback1' and the subtitle is 'Audio Playback - Play an audio file to the caller'. The window is divided into several sections:

- Node Characteristics:** Includes a 'Name' field with 'Audio Playback1', a 'Digit' dropdown set to '<None>', and checkboxes for 'Active' (checked), 'Default Action', 'Enable IVR reporting', and 'Add entry to the Interaction Log'. There is a 'Configure Speech Recognition...' button.
- Audio:** Features radio buttons for 'Audio file', 'Audio source', 'Audio file specified by the following interaction attribute', and 'External audio source'. Below these is a 'Name' dropdown set to '<None>' and a 'Preview' section with play, stop, and refresh buttons. There are also 'Browse...', 'Record...', and 'Details...' buttons.
- Repetition:** Contains two numeric spinners: 'Number of times to repeat this prompt:' (set to 0) and 'Number of seconds to wait before repeating:' (set to 0).
- Action When Finished:** Includes radio buttons for 'Go back to the previous menu' (checked), 'Disconnect', 'Transfer to Operator Processing', and 'Jump to a custom location'. A dropdown menu is visible below these options.

4. From the menu bar, select **File > Publish** to save your changes to the CIC server.

## Specify an External Audio Source for Queue Audio in a Group Transfer Operation

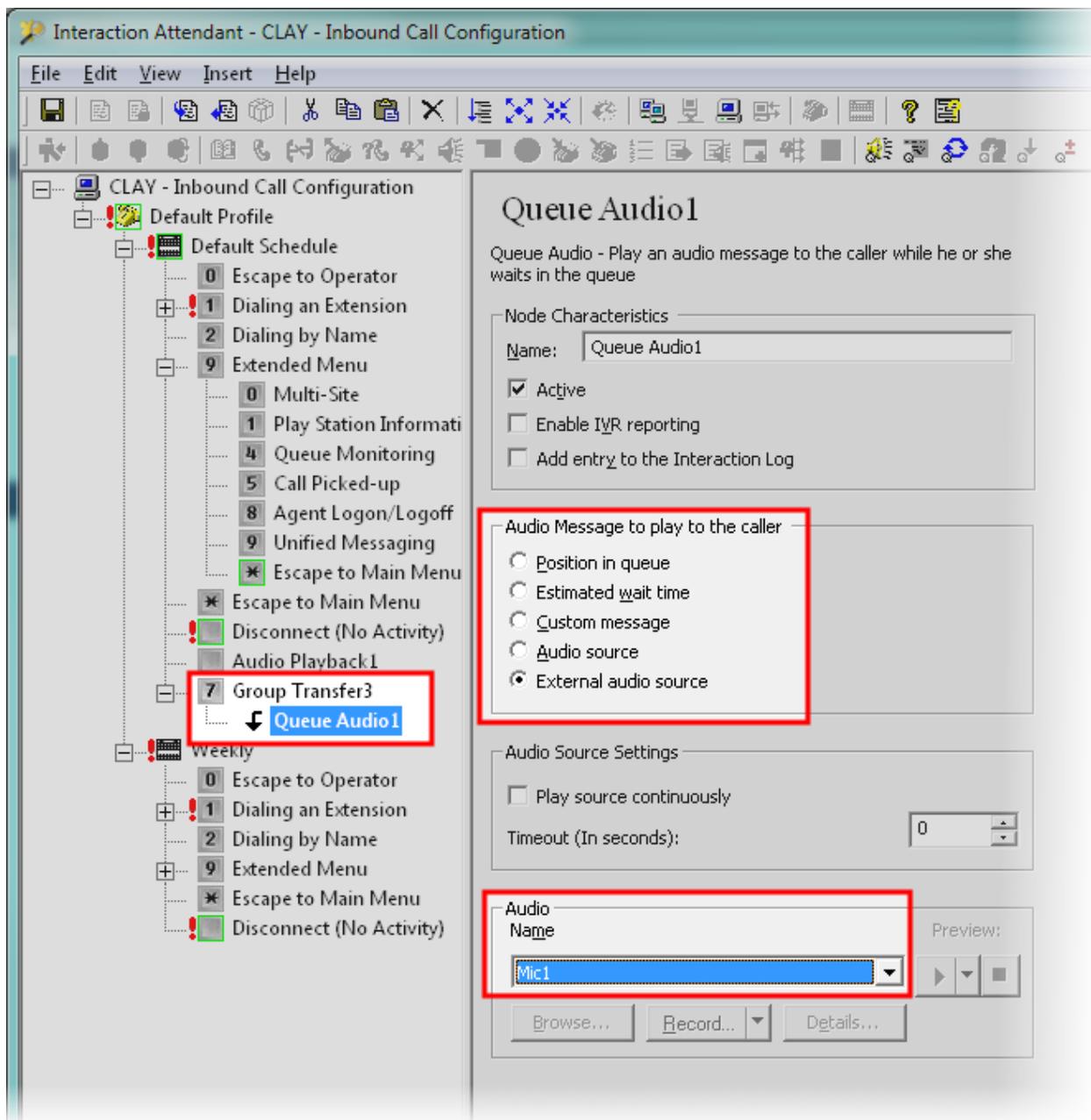
To specify an external audio source for queue audio in a group transfer operation

1. In Interaction Attendant, insert a **Transfer to a Workgroup** or a **Station Group** operation.

**Note:**

A valid Workgroup or Station Group must exist in Interaction Administrator before you can select it in Interaction Attendant. For more information, see the *Interaction Administrator* documentation.

2. In the left pane of the Interaction Attendant window, click the **Group Transfer** object that you just inserted.
3. Right-click the **Group Transfer** object and select **Insert > New Operation > Queue Operation > Play a Message to the caller** from the resulting shortcut menu. The system inserts a **Queue Audio** object under the **Group Transfer** object in the left pane.



4. In the left pane, click the new **Queue Audio** object.
5. In the **Audio Message to play to the caller** group, click **External audio source**.
6. In the **Audio** group in the **Name** list box, click the external audio source.
7. From the menu bar, click **File > Publish** to save your changes to the CIC server.

# Maintain Interaction Media Streaming Server

Interaction Media Streaming Server is a robust MRCP server that requires little maintenance or administration after initial configuration. However, to ensure that Interaction Media Streaming Server is functioning at an optimum level, you can do some optional maintenance tasks.

## Copy the configuration file to an archive

Interaction Media Streaming Server stores its internal configuration to the following path:

```
<installation directory>\Resources\MSSConfig\config_mss.xml
```

<installation directory>, by default, is C:\Program Files (x86)\Interactive Intelligence.

You can copy this file to other storage systems for archiving purposes. In the unlikely event that you must reinstall Interaction Media Streaming Server or if you must restore the configuration, you can copy this file back to the host computer.

## Monitor performance and system availability

It is good practice to check servers periodically for performance, availability, and resource usage. This practice can ensure that Interaction Media Streaming Server can service the necessary call volume levels in your CIC environment.

There are several methods of determining the health of your Interaction Media Streaming Server. The following list provides some examples:

- View the **Status-Audio Engine** page of the Interaction Media Streaming Server web interface to see the current and average CPU usage percentages.
- Use Event Viewer on the Windows host computer to find any errors or warnings.
- Use Resource Monitor to ensure that the Windows host computer does not have any problems with taxed CPU, disk, network, or memory resources.
- View the properties of the fixed storage drives on the host computer to ensure that free space is available for temporarily storing voice mail messages and caching of streamed media.

## Examine CIC event log

The CIC server records not only events that occur on its host computer but some events on its subsystems as well. Use Event Viewer on the CIC to ensure that no Interaction Media Streaming Server events are present.

# Antivirus Requirements and Best Practices for CIC and Subsystem Servers

The following information provides the requirements and best practices regarding antivirus software products for CIC and its subsystem servers. These subsystem servers include Interaction Media Server, Interaction Media Streaming Server, Interaction SIP Proxy, and others.

Follow these practices and requirements when you install and use an antivirus software product on servers for CIC or its subsystems to ensure maximum performance and processing capacity:

Genesys provides documentation for configuring the supported antivirus software products for use with CIC servers. To view the documentation, on the [Genesys Testlab site](#), click the **Data & System Protection** hyperlink.

## Install only a supported antivirus product

Genesys selects and tests different antivirus software products from multiple vendors based on the popularity of the product in customer environments. Genesys tests each antivirus software product on several criteria, such as performance impact, compatibility, and processing capacity. Genesys then validates specific antivirus software products for use with CIC and its subsystem servers.

### To view the supported antivirus software product

1. Open a web browser to the [Genesys Testlab site](#).
2. Select the **Data and System Protection** hyperlink. The supported antivirus products, the associated versions, and any impacts on performance and capacities for CIC and its subsystem servers appears.

#### Important!

Ensure that you know what antivirus software product and version that you plan to use on your CIC and its subsystem servers before you make purchasing decisions. Some antivirus software products reduce capacities and performance, which require more servers or affect licensing decisions.

## Install only the virus protection security feature

Many software security products and suites include features in addition to virus protection. For performance and capacity considerations, CIC and its subsystem servers do not support any third-party security features other than virus protection. Many of these security features require the installation of drivers that can introduce decreases in performance and capacity, such as resets of network interface adapters.

The following list provides some of the unsupported security features that software security suite products can install:

- Firewall
- Malware protection
- Spyware protection
- Intrusion prevention
- Network monitoring

#### Important!

As security suite products typically install all security features by default, Genesys requires that you do not use standard or default installation options. Customize the installation to include only virus protection.

## Configure real-time protection for only write operations

Most antivirus software products provide a *real-time protection* feature, which scans for viruses when a program or process attempts a read, write, modify, or run operation on a file. The terminology for this type of feature varies between antivirus software products, such as *On-Access Scanning* and *Auto-Protect*. For more information about configuring the real-time protection feature of your antivirus software product, see the documentation for that product to determine its terminology for that feature.

Server software products run and read files frequently. By default, most antivirus software products use the real-time protection feature to scan files on read, write, modify, and run operations. Such a configuration can significantly reduce input and output performance of the storage media, create file lock contention, and cause a reduction in processing capacities of the host server.

**Important!**

Configure the real-time protection feature of your antivirus software product to scan for viruses for only *write* operations, such as when files are created or modified.

## Exclude continually accessed file types and directories

To process the interactions in your organization, CIC and its subsystem servers must write and modify files on a rapid, continual basis, such as recordings and log files. To ensure the maximum performance, configure your antivirus software product to exclude specific file types and directories, as presented in the following sections.

### Files and file types to exclude

Configure your antivirus software product to exclude the following files and file name extensions:

.i3p	.dxs	.i3pub
.i3c	.db	.ininlog (CIC log file format)
.ivp	.ihd	.ininlog_idx (CIC log index file format)

### Directories and subdirectories to exclude

**Important!**

When you exclude a directory, exclude all its subdirectories also.

Configure your antivirus software product to exclude the following directories and all subdirectories:

- Directory that contains the Interaction Media Streaming Server log files.  
The directory containing log files is set through a PureConnect installation program. If Interaction Media Streaming Server is the only PureConnect product installed on this computer, you set the directory in the **Logging File Path** box when you installed Interaction Media Streaming Server.
- Directory specified in the **Temporary directory** box on the **Config-General** page of the Interaction Media Streaming Server web interface.
- Directory specified in the **HTTP client cache directory** box on the **Config-Audio** page of the Interaction Media Streaming Server web interface.

**Important!**

Your specific antivirus software product may require more configuration. For instructions beyond these recommendations, see the documentation for your specific antivirus software product at the [Genesys Testlab site](#).

## Update virus definitions daily

Genesys strongly recommends that you configure your antivirus software product to download and implement new virus definitions daily. Schedule these updates to occur during off-peak hours. For more information about virus definitions, see the documentation for your antivirus software product.

## Conduct a full scan of the file system regularly

Genesys strongly recommends that you configure your antivirus software product to scan the file system of the host server storage media on a daily or weekly basis. Schedule this scan to occur during off-peak hours. Ensure that you select a time for starting the scan that allows it to finish before demand on host server resources increases.

Some antivirus products use separate exclusion lists for real-time protection and full system scans. Ensure that you define the files and directories specified in "Exclude continually accessed file types and directories" in [Antivirus Requirements and Best Practices for CIC and Subsystem Servers](#).

# Troubleshoot Interaction Media Streaming Server

## Choppy audio

- Ensure that you enabled Quality of Service (QoS) throughout your network.
- Ensure that the network has sufficient bandwidth.
- Ensure that both the Interaction Media Streaming Server and the Interaction Media Server servicing the call have sufficient CPU, disk, network, and memory resources available.

## No music-on-hold

- Ensure that Interaction Media Streaming Server is operational and connected to the network.
- Ensure that the audio source connected to Interaction Media Streaming Server is actually providing an audio stream and not silence. Use the **Sound** applet (`mmsys.cpl`) in **Control Panel** to view or configure the volume settings for multiple devices.

## Interaction Media Streaming Server service no longer starts

If you change the domain password for the account that you used to install Interaction Media Streaming Server, the service can no longer authenticate and start successfully.

To solve this problem, open the **Services** window, edit the properties of the **Interaction Media Streaming Server** service, and provide the new password for the account. Start the service manually. Upon the next restart of the host computer, the service again starts automatically.

## CIC is playing the wrong external audio source

If you use the same name for external audio devices on multiple Interaction Media Streaming Servers, CIC distributes usage between the devices.

To stop CIC from selecting the incorrect external audio source, determine which Interaction Media Streaming Server has the device, log on through its web interface, and rename the device on the **Config-External Audio** tab.

# Glossary

Term	Definition
Audio engine	A process that uses a single CPU core to service audio for VoIP calls. Based on licensing, Interaction Media Streaming Server has multiple audio engines, each of which can service multiple VoIP calls simultaneously.
FBMC (File Based Mail Connector)	A feature of CIC for communication and functionality with an email server. This feature enables Interaction Media Streaming Server to retrieve voice mail messages if the email server does not support the IMAP protocol. FBMC uses a proprietary file format.
IMAP (Internet Message Access Protocol)	A standard (RFC 3501) protocol for retrieving email messages from a server.
IMS (Interaction Message Store)	Interaction Message Store stores voice mail and faxes as files on the CIC server (small implementations) or a network file server (large implementations). Users are associated with mailboxes in a file directory structure, and voice mail and fax messages route to these mailboxes. Users can access voice mail messages with a CIC client or the telephone user interface (TUI). Users can view fax messages in a CIC client or forward the fax to another fax number.
MRCP (Media Resource Control Protocol)	A standard (v1 or v2 - RFC 4463) protocol for establishing and controlling speech services in VoIP communications. MRCP does not support audio data.
Prosody	Acoustically, the rhythm, pitch, and loudness of speech. For Interaction Media Streaming Server, you can adjust the speed and volume of speech that synthesizes from text.
QoS (Quality of Service)	A standard (RFC 2474, 2205, 2990, 3714) method of specifying prioritization for network communications. This standard is prevalent in the transmission of audio on IP-based networks.
RTCP (Real-time Transport Control Protocol)	A standard (RFC 3550) protocol for establishing, monitoring, and controlling communications that transmit media, such as audio and video, on IP-based networks through Real-time Transport Protocol (RTP).
RTP (Real-time Transport Protocol)	A standard (RFC 3550) protocol for delivering media, such as audio and video, on IP-based networks.
SAPI (Speech Application Programming Interface)	An application programming interface (API) developed by Microsoft for speech recognition and synthesis.
SIP (Session Initiation Protocol)	A standard (RFC 3261) protocol for establishing and controlling real-time communications over IP-based networks.
Streaming	The continuous transmission of media, such as audio, video, or both, over a network.
TCP (Transmission Control Protocol)	A standard (RFC 675, 793, 1122, 1323, 1379, 1948, 2018, 4614, 5681, 6298) protocol for transmitting data over an IP-based network. TCP focuses on the quality of network transmissions, such as network congestion, retransmission of dropped packets, and reordering of packets received out of the sequence in which they transmitted.
TLS (Transport Layer Security)	A standard (RFC 5246) method of encrypting communications for transmission on an IP-based network. This protocol is an application layer protocol, which other network layer protocols, such as SIP, TCP, and UDP, can use.

TTS (Text to Speech)	A computer-based method of synthesizing text from a file or data object into an audio representation of language as spoken by humans.
UDP (User Datagram Protocol)	A standard (RFC 768, 2460, 2675, 4113, 5405) protocol for transmitting data over an IP-based network. UDP focuses on the speed of network transmissions and does not address network congestion, packet receipt messages, or packet sequencing. For real-time, IP-based communications, small irregularities in UDP packet streams do not produce significant quality issues.

# Change Log

Date	Changes
28-February-2013	Initial release
01-March-2013	Removed content stating that Windows 7 (32-bit) operating system was supported
08-March-2013	Added a tip to "External Audio page" that specifies how to use audio from other sources, such as Internet audio streams and multimedia
06-August-2013	Removed references to an obsolete product
29-August-2014	<ul style="list-style-type: none"> <li>Updated documentation to reflect changes required in the transition from version 4.0 SU# to CIC 2015 R1, such as updates to product version numbers, system requirements, installation procedures, references to PureConnect Product Information site URLs, and copyright and trademark information</li> <li>Updated content for MRCP selection rules feature in Interaction Administrator</li> </ul>
09-April-2015	<ul style="list-style-type: none"> <li>Added a topic on Repair or Change installations and modification of the previously-configured tracing option</li> <li>Replaced references to a specific product with "CIC client"</li> </ul>
13-October-2015	<ul style="list-style-type: none"> <li>Updated cover page to reflect corporate branding</li> <li>Updated "Copyright and trademark information" page</li> <li>Minor edits</li> </ul>
21-September-2017	Rebranded to Genesys
27-February-2018	Updated requirements for McAfee 10.5
02-April-2018	<ul style="list-style-type: none"> <li>Added "Apply releases" topic to provide information about applying releases and patches.</li> <li>Replaced "MRCP Servers Configuration" graphic to show removal of the <b>Use MRCP for TTS</b> check box.</li> <li>Added note to "Define Interaction Media Streaming Server through Interaction Administrator" topic indicating that Genesys replaced the <b>Use MRCP for TTS</b> check box with the <b>Default TTS Provider</b> list box on the <b>Text To Speech</b> tab in the <b>System Configuration</b> dialog box in IA.</li> <li>Replaced "Servers Configuration - Media Streaming Server 1" graphic to show removal of the <b>Indefinite - Session stays live till BYE</b> option.</li> <li>Added note to "Define Interaction Media Streaming Server through Interaction Administrator" topic indicating that if you are using external audio sources, click the <b>Retrieve from Server</b> option to populate them.</li> <li>Replaced "Audio Playback1" graphic to show the addition of the <b>Configure Speech Recognition...</b> button.</li> <li>Added note to "Specify an external audio source for Queue Audio in a Group Transfer operation" topic indicating that a valid Workgroup or Station Group must exist in IA before you can select it in Interaction Attendant.</li> <li>Changed RTP - QOS <b>enabled</b> definition from a check box to a list box in the "Audio Page" topic.</li> <li>Changed glossary definition for <b>MRCP</b> to include "v2 - RFC 4463."</li> <li>Updated document format.</li> </ul>
04-June-2019	Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section...".
30-April-2020	Update or remove links to "my.inin.com" as appropriate.