VoiceXML

Installation and Configuration Guide

Interactive Intelligence Customer Interaction Center® (CIC)

Version 2016 R4

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(See Change Log for summary of changes.)

Abstract

This document provides information on installing and configuring CIC VoiceXML features.
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# Table of contents

**About this guide** .................................................................................................................................................................................. 4
**Other VoiceXML documentation** ......................................................................................................................................................... 4
**Introduction** ......................................................................................................................................................................................... 5
**Plan for your installation** ........................................................................................................................................................................... 6
  - Security considerations ........................................................................................................................................................................... 6
  - Requirements .......................................................................................................................................................................................... 6
    - Hardware requirements .................................................................................................................................................................... 6
    - Software requirements ...................................................................................................................................................................... 7
  - Licenses .............................................................................................................................................................................................. 7
**Install the VoiceXML subsystem** .............................................................................................................................................................. 8
  - Prerequisites ....................................................................................................................................................................................... 8
    - CIC server prerequisites .............................................................................................................................................................. 8
  - Installation steps ................................................................................................................................................................................ 8
    - VoiceXML subsystem installation .................................................................................................................................................. 8
  - VoiceXML Interpreter Server .......................................................................................................................................................... 9
    - Install VoiceXML Interpreter Server ........................................................................................................................................... 9
    - Updates ............................................................................................................................................................................................ 12
**Configure the VoiceXML Interpreter Server** ........................................................................................................................................ 13
  - Access web interface ........................................................................................................................................................................ 13
  - Manage the VoiceXML Interpreter Server ....................................................................................................................................... 13
  - Shut down the VoiceXML Interpreter Server .................................................................................................................................. 13
**Interface reference** .................................................................................................................................................................................. 16
  - Status-About page ............................................................................................................................................................................. 16
  - Status-Server Status page .............................................................................................................................................................. 16
  - Configuration-Servers page ............................................................................................................................................................ 17
  - Configuration-Servers-Configure page ......................................................................................................................................... 18
  - Configuration-Parameters page .......................................................................................................................................................... 18
  - Configuration-Administration page ................................................................................................................................................... 20
**Change log** ............................................................................................................................................................................................ 21
About this guide

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

This 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 VoiceXML Technical Reference, which is available in the Documentation Library on your CIC server or at http://help.inin.com/cic.

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

- **IC 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.

- **IC 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.

- **IC 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 CIC Documentation Library at: http://help.inin.com/cic.
Introduction

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.
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.

Requirements

Hardware requirements
The following hardware requirements support the CIC VoiceXML feature installation.

<table>
<thead>
<tr>
<th>Hardware Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VoiceXML Host Server</td>
<td>The VoiceXML Host Server is installed on the CIC server. The hardware requirements for the CIC server are described in the IC Installation and Configuration Guide.</td>
</tr>
<tr>
<td>VoiceXML Interpreter Server</td>
<td>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. Based on your VoiceXML application, estimate your resources to determine the number of VoiceXML Interpreter Servers that are required to run your application. The critical resources are CPU utilization and memory. This information might be available from your VoiceXML application provider.</td>
</tr>
<tr>
<td>LAN resources</td>
<td>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</td>
</tr>
</tbody>
</table>
transported. A faster connection ensures less of a delay when executing a VoiceXML dialog.

Note:
If a firewall exists between the VoiceXML Interpreter Server and the VoiceXML Host Server, open the Notifier port (2633) across the firewall.

Software requirements
The following software requirements support the CIC VoiceXML feature installation.

<table>
<thead>
<tr>
<th>Software Requirement</th>
<th>Description</th>
</tr>
</thead>
</table>
| IC Server            | IC VoiceXML is installed in a Customer Interaction Center environment with Automatic Speech Recognition (ASR). CIC server installation information can be found in the IC Installation and Configuration Guide. The VoiceXML subsystem requires the following CIC subsystems:  
  - 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 | 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 IC Installation and Configuration Guide. The VoiceXML Host Server is installed during CIC server installation. |
| VoiceXML Interpreter Server | Use the CIC installation ISO to install the CIC VoiceXML Interpreter Server software features on your VoiceXML Interpreter Servers. |

Licenses
VoiceXML requires a separate feature 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

This section includes information to install the VoiceXML subsystem for Customer Interaction Center.

Prerequisites

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 Text to Speech Engines for IC Technical Reference in the CIC Documentation Library.
   - For MRCP TTS Engines:
     — MRCP servers 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 CIC Documentation Library at http://help.inin.com/cic.
   - For Interaction Text to Speech (ITTS):
     — See "Configure TTS" in Text to Speech Engines for IC Technical Reference in the CIC Documentation Library.

Installation steps

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.
2. Determine the number of VoiceXML Interpreter servers required.
3. Complete the VoiceXML Interpreter server installations.
5. Verify your installations.

The following sections describe these steps in detail.

**VoiceXML Interpreter Server**

**Install VoiceXML Interpreter Server**

To install the VoiceXML Interpreter Server:

1. If you have not done so already:
   b. Copy the .iso file to a file server (non-IC server) with a high bandwidth connection to the server(s) on which you will be running the CIC installation.
   c. Mount the .iso file and share the contents to make them accessible to the server(s) on which you will be running the CIC installation.
2. Navigate to the \Installs\Off-ServerComponents directory on the file server.
3. Copy the VoiceXMLv2_2016_R1.msi file to the server on which you plan to run this install and execute it.
4. When the setup wizard starts and displays the first dialog box, click **Next**.

![VoiceXML Interpreter Server installation dialog box]

The **Destination Folder** dialog box appears.
5. Click **Next**.
   
The **Domain User Validation** dialog box appears.

6. Enter the **User** name, **Password**, and **Domain** of a user account with administrative privileges for this system, and click **Next**.
   
The **Web Configuration Server** dialog box appears.
7. Enter 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.
10. Click **Next**.

   The **Ready to install IC Voice XML Interpreter Server for CIC** dialog box appears.

11. Click **Install**.

   Then the installation process completes, the **Completed the IC VoiceXML Interpreter Server Setup** dialog box appears.

12. Click **Finish**.

13. 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, Interactive Intelligence 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](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.

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 VoiceXML Interpreter server after installation.
2. Ensure that the Customer Interaction Center server is running.

   You can use the following steps to open and start the VoiceXML Interpreter Server service:
   a. Select the Windows Start button.
   b. In the box at the bottom of the menu, enter services.msc and press the Enter key.
      The Services dialog box appears.
   c. In the Services (Local) pane, locate the 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, enter the user name and password that you specified during the installation of VoiceXML Interpreter Server.

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

2. In the upper-right corner of the web page, select the **Config** icon.

The **Configuration-Servers** page appears.

3. On the **Configuration-Servers** page, find the server **ID** that you want to stop and select the associated **Server** button.
4. In the **Accept Sessions** list box, select **No**.

5. Select the **Apply Changes** button.
   
   You are prompted for confirmation of the action.

6. Select **OK** to confirm the action.

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

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

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

Configuration - Parameters page

Use the Configuration-Parameters page to configure the functionality of VoiceXML Interpreter Server for your environment.
The following table describes the parameters shown in the Interpreter Server Parameters dialog.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cachecleanupinterval</td>
<td>The number of seconds the Interpreter Server waits before deleting a locally cached VXML resource. The default value is 30 seconds, with a minimum of 15 seconds and a maximum of 120 seconds.</td>
</tr>
<tr>
<td>cachepath</td>
<td>The directory the server uses to store cached VXML resources.</td>
</tr>
<tr>
<td>recMaxTimeSecs</td>
<td>The maximum time, in seconds, for a recording</td>
</tr>
<tr>
<td>recoValueSlotName</td>
<td>The element name to use for the value slot in returned NLSML recognition results. If <em>None</em> is specified, the default name is <em>value</em>.</td>
</tr>
<tr>
<td>ttsMRCP</td>
<td>The default setting for this parameter is <em>false</em>. Setting this parameter to <em>true</em> notifies VoiceXML that the TTS engine supports the MRCP protocol. If MRCP is not supported by the TTS engine, set this parameter to <em>false</em>.</td>
</tr>
<tr>
<td>ttsSSML</td>
<td>The default setting for this parameter is <em>false</em>. Setting this parameter to <em>true</em> notifies VoiceXML that the TTS engine supports using SSML. If SSML is not supported by the TTS engine, set this parameter to <em>false</em>.</td>
</tr>
<tr>
<td>vxIConfigFile</td>
<td>The path to the VoiceXML library configuration file.</td>
</tr>
</tbody>
</table>
Configuration - Administration page

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

### 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 summarizes the changes made to this document.

<table>
<thead>
<tr>
<th>Date</th>
<th>Changes</th>
</tr>
</thead>
</table>
| June 17, 2016      | • Updated content to reflect introduction of Interaction Text to Speech  
                     • Edited content for style, formatting, and clarity                                                                                   |
| February 4, 2016   | • 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](http://Help.inin.com).                      |
| September 22, 2015 | Updated documentation to reflect 2016 R1 Release                                                                                         |
| July 1, 2015       | • 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.                                                      |
| August 1, 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. |
| August 12, 2013    | Updated images to improve resolution                                                                                                     |
| July 19, 2013      | • Converted document to Installation & Configuration Guide  
                     • Edited styles to remove chapter headings                                                                                           |
| February 25, 2013  | Updated Copyright and Trademarks for 2013                                                                                               |
| January 31, 2012   | Added information for validating an MRCP TTS Synthesizer Voice Name                                                                         |
| January 31, 2012   | Updated Copyright and Trademarks for 2012                                                                                               |