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VoiceXML

Installation and Configuration Guide

Abstract

This document provides information on installing and configuring CIC VoiceXML features.

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

For copyright and trademark information, see https://help.genesys.com/cic/desktop/copyright_and_trademark_information.htm.

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Introduction to VoiceXML

VoiceXML, the Voice Extensible Markup Language, is an XML-based language used to create audio dialogs. These audio dialogs feature synthesized speech (TTS) or digitized audio (pre-recorded audio) to prompt the user, and they accept spoken words or DTMF key input. The VoiceXML application contains the logic that controls the flow of the dialog. It is what prompts the caller, accepts the caller's input, and determines the next step for the caller.

Now with Customer Interaction Center's VoiceXML feature support, you can use existing applications written in industry-standard VoiceXML and take advantage of speech recognition technology without application development costs.

The information in the *VoiceXML Installation and Configuration Guide* is for partners, planners, installers, administrators, developers, and others who plan to install and configure the CIC VoiceXML feature speech pack.

The guide does not include information on deploying VoiceXML applications. Because every VoiceXML application is unique, contact your VoiceXML application provider for specific installation and configuration instructions.

Other VoiceXML documentation

For more information about CIC VoiceXML, see the *VoiceXML Technical Reference*, which is available in the PureConnect Documentation Library at <http://help.genesys.com/cic>.

The following technical documentation provides more information for the CIC VoiceXML feature.

- [*PureConnect Installation and Configuration Guide*](#)

This document assists you in installing and configuring Customer Interaction Center.

- [*VoiceXML Technical Reference*](#)

This document describes VoiceXML handler tools, host servers, and interpreter servers.

- [*CIC VoiceXML Integration with Nuance Dialog Modules Version 5.2*](#)

This document describes updates required to allow Nuance Dialog Modules version 5.2 to work with the CIC VoiceXML Interpreter.

- [*CIC VoiceXML Integration with Nuance Dialog Modules Version 6.1*](#)

This document describes updates required to allow Nuance Dialog Modules version 6.1 to work with the CIC VoiceXML Interpreter.

You can access these documents from the PureConnect Documentation Library at: <http://help.genesys.com/cic>.

Plan for your installation

Security considerations

The following are important security issues for your VoiceXML server installation.

By its very nature, the VoiceXML interpreter interprets documents it fetches from a given URI through the HTTP internet protocol. The VoiceXML being interpreted can transition to a new document at an arbitrary URI or post data to an arbitrary URI. Depending on the system configuration, it might also be possible to transfer telephone calls to an arbitrary telephone number encoded in the interpreted VoiceXML document. Therefore, it is critical to take great care to ensure that only documents from trusted sources are fetched for interpretation. In most cases, this source is an internal Web server (VoiceXML document server). We recommend that unless explicitly required by the application, the corporate firewall be configured to prevent HTTP requests from the VoiceXML interpreter to an untrusted network (that is, the Internet). If there is a chance that VoiceXML interpreter will execute documents obtained from document servers over an untrusted network, we strongly recommend that HTTPS is used. HTTPS ensures that only documents from a trusted source can be executed.

Also note that the trust afforded to the document server must be carefully evaluated. For example, if the same Web server used to host a public web site generates VoiceXML documents for the VoiceXML interpreter, a compromise of the Web server could be used to supply arbitrary VoiceXML documents to the VoiceXML interpreter.

Hardware requirements

The following hardware requirements support the VoiceXML feature installation.

Hardware Requirement	Description
VoiceXML Host Server	The VoiceXML Host Server is installed on the CIC server. The hardware requirements for the CIC server are described in the <i>PureConnect Installation and Configuration Guide</i> .
VoiceXML Interpreter Server	<p>We recommend that the VoiceXML Interpreter be installed on a separate server. Having another server that hosts the VoiceXML Interpreter relieves the CIC server of added processing as well as providing scalability if more VoiceXML servers are required.</p> <p>Based on your VoiceXML application, estimate your resources to determine the number of VoiceXML Interpreter Servers that are required to run your application.</p> <p>The critical resources are CPU utilization and memory. This information might be available from your VoiceXML application provider.</p> <p>Note:</p> <p>CIC supports virtualization of the CIC environment. For the latest information, see the <i>CIC Virtualization Technical Reference</i> in the PureConnect Documentation Library at: http://help.genesys.com/cic.</p>
LAN resources	<p>There are no special LAN requirements for the VoiceXML Interpreter Server or the VoiceXML Host Server beyond the LAN requirements for CIC server. A high-speed connection is recommended between the VoiceXML Interpreter Server and the VoiceXML Host Server due to the nature of the media, such as audio and grammars, that is being transported. A faster connection ensures less of a delay when executing a VoiceXML dialog.</p> <p>Note:</p> <p>If a firewall exists between the VoiceXML Interpreter Server and the VoiceXML Host Server, open the Notifier port (5597) across the firewall.</p>

Software requirements

The following software requirements support the CIC VoiceXML feature installation.

Software Requirement	Description
IC Server	<p>CIC VoiceXML is installed in a Customer Interaction Center environment with Automatic Speech Recognition (ASR). CIC server installation information is available in the PureConnect Installation and Configuration Guide.</p> <p>The VoiceXML subsystem requires the following CIC subsystems:</p> <ul style="list-style-type: none"> • Notifier: VoiceXML server uses the Notifier to communicate to the VoiceXML Host server and to other subsystems on the CIC server. • Recognition: VoiceXML uses the recognition subsystem to do all recognition of voice and DTMF key inputs. • Text -to-Speech (TTS): VoiceXML uses the TTS subsystem for speech synthesis. • Telephony: VoiceXML uses the Telephony subsystem to perform all telephony features. • Tracing: VoiceXML uses the tracing subsystem for logging.
VoiceXML Host Server	<p>Software for the VoiceXML host server is installed on the CIC server. The software requirements for the CIC server are described in the “Pre-Installation Procedures” section of the PureConnect Installation and Configuration Guide.</p> <p>The VoiceXML Host Server is installed during CIC server installation.</p>
VoiceXML Interpreter Server	<p>Use the CIC installation ISO to install the CIC VoiceXML Interpreter Server software features on your VoiceXML Interpreter servers.</p>

Licenses

VoiceXML requires a separate license, I3_LICENSE_VoiceXML_SESSIONS, which you must activate on your CIC server. Also, if you are going to use voice recognition and not only DTMF, ensure that your CIC server is licensed for speech recognition.

To view your licenses, do the following steps:

1. Start Interaction Administrator.
2. From the **File** menu, click **License Management**.

The **Features** page lists your feature licenses.

Install the VoiceXML subsystem

For information about how to install the VoiceXML subsystem for Customer Interaction Center, see the following:

- [CIC server prerequisites](#)
- [VoiceXML subsystem installation](#)
- [VoiceXML Interpreter Server](#)

CIC server prerequisites

Verify the following prerequisites before installing the VoiceXML subsystem.

1. Ensure that the CIC Server is installed.
2. Ensure that the CIC server is licensed for VoiceXML:
 - a. Start Interaction Administrator
 - b. From the **File** menu, click **License Management**.
The **Features** page lists the value for I3_LICENSE_VoiceXML_SESSIONS.
3. If you are using voice recognition, and not only DTMF, ensure that the CIC server is licensed to do speech recognition:
 - a. Start Interaction Administrator
 - b. From the **File** menu, click **License Management**.
The Features page lists I3_FEATURE_SPEECH_RECOGNITION.
4. If you are using voice recognition, ensure that at least one ASR engine is activated:
 - a. Start Interaction Administrator
 - b. Under the **System Configuration** node, click **Recognition**.
 - c. Click the specific ASR engine container.
 - d. In the right-hand pane, click **Configuration**.
 - e. On the **General** page, ensure that the **Enabled** check box is enabled.
5. If you are using Text-to-Speech (TTS), make sure that the system has a valid TTS voice installed:
 - For SAPI TTS Engines:
 - See "Add voices and languages for SAPI" in [CIC Text to Speech Engines Technical Reference](#) in the PureConnect Documentation Library.
 - For MRCP TTS Engines:
 - MRCP voices are configured in Interaction Administrator in the MRCP **Servers** configuration dialog on the **Voices** page.
 - In the **Voice** drop-down list, ensure that a voice is selected.
 - For more information about configuring a Synthesizer Voice Name, see [MRCP Technical Reference](#) in the PureConnect Documentation Library at <http://help.genesys.com/cic>.
 - For Interaction Text to Speech (ITTS):
 - See "Configure TTS" in [CIC Text to Speech Engines Technical Reference](#) in the PureConnect Documentation Library.

VoiceXML subsystem installation

The installation of the CIC VoiceXML subsystem includes the following steps:

1. Ensure that the VoiceXML Host Server is installed during CIC installation. For more information, see the [PureConnect Installation and Configuration Guide](#).
2. Determine the number of VoiceXML Interpreter servers required.
3. [Complete the VoiceXML Interpreter server installations](#).
4. [Configure the VoiceXML Interpreter](#) server using the Web Configuration server.
5. Verify your installations.

VoiceXML Interpreter Server

See the following:

- [Install VoiceXML Interpreter Server](#)
- [Updates](#)

Install VoiceXML Interpreter Server

Note:

The VoiceXML Interpreter is not switchover aware. In a switchover environment, you must have a minimum of two VoiceXML Interpreters installed, with one pointing to each CIC server (minimum 4 for proper redundancy).

To install the VoiceXML Interpreter Server

1. If you have not done so already:
 - a. Download the CIC .iso file from the Product Information site at <https://my.inin.com/products/Pages/Downloads.aspx>.
 - b. Copy the .iso file to a file server (non-CIC server) with a high bandwidth connection to the server(s) on which you will run the CIC installation.
 - c. Mount the .iso file and share the contents to make them accessible to the server(s) on which you will run the CIC installation.
2. Navigate to the \Installs\Off-ServerComponents directory on the file server.
3. Copy the VoiceXML.msi file to the server on which you plan to run this install and execute it. The name of the file depends on the PureConnect version you are installing.
4. When the setup wizard starts and displays the first dialog box, click **Next**. The **Destination Folder** dialog box appears.
5. Click **Next**. The **Domain User Validation** dialog box appears.
6. Specify the **User** name, **Password**, and **Domain** of a user account with administrative privileges for this system, and then click **Next**. The **Web Configuration Server** dialog box appears.
7. Type values in the following boxes to configure the web configuration interface:
 - **Web Configuration Server Port**
 - **Administration Login Name**
 - **Administration Login Password**

Note:

The VoiceXML server web configuration interface is an HTTP server that only serves pages that are built into the VoiceXML server process. Ensure that the administrative password is secure, as an unauthorized user could render an XML server inoperable through the Web interface.

8. Click **Next**. The **Logging File Path** dialog box appears.
9. In the **Logging Files folder** box, provide the path where the server will store log files and then click **Next**. The **Ready to install IC Voice XML Interpreter Server for CIC** dialog box appears.
10. Click **Install**. When the installation process completes, the **Completed the IC VoiceXML Interpreter Server Setup** dialog box appears.
11. Click **Finish**.
12. Restart the computer for the CIC Voice XML Interpreter Server installation changes to take effect.

Updates

The VoiceXML Interpreter Server must be at the same release version or later as the release version of the CIC server with which it is associated.

Important!

You must update the VoiceXML Interpreter Server before you update the CIC server.

Interactive Update Client receives updates from the Interactive Update provider on the CIC server. Because the CIC VoiceXML Interpreter Server must be updated before the CIC server, Genesys recommends that you do not use Interactive Update to apply release updates automatically to the VoiceXML Interpreter Server.

For information on manually applying a release version after installing the CIC VoiceXML Interpreter Server, see the latest CIC release page: at <https://my.inin.com/products/cic/Pages/Latest-Release.aspx>.

Configure the VoiceXML Interpreter Server

You configure VoiceXML Interpreter Server through a web interface. You also use this web interface to specify the VoiceXML Host Server and Transfer Server credentials.

For more information, see the following:

- [Access web interface](#)
- [Manage the VoiceXML Interpreter Server](#)
- [Shut down the VoiceXML Interpreter Server](#)

Access web interface

When the server installation is complete, you can review or modify the VoiceXML Interpreter Server configuration using the web interface.

To view the VoiceXML Interpreter Server web interface

1. Ensure you restarted the VoiceXML Interpreter Server after installation.
2. Ensure that the Customer Interaction Center Server is running.
3. Using the **Services** console in **Administrative Tools** folder of Windows **Control Panel**, do the following to start the **VoiceXML Interpreter Server** service:
 - a. Click the Windows **Start** button.
 - b. In the box at the bottom of the menu, type **services.msc** and then press the **Enter** key. The **Services** dialog box appears.
 - c. In the **Services (Local)** pane, locate the **ININ VoiceXML Interpreter Server** service and select it.
 - d. Start the VoiceXML Interpreter Server service using one of the following methods:
 - Right-click the item and select **Start** from the resulting context menu.
 - Left-click the item and select the **Start the service** hyperlink to the left of the list.
 - Double-click the item, select the **Start** button in the resulting dialog box, and select the **OK** button.The VoiceXML Interpreter Server service starts.
4. Open a web browser.
5. Navigate to the following URL: `http://servername:port`
servername represents the name of the system hosting VoiceXML Interpreter Server.
port represents the network port number specified as the Web Configuration Server Port
The web browser displays the **Network Password** page.
6. On the **Network Password** page, type the user name and password that you specified during the installation of VoiceXML Interpreter Server.

Note:

If you forget the user name or password of the VoiceXML Interpreter Server Web Configuration interface, do the following on the VoiceXML Interpreter Server:

- a. Note the value in the registry key:
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Interactive Intelligence\VoiceXML\WebConfigLoginName.`
- b. Clear the value in the registry key:
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Interactive Intelligence\VoiceXML\WebConfigLoginPassword.`
Don't delete the registry entry; only clear its value.
- c. Log on to the interface with the user name from "webConfigLoginName" and no password.
- d. Reset the password to restore the security of the web interface.



Manage the VoiceXML Interpreter Server

In an environment with multiple VoiceXML Interpreter Servers, you can control which VoiceXML Interpreter Server accepts requests to initiate sessions from the VoiceXML Host Server.

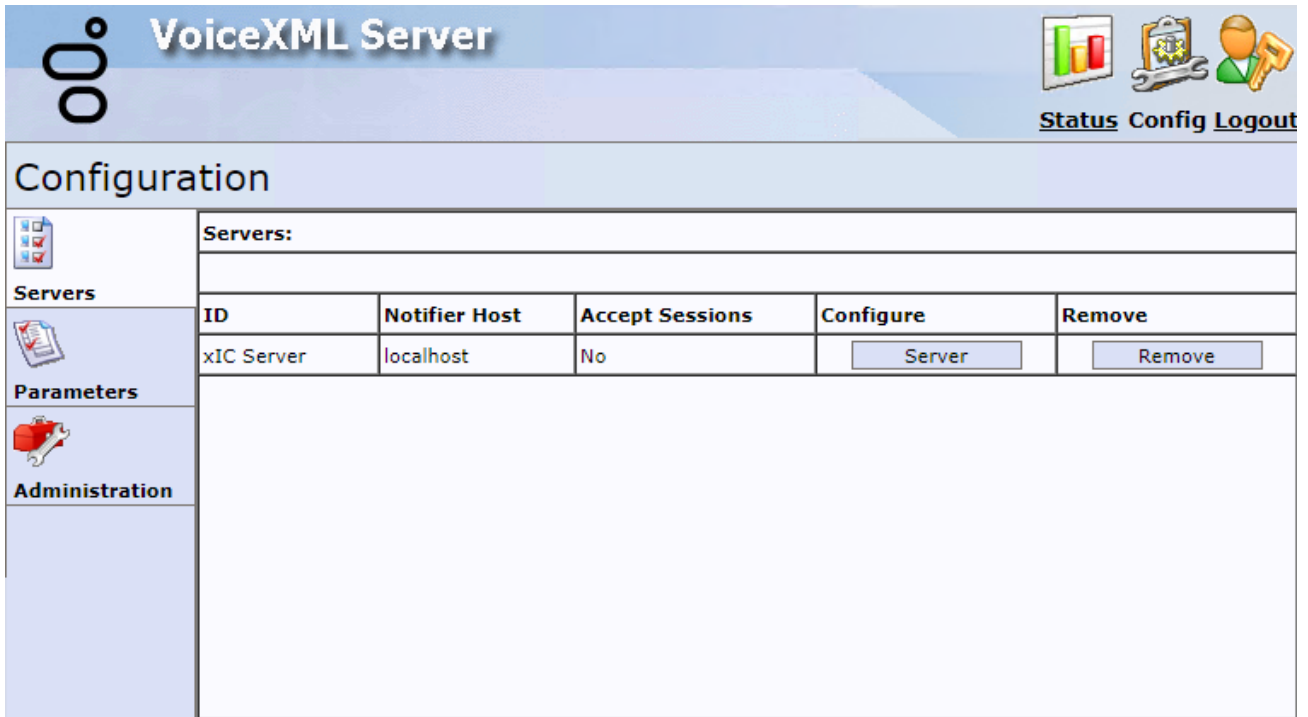
If you want to shut down a VoiceXML Interpreter Server without interrupting current VoiceXML sessions, you can configure a VoiceXML Interpreter Server to *not* accept new session requests from the VoiceXML Host Server. Then, safely shut down your server. To shut down the VoiceXML Interpreter Server, use the web interface to manage the VoiceXML Interpreter Server session requests.

Shut down the VoiceXML Interpreter Server

1. Access the VoiceXML Interpreter Server using the [Access web interface](#) procedure.
2. In the upper-right corner of the web page, click the **Config** icon.

Status	
 About	Machine Name EXAMPLE
	File Version
	Your IP Address
 Server Status	

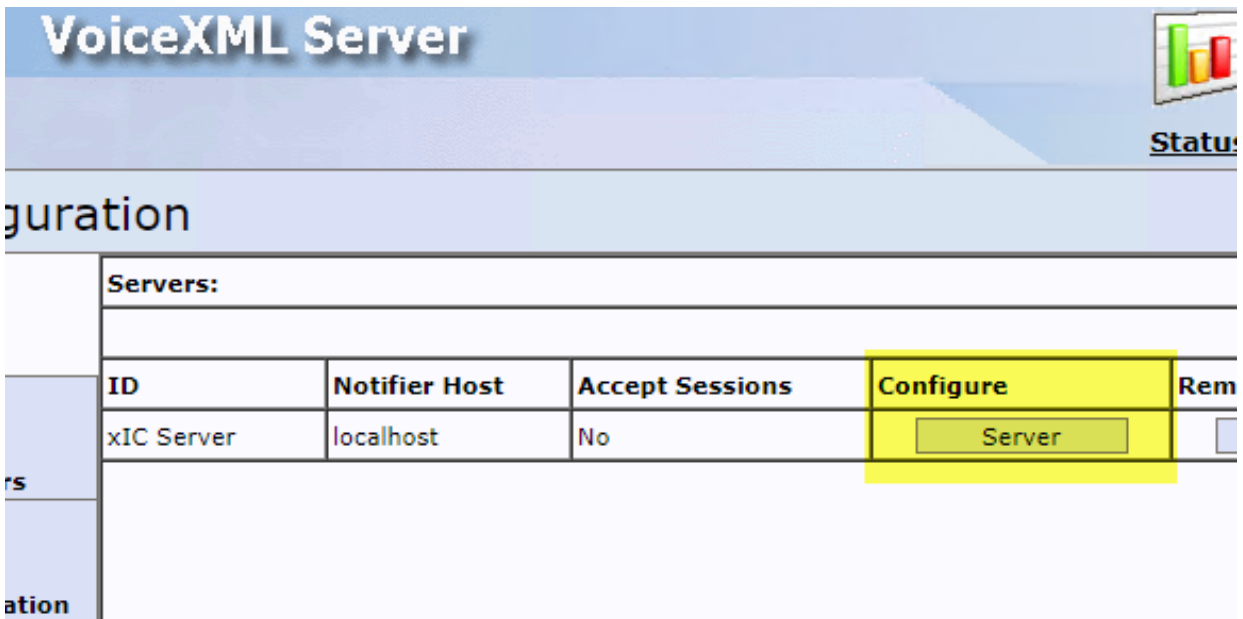
The **Configuration-Servers** page appears.



The screenshot shows the VoiceXML Server Configuration page. The header includes the VoiceXML Server logo and navigation links for Status, Config, and Logout. The main content area is titled 'Configuration' and features a sidebar with 'Servers', 'Parameters', and 'Administration' sections. The 'Servers' section contains a table with the following data:

Servers:				
ID	Notifier Host	Accept Sessions	Configure	Remove
xIC Server	localhost	No	Server	Remove

- On the **Configuration-Servers** page, find the server **ID** that you want to stop and select the associated **Server** button.



The screenshot shows the same VoiceXML Server Configuration page, but with the 'Server' button in the 'Configure' column highlighted in yellow. The table data is identical to the previous screenshot:

Servers:				
ID	Notifier Host	Accept Sessions	Configure	Rem
xIC Server	localhost	No	Server	

The **Configuration-Servers-Configuration** page appears.



Configuration



Configuration of Server xIC Server:

Servers



Parameters



Administration

Notifier Host	<input type="text" value="localhost"/>
Notifier User ID	<input type="text"/>
Notifier Password	<input type="text"/>
Accept Sessions	<input type="text" value="No"/>

Please Note:

- The host IC server must be running (required for certificate request)
- The user id and password are used for the subsystem certificate request; they are not stored
- Creating the subsystem certificate will take a couple of seconds; please be patient
- The voicexml server will have to be approved on the IC server before it is allowed to establish a regular connection to the IC server

4. From the **Accept Sessions** list, select **No**.
5. Click **Apply Changes**.
You are prompted for confirmation of the action.
6. Click **OK** to confirm the action.

When all of the current VoiceXML sessions have ended, you can safely shut down the Interpreter Server.

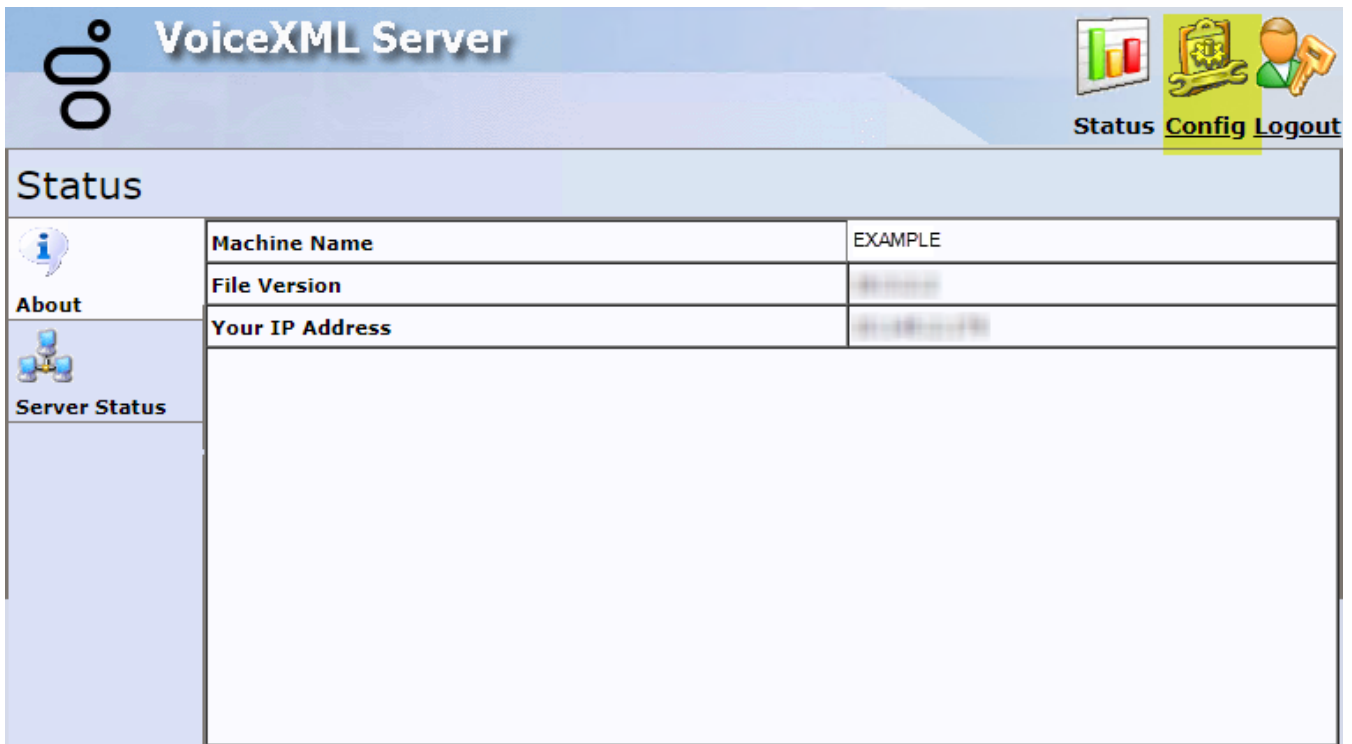
Interface reference

For information about pages in the interface, see the following:

- [Status-About page](#)
- [Status-Server Status page](#)
- [Configuration-Servers page](#)
- [Configuration -Servers-Configure page](#)
- [Configuration -Parameters page](#)
- [Configuration -Administration page](#)

Status-About page

Use the **Status-About** page to view information about this VoiceXML Interpreter Server.



The screenshot shows the VoiceXML Server interface. At the top, there is a header with the VoiceXML logo and the text "VoiceXML Server". To the right of the header are three navigation icons: a bar chart labeled "Status", a gear labeled "Config", and a person with a key labeled "Logout". The "Config" icon is highlighted in yellow.

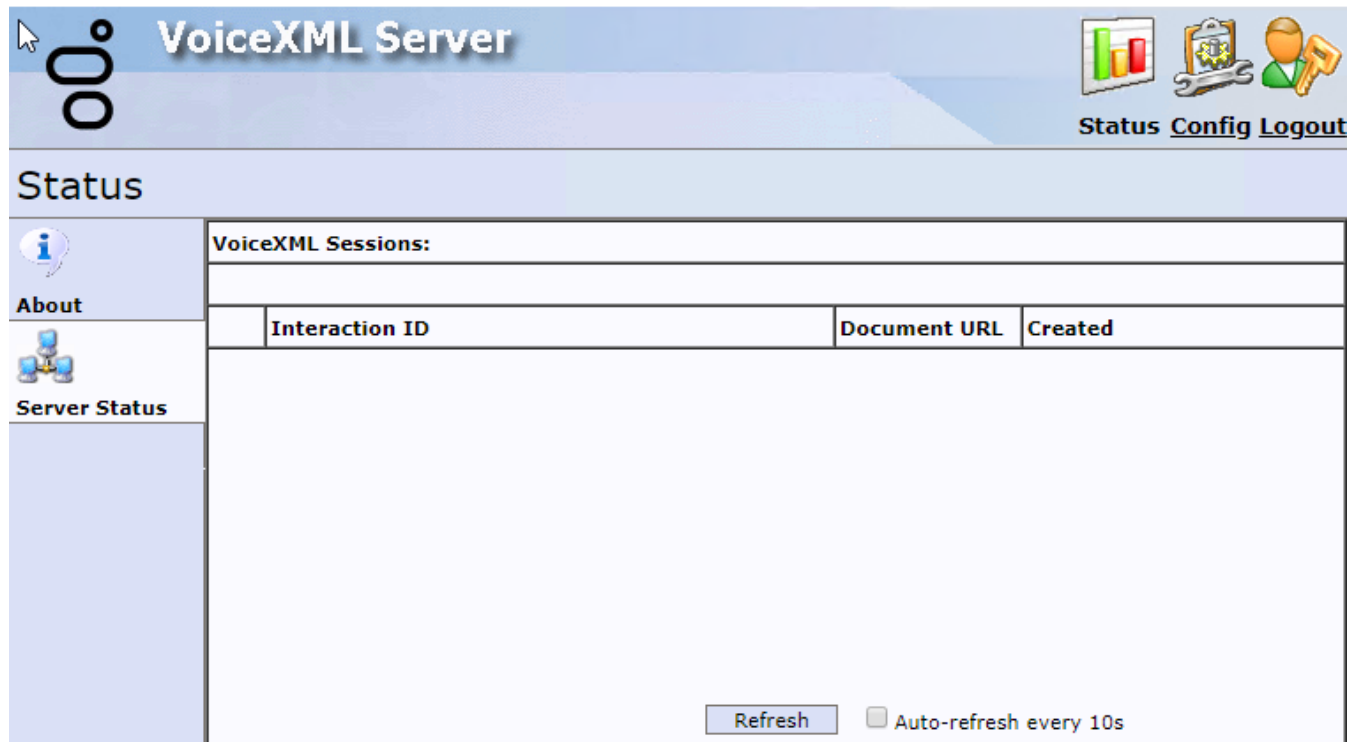
Below the header is a section titled "Status". On the left side of this section is a vertical navigation menu with three items: "About" (with an information icon), "Server Status" (with a server rack icon), and "Server Status" (with a server rack icon). The "About" item is selected.

The main content area of the "Status-About" page is a table with the following data:

Machine Name	EXAMPLE
File Version	EXAMPLE
Your IP Address	EXAMPLE

Status-Server Status page

Use the **Status-Server Status** page to view the current VoiceXML session that this server is processing.



VoiceXML Server

Status [Config](#) [Logout](#)

Status

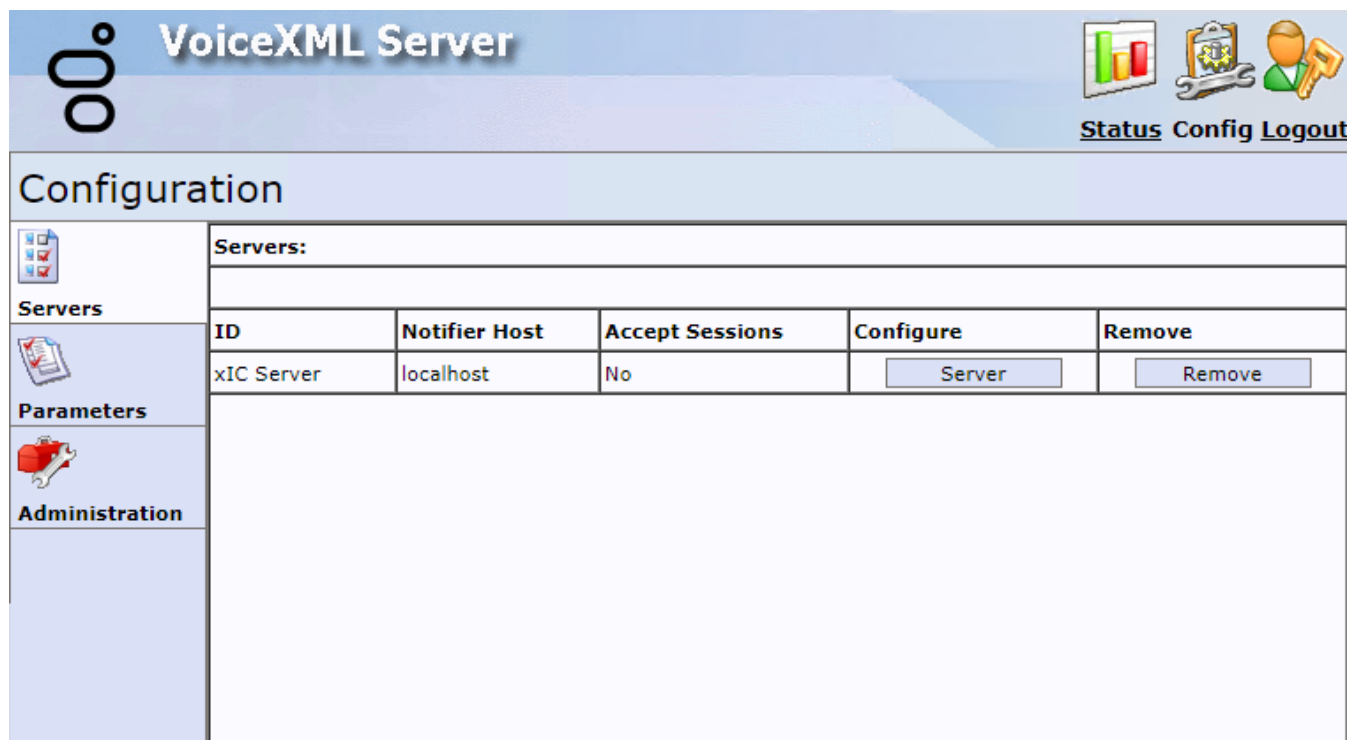
VoiceXML Sessions:

Interaction ID	Document URL	Created
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Auto-refresh every 10s

Configuration-Servers page

Use the **Configuration-Servers** page to view the defined connections to Customer Interaction Center servers and to access the settings for each connection.



VoiceXML Server

Status [Config](#) [Logout](#)

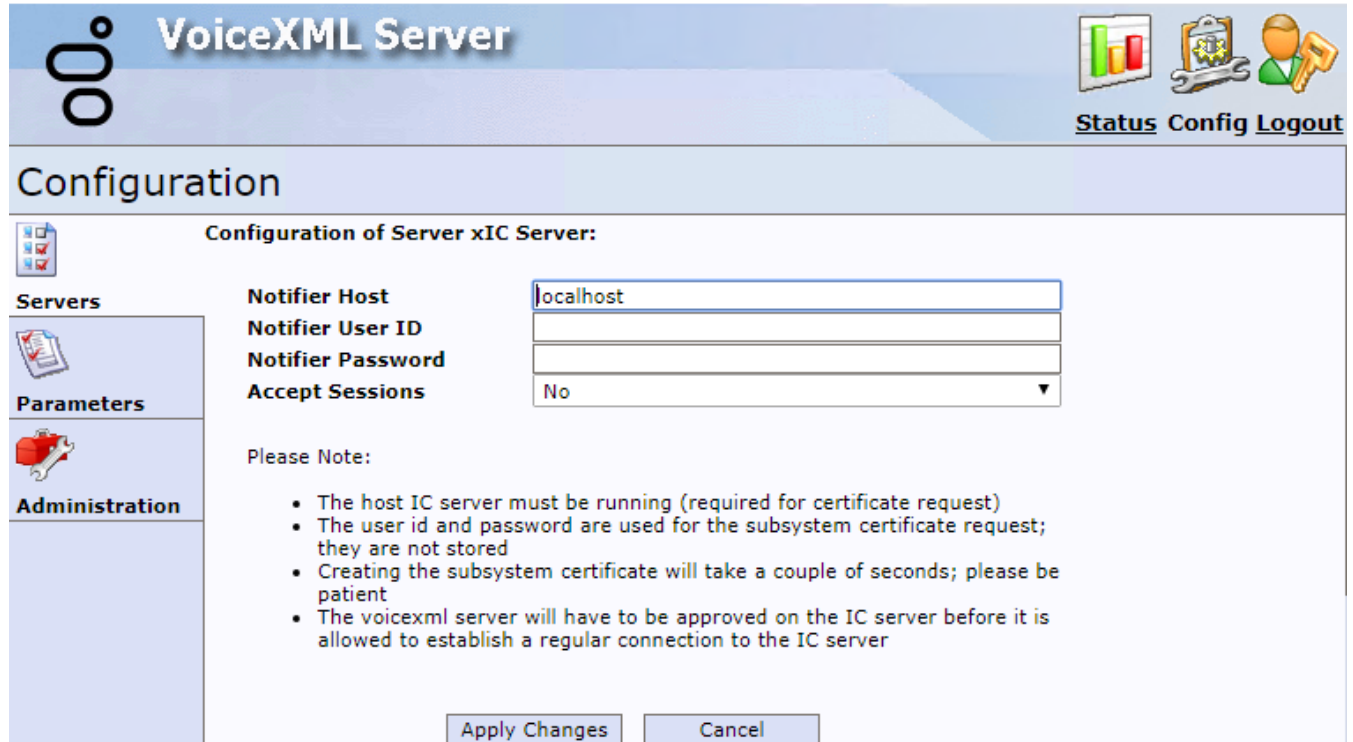
Configuration

Servers:

ID	Notifier Host	Accept Sessions	Configure	Remove
xIC Server	localhost	No	<input type="button" value="Server"/>	<input type="button" value="Remove"/>

Configuration-Servers-Configure page

Use the **Configuration-Servers-Configuration** page to set the user credentials for a connection to a Customer Interaction Center server and to stop VoiceXML Interpreter Server from accepting future VoiceXML requests.



The screenshot shows the 'VoiceXML Server' configuration interface. At the top, there is a header with the 'VoiceXML Server' logo and navigation links for 'Status', 'Config', and 'Logout'. Below the header, the main content area is titled 'Configuration' and contains the 'Configuration of Server xIC Server:' section. On the left, there is a sidebar with three menu items: 'Servers', 'Parameters', and 'Administration'. The 'Servers' menu is currently selected. The configuration form includes the following fields:

- Notifier Host:** localhost
- Notifier User ID:** (empty text box)
- Notifier Password:** (empty text box)
- Accept Sessions:** No (dropdown menu)

Below the form, there is a 'Please Note:' section with the following instructions:

- The host IC server must be running (required for certificate request)
- The user id and password are used for the subsystem certificate request; they are not stored
- Creating the subsystem certificate will take a couple of seconds; please be patient
- The voicexml server will have to be approved on the IC server before it is allowed to establish a regular connection to the IC server

At the bottom of the configuration area, there are two buttons: 'Apply Changes' and 'Cancel'.

Configuration -Parameters page

Use the **Configuration-Parameters** page to configure the functionality of VoiceXML Interpreter Server for your environment.


Name	Value
cacheCleanupInterval	30
cachepath	D:\I3\IC\Resources\VXIcache\
recMaxTimeSecs	600
recoValueSlotName	value
ttsMRCP	false
ttsSSML	true
vxiConfigFile	D:\I3\IC\Resources\VXMLconfig\I3runvxml.cfg

The following table describes the parameters shown in the Interpreter Server Parameters dialog.




Parameter	Description
cacheCleanupInterval	The number of seconds the VoiceXML Interpreter Server waits before deleting a locally cached VoiceXML resource. The default value is 30 seconds, with a minimum of 15 seconds and a maximum of 120 seconds.
cachepath	The directory the server uses to store cached VoiceXML resources.
recMaxTimeSecs	The maximum time, in seconds, for a recording.
recoValueSlotName	The element name to use for the value slot in returned NLSML recognition results. If not specified, the default name is value .
ttsMRCP	The default setting for this parameter is false . Setting this parameter to true notifies VoiceXML that the TTS engine supports the MRCP protocol. If MRCP is not supported by the TTS engine, set this parameter to false .
ttsSSML	The default setting for this parameter is false . Setting this parameter to true notifies VoiceXML that the TTS engine supports using SSML. If SSML is not supported by the TTS engine, set this parameter to false .
vxiConfigFile	The path to the VoiceXML library configuration file.

Configuration -Administration page


Use the Configuration-Administration page to change the password of the admin user and to create new administrator accounts.





VoiceXML Server

[Status](#) [Config](#) [Logout](#)

Configuration

**Servers**

**Parameters**

**Administration**

Change Login Credentials:

Old User Name

Old Password

New User Name

New Password

Confirm New Password

Important: This is not a secure (https) session. The credentials are thus sent to the server in plain text. We recommend you run the browser on the server machine to change the credentials.

Change log

The following table lists the changes to the *VoiceXML Installation and Configuration Guide* since its initial release. .

Date	Changes
31-January-2012	Updated Copyright and Trademarks for 2012
31-January-2012	Added information for validating an MRCP TTS Synthesizer Voice Name
25-February-2013	Updated Copyright and Trademarks for 2013
19-July-2013	<ul style="list-style-type: none">• Converted document to Installation & Configuration Guide• Edited styles to remove chapter headings
12-August-2013	Updated images to improve resolution
01-August-2014	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 Interactive Intelligence Product Information site URLs, and copyright and trademark information.
01-July-2015	<ul style="list-style-type: none">• Updated cover page to reflect new color scheme and logo.• Updated copyright and trademark information.• Updated product version numbers and screen shots for the 2015 R4 release.
22-September-2015	Updated documentation to reflect 2016 R1 Release
04-February-2016	<ul style="list-style-type: none">• Updated Copyright and Trademarks for 2016.• Updated the document to reflect the CIC 2016 R2 version.• Added a link to the CIC Documentation Library at Help.inin.com.
17-June-2016	<ul style="list-style-type: none">• Updated content to reflect introduction of Interaction Text to Speech• Edited content for style, formatting, and clarity
03-May-2018	Rebranded from Interactive Intelligence to Genesys.
14-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...".
25-June-2019	<ul style="list-style-type: none">• Added a note to Install VoiceXML Interpreter Server about VoiceXML Interpreter not being switchover aware in a switchover environment.• Added a note to Access web interface about how to reset the password for the VoiceXML Interpreter Server Web Configuration interface.