PureConnect®

2023 R2

Generated:

30-May-2023

Content last updated:

03-June-2020

See Change Log for summary of changes.

GENESYS™

ASR

Technical Reference

Abstract

This document provides information on setting up and configuring PureConnect's speech recognition solutions for use with third-party ASR engines.

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

Table of Contents

Introduction to Automated Speech Recognition

The *Automated Speech Recognition Technical Reference* is for partners, planners, installers, administrators, developers, and others who plan to install and configure a PureConnect speech recognition solution. It provides information for installing and configuring third-party Automated Speech Recognition (ASR) integration with CIC. Interaction Speech Recognition is a built-in feature of the PureConnect product suite and is an integrated component of Interaction Media Server. For more information about Interaction Speech Recognition, see the *Interaction Speech Recognition Technical Reference* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/isr_tr.pdf.

Genesys creates trusted speech recognition solutions using Genesys' own Interaction Speech Recognition solution or third-party Automated Speech Recognition (ASR) software. Integrating PureConnect technology with Interaction Speech Recognition or third-party ASR software offers major speech recognition benefits, including excellent accuracy, powerful standards-based features, optimized performance, and best caller experience.

Supported third-party ASR solutions

For the most current list of supported ASR engines, see *Software Requirements* at https://help.genesys.com/cic/mergedProjects/wh_tr/mergedProjects/wh_tr_installation_and_configuration/desktop/software_requirements.htm.

For the most current list of supported vendor speech recognition engines, see the Testlab site at https://testlab.genesys.com/index.aspx.

> **Important!**
> If you are running Nuance Recognizer 10, install the MRCP ASR Server controller instead of the Genesys Nuance Recognizer Server controller. The Genesys Nuance Recognizer Server controller supports Nuance Recognizer 9.0 only.

Automated Speech Recognition Overview

CIC uses vendor speech technology integrated into our speech solutions. For more information, see:

- ASR Product Architecture
- ASR Load Balancing
- ASR Grammars

ASR Product Architecture

The following diagrams show how CIC integrates with ASR technologies. Not all ASR solutions contain all these components.
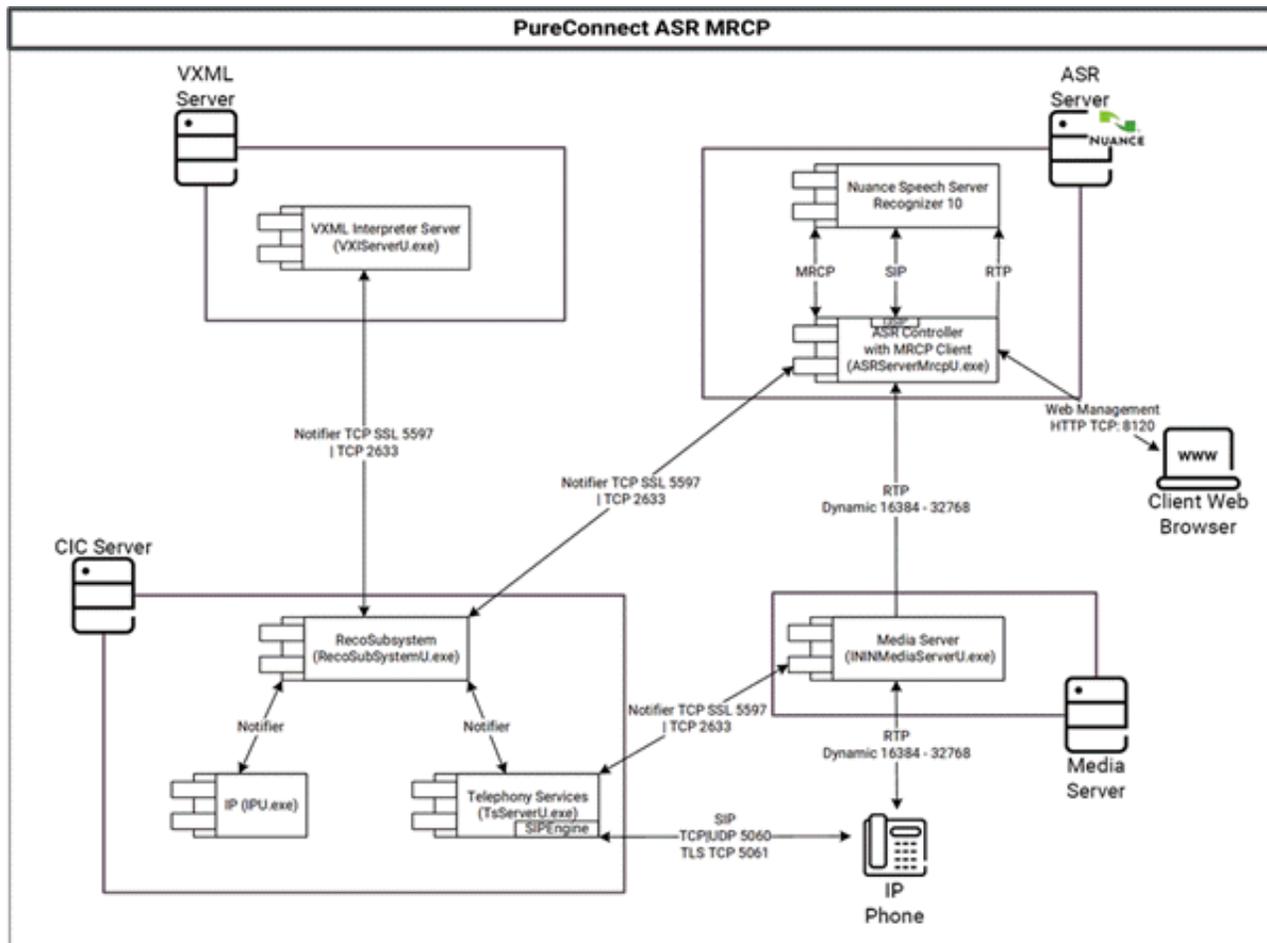
Following are the main components of CIC's speech recognition architecture.

Recognition subsystem

PureConnect's Recognition (Reco) subsystem is a CIC Notifier-based subsystem that manages the speech recognition integration and unified input processing. It provides a Notifier-based client API, which the handler tools or the VoiceXML Interpreter use to access the recognition services. For each supported ASR engine, Genesys provides an Engine Integration Module (EIM). You can load more than one EIM at once to support ASR engines from multiple vendors in the same installation. There is always exactly one instance of the Reco subsystem per CIC server.

Engine Integration Module

An Engine Integration Module (EIM) maps the engine-specific APIs to a common interface that the Reco subsystem uses to provide the ASR services to the clients. This system allows clients to request services from the Reco subsystem without having to consider which vendor speech recognition technology their organization installed.

ASR audio provider

Depending on the vendor speech recognition technology, Telephony Services (TS) requires an engine-specific audio provider component, which provides the audio stream to the ASR engine.

Load balancer

As speech recognition is computationally very demanding, the actual recognition engines distribute across a server farm, usually. A load balancer, or controller, distributes the requests for speech recognition services to these ASR servers. You can implement this component in the Engine Integration Module or the speech recognition technology vendor can supply it as a separate service.

ASR Server controller service

To simplify the management of large server farms, Genesys provides an ASR server controller Service. It runs as a service on each ASR server machine, and it acts as a bridge between the Engine Integration Module and the actual ASR engine.

Recognition tools in Interaction Designer

Interaction Designer uses recognition tools to expose the Reco subsystem's API to handler developers. Each of the recognition tools provides input into a specific step of the recognition process, such as starting a recognition session, registering grammars, getting recognition input, and releasing a session. For a description of each Reco tool, see the *Interaction Designer Help* at https://help.genesys.com/cic/mergedProjects/wh_id/desktop/hid_introduction.htm.

ASR Load Balancing

Speech recognition is computationally demanding and multiple ASR servers can connect to a single CIC server to handle the load. The Reco Subsystem is responsible for selecting which ASR server to use for a recognition session and load balancing the sessions across the available ASR servers.

There are multiple factors to consider before the system analyzes the load and uses it to choose an ASR server. When looking for an ASR server to process a request, the Reco Subsystem analyzes all the ASR servers and compiles a selection list of servers that are available and compatible with the requested recognition session parameters.

The order in which the Reco Subsystem evaluates the available ASR servers depends on how the engines appear in the Available Engines list on the **ASR Engines** tab of the **Recognition Configuration** dialog box in Interaction Administrator. The Reco Subsystem goes through all the servers connected for each vendor, a vendor at a time. The exception is if the session parameters include a specific vendor name. In that case, the Reco Subsystem only uses servers for the specified engine and ignores the order of the Available Engines list.
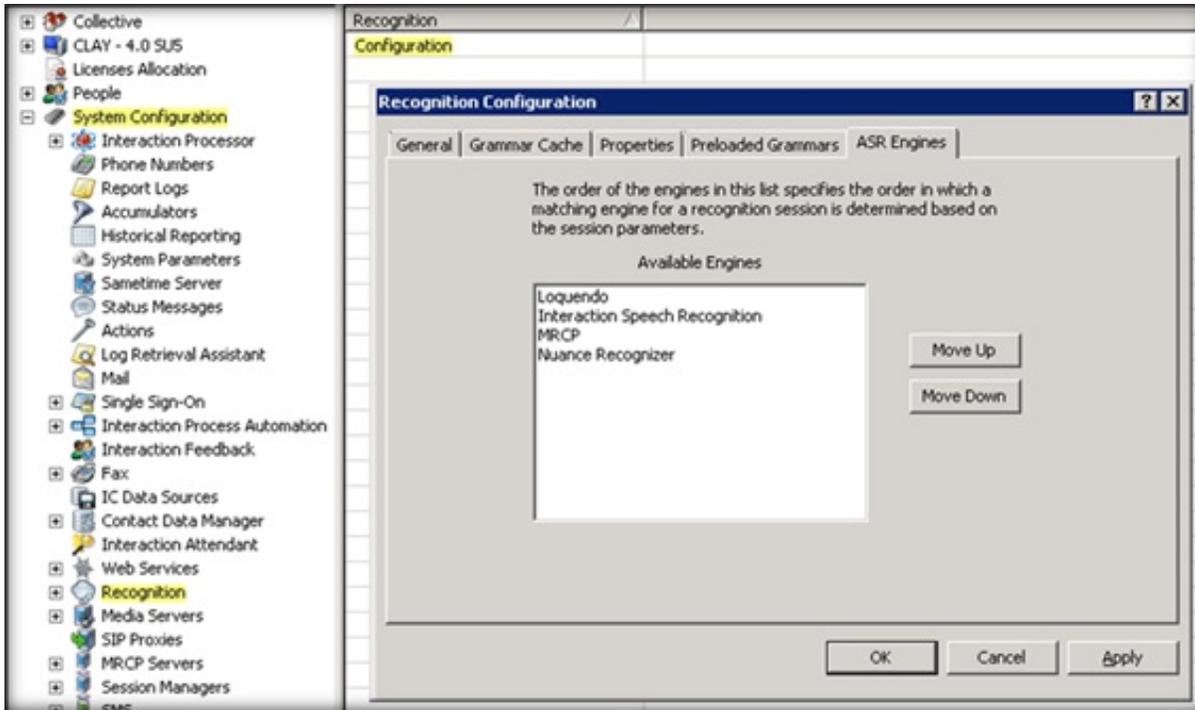
To appear in the selection list, an available ASR server must meet the following criteria:

- Connection Status is set to **Active**. For more information, see Open the Web Configuration Interface.
- Engine Integration Module is **Enabled**. For more information, see Configure the ASR Engine.
- **recocfg:ASRServerProxyEnabled** property is **not** set to **False**. For more information, see Configure a Command Server for Loquendo or Nuance.
- Accept Sessions is set to **Yes**. For more information, see Configure a Command Server for Loquendo or Nuance.

Once an ASR server is on the selection list, the Reco Subsystem sorts the list based on Location, Priority, and Load. More specifically:

- ASR servers in a more preferred region, according to the ASR Selection Rules, move to top of the list. (If an ASR server is in a location that the selection rules excluded, the Reco Subsystem removes the server from the list.)
- Of the ASR servers ranked the same in the list based on location, those servers with a lower priority setting, as specified in the **recocfg:ServerProxyPriority** property, move to the top of the list. For more information, see Configure a Command Server for Loquendo or Nuance.
- Of the ASR servers ranked the same in the list based on location and priority setting, those ASR servers with a lower Load, which is calculated by dividing the number of sessions the server currently has by its CPU capacity, move to the top of the list. (If an ASR server reaches its max session count as defined in the **recocfg:ASRMaxProxySessionCount** property, the Reco Subsystem removes it from the selection list.) For more information, see Configure a Command Server for Loquendo or Nuance.

After sorting the selection list, the Reco Subsystem starts at the top of the ASR servers list and finds the first ASR server that can accommodate the specified Language ID. The Reco Subsystem creates the Reco Session on that ASR server.

ASR Grammars

ASR Grammars

The Reco Subsystem supports Speech and DTMF grammars and each of these grammars are either built-in grammars or user-defined grammars. There are four types of grammars that the Reco Subsystem can handle: built-in Speech, built-in DTMF, user-defined Speech, and user-defined DTMF.

- Built-in grammars provide a way to accept commonly used input, such as confirmation, digits, extensions, times, dates, and monetary amounts.
- Developers create user-defined grammars and allow the system to handle custom input, such as product names or job titles.

Another distinction is that some grammars are parsed and other grammars are not. In this case, *parsing* is the process of analyzing the text in a grammar file. When grammars are parsed, you can use any supported grammar formats that the Reco Subsystem supports. For example, even though Nuance Recognizer only supports GRXML SRGS files, you can use ABNF SRGS files because the system parses the ABNF file and converts it into a GRXML format for the ASR server. If the grammar is not parsed, it passes to the ASR engine unchanged and allows use of proprietary features like binary grammars.

Some user-defined grammars do or don't require parsing, depending on the grammar specification under which you create them and the grammar specification that the ASR engine supports. Built-in grammars do not require parsing because they are URIs that always pass to the ASR engine as is. .

User-defined grammars

User-defined grammars can be files on the IC server, or HTTP/HTTPS references. If you use HTTP/HTTPS references for speech grammars, the URI passes to the ASR engine (for example, Media Servers for Interaction Speech Recognition or MRCP Servers like Nuance for MRCP), and the ASR server performs the HTTP fetch. Because the IC server always performs the DTMF recognitions, the IC server always fetches the user-defined DTMF grammars.

HTTPS DTMF grammars use the IC server's Windows trusted root to determine whether to trust HTTPS certificates. If needed, you can configure Windows to trust additional certificates.

Grammar management

The Reco Subsystem manages active grammars and allows multiple grammars to be active at the same time. For example, if three grammars are active when a caller asks to speak to someone, one grammar might accept a spoken extension, such as "1-4-5"; another grammar might accept a person's name, such as "Charlie Jones"; and another grammar could accept the word "help" or "operator."

Grammar caching system

To manage multiple grammars efficiently and ensure that the correct grammar is available, each speech recognition system, such as the Reco Subsystem (on the CIC Server) and the remote ASR servers, has its own grammar caching system.

When the system needs a grammar, it checks in the grammar cache first. If the grammar is there, the system uses it. If the grammar is not in the cache, the system loads it into the cache and then parses the grammar, if needed. While grammars are in the cache, the system can access them quickly and use them for future requests. However, the system removes grammars not used recently from the cache when new grammars need the space that the old grammars were using. Certain grammar caching parameters specify the exact caching behavior.

Another thing to consider when thinking about grammar caching and efficiency is parsing. As mentioned, some grammars need parsing, which the system does when adding them to cache. Parsing a grammar uses extra resources. So, parsing a grammar once and storing it in the grammar cache, where it's accessed in its parsed form, improves the performance of speech recognition operations. The system adds grammars that don't need parsing to the cache quicker.

> **Note:**
> You configure grammar caching for the Reco Subsystem using parameters specified in the Recognition container in Interaction Administrator. For more information, see Configure Recognition Settings. You configure grammar caching for remote ASR Servers using parameters specified on the **Parameters** tab in each server's Web Configuration page. For more information, see Configure a Command Server for Loquendo or Nuance.

Grammar cache cleanup

To maintain optimal performance and avoid excessive storage use, the system investigates the contents of the grammar cache regularly and cleans out the stored grammars no longer viable. The system uses the **Grammar Cache Cleanup Interval**

parameter setting to determine how frequently to clean out the cache. The settings for the **Min Grammar Idle Time** and the **Idle Grammar Count Baseline** parameters determine what to remove from the cache.

> **Note:**
> The default values for the Grammar Cache settings work fine under most circumstances. Any modifications to these values can have a significant impact on the behavior of the system. As such, only modify these settings under the direction of PureConnect Customer Care.

Cleanup logic

When determining what to remove from the grammar cache, the system uses the following logic:

- Never remove grammars currently in use.
- Never remove grammars that are idle for less than the setting for the Min Grammar Idle Time parameter.
- Sort remaining grammars by age (the amount of time since last used for a recognition).
- Check the value of the Idle Grammar Count Baseline, which is the minimum number of idle grammars always left in the cache.
- Remove from the cache any of the *oldest* grammars that fall outside the Baseline boundary.

As a result of the above logic to determine what to remove from the grammar cache, note that:

- If the total number of grammars in the cache is fewer than the value of the Idle Grammar Count Baseline, all grammars remain in the cache indefinitely.
- If many grammars are, or have recently been, in use, the number of grammars in the cache can exceed the Idle Grammar Count Baseline value.

Reco Subsystem cleanup logic

While the Reco Subsystem uses the settings specified in the Min Grammar Idle Time and the Idle Grammar Count Baseline parameters to determine what to remove from the cache, the cleanup logic does not always remove the oldest grammars first. These situations revolve around parsed and unparsed grammars.

When determining which grammars to remove from its cache, the Reco Subsystem weighs the age factor but also considers whether it had to parse the grammar. The system always removes the oldest parsed grammar before a younger parsed grammar, and it removes the oldest unparsed grammar before a younger unparsed grammar. However, among the oldest grammars, the system sometimes remove an unparsed grammar before an older parsed grammar.

Parsing a grammar takes up resources. So, keeping an older parsed grammar in the cache and instead, removing a younger unparsed grammar is a more efficient use of resources. Also, reloading a grammar that doesn't need parsing is a more efficient use of resources than reloading a grammar that needs reparsing before using it.

CIC Speech System Planning

Following are things to consider when planning your CIC speech system.

Your application environment

To plan for an ASR installation, review your application environment and determine the number of:

- ASR engines that you require and how many are active at any one time
- ASR engines per server
- ASR servers that you require

Your speech application provider can give you detailed information on the application's complexity. This information includes things such as grammar size and complexity, length of time engines are active during a call, languages supported, and barge-in support.

Estimate resources for ASR engines

Your speech recognition technology vendors can help you understand the resources required for their ASR engines. Two critical resources in an ASR installation are CPU power and memory.

Hardware requirements

There are no extra hardware requirements for the CIC Reco Subsystem.

Software requirements

The only specific software requirement is that ASR requires .NET Framework 3.5.1 or higher to use TraceViewer.

> **Note:**
> For more information about installing .NET Framework on a server or about the requirement, see the *PureConnect Installation and Configuration Guide* at
> https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

PureConnect Speech Services

PureConnect speech services have the following licensing prerequisites:

License	Description
I3_FEATURE_SPEECH_RECOGNITION	CIC server requires a Speech Recognition Services add-on license.
I3_SESSION_MEDIA_SERVER_RECO	Interaction Speech Recognition (added as of CIC 4.0 SU4) requires one or more concurrent session licenses.
I3_FEATURE_MRCP_ASR	MRCP ASR servers require a license.

> **Note:**
> I3_FEATURE_SPEECH_RECOGNITION and I3_FEATURE_MRCP_ASR as features only require the presence of a license; whereas, the quantity of I3_SESSION_MEDIA_SERVER_RECO licenses purchased determines the number of concurrent ASR sessions available.

To verify that you have the licenses installed, obtain and generate the CIC license file, and download it to the CIC server or other location, as described in the *PureConnect Installation and Configuration Guide* at
https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

Vendor Speech Technology Server License

The system requires a license, obtained from the vendor, to install the vendor speech technology on an ASR server.

PureConnect Speech Solution Installation

Following is a list of the high-level steps to install PureConnect's speech solution.

1. Determine the number of ASR servers required and install the vendor software on each ASR server.
2. Set up the ASR server to communicate with CIC server.
3. Ensure that you downloaded the Speech Recognition Services add-on license and that it's accessible to the machine where you install CIC server.
4. Install the CIC server and select your ASR server during installation.
5. Set up your ASR server for CIC.
6. Complete the configuration steps in Interaction Administrator.

Before you begin

Ensure that your installation environment is ready for your PureConnect platform installation, and that you completed the licensing requirements described in CIC Speech System Planning.

1. **Install vendor software**. Following vendor instructions, install your vendor speech recognition software (ASR engine) on your ASR servers.
2. **Do one of the following:**

> **Important!**
> If you are running Nuance Recognizer 10, install the MRCP ASR Server controller instead of the Genesys Nuance Recognizer Server controller. The Genesys Nuance Recognizer Server controller supports Nuance Recognizer 9.0 only.

   - **Install the ASR server controller**. To communicate with a CIC server, install the ASR server controller on the ASR server. The CIC installation ISO includes the **Loquendo ASR** and **Nuance Recognizer** server controller installation programs.
   - **Install the MRCP ASR server controller**. Genesys recommends installing the MRCP ASR server controller on the same machine as the third-party MRCP server. The MRCP server can then use direct file access to obtain the grammar files and requires no HTTP grammar server. The CIC installation ISO includes the MRCP ASR server controller installation program.

> **Note:**
> By default, the QoS driver installs silently and the install adds the certificate to the Trusted Publishers list. If your site has reasons to modify this default behavior, see the Knowledge Base article *Modify Properties for the QoS Driver Installation* at https://genesyspartner.force.com/customercare/pkb_Home?id=kA50B0000008R5HSAU&l=en_US&fs=Search&pn=1. Follow the instructions provided to modify the QoS properties and run the install using Group Policy or other methods.

3. **Apply releases**. ASR server controllers must be at the same release version or later as the release version of the CIC servers to which they associate. Also, you must update the ASR server **before** the CIC server.

   Interactive Update Client receives updates from the Interactive Update Provider on the CIC server. Because you must update the ASR server before the CIC server, we recommend that you do **not** use Interactive Update to apply release update automatically to the ASR server.

   To apply a release version after installing this ASR server controller, see the **Latest CIC Release** page at: https://my.inin.com/products/cic/Pages/Latest-Release.aspx.

Install the MRCP ASR Server Controller

If you installed the MRCP ASR Engine software, install the MRCP ASR Server controller on the ASR server with the MRCP Engine software.
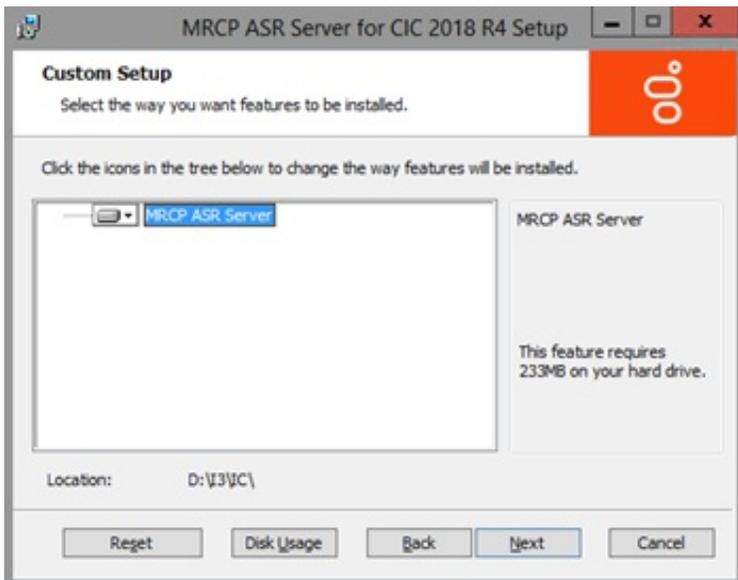
To install the MRCP ASR Server controller

1. Do the following:
   a. Download the CIC 2018 R4 or later `.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 servers on which you plan to run the CIC 2018 R4 or later installs.
   c. Mount the `.iso` file and share the contents to make them accessible to the servers on which you plan to run the CIC 2018 R4 or later installs.
2. Navigate to the `\Installs\Off-ServerComponents` directory on the file server.

3. Copy the `MrcpASRServer_2018_R4.msi` file to the server on which you plan to run this install and double-click to start it. The **Welcome** page in the MRCP ASR Server Setup wizard appears.
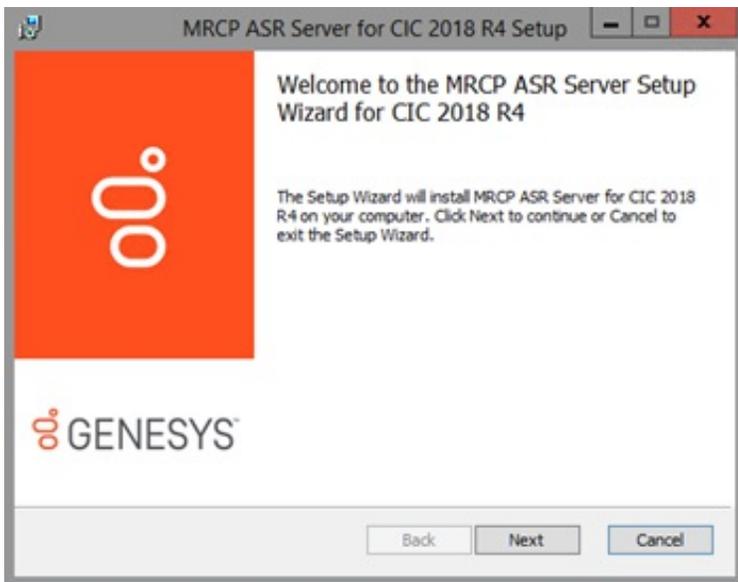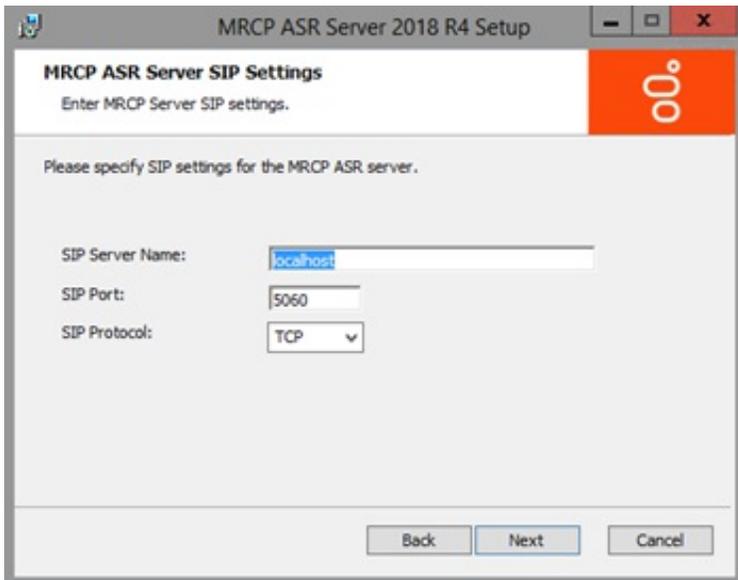

4. Click **Next**. The **Custom Setup** page appears.

5. Select the components to install or install the complete package and then click **Next**. The **Domain User Validation** page appears.
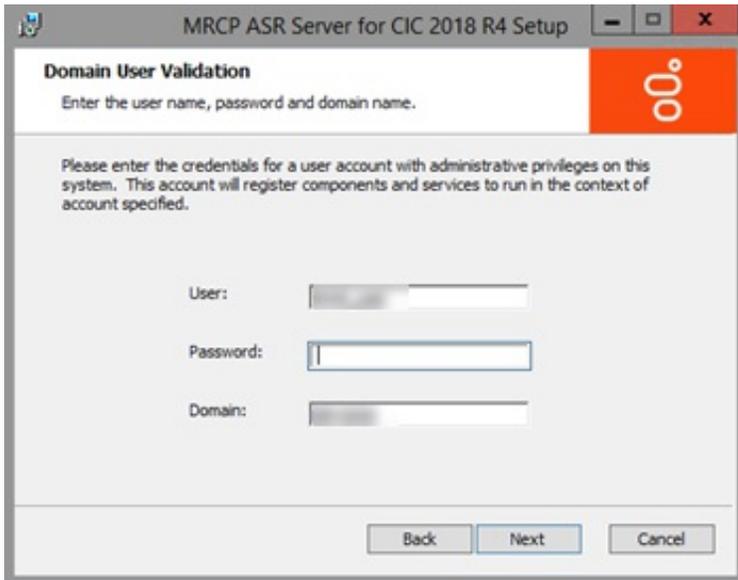
6. Type your Windows logon credentials and the domain name, and then click **Next**. The **MRCP ASR Server SIP Settings** page appears.


SIP Server Name: SIP server on which to install this software (which is the same machine as the MRCP server). Keep the default value of **localhost**.

SIP Port: SIP port number on which you configured the third-party MRCP server to listen for SIP requests.

SIP Protocol: SIP protocol to use to establish sessions with the MRCP server.

7. Complete the information and then click **Next**. The **Web Configuration Server** page appears.
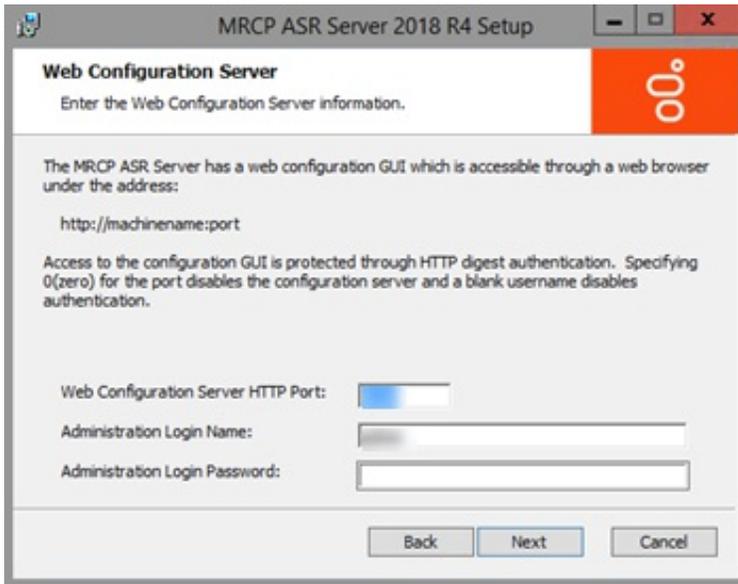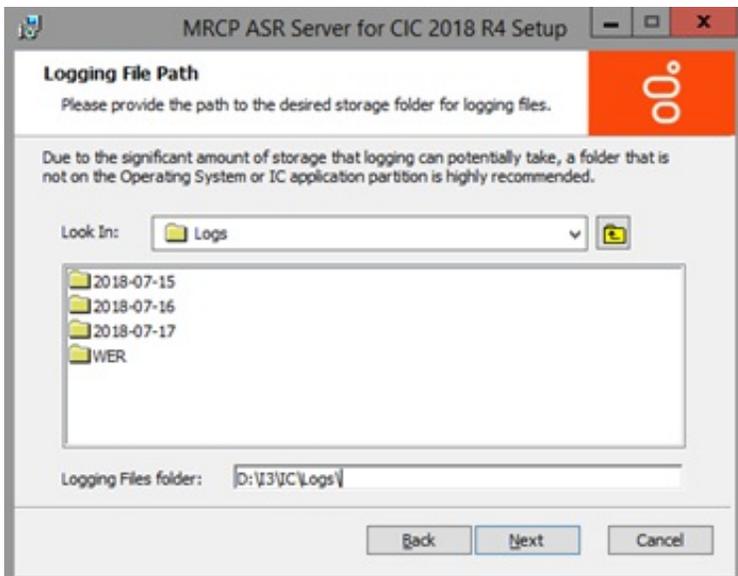
8. Type the Web Configuration Server HTTP Port and administrator credentials.

> **Note:**
> Ensure that the administration password is secure, as an unauthorized user could render an ASR server inoperable through the web interface.

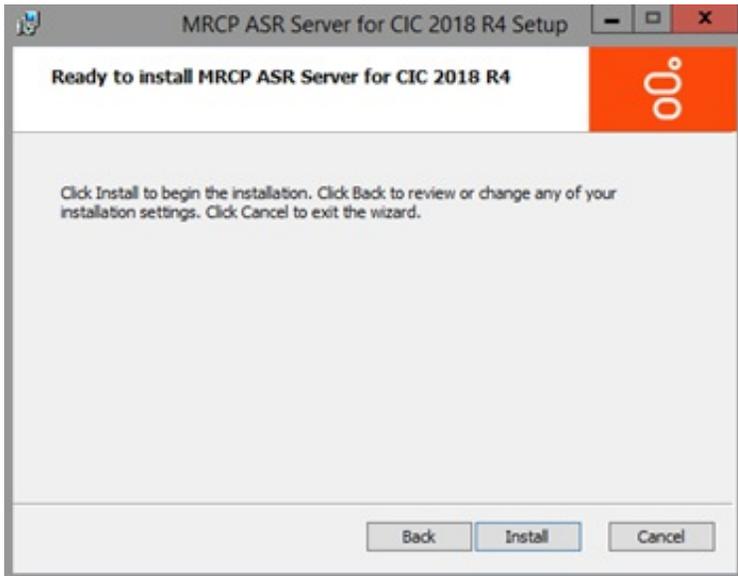9. Click **Next**. The **Logging File Path** page appears.

10. Specify the path to the folder where you store the logging files.

> **Note:**
> Because logging files can become large and take up valuable system resources, we recommend that you choose a folder that is not on the Windows system or CIC application partitions.

11. Click **Next**. The **Ready to install MRCP ASR Server** page appears.

12. Click **Install**. The installation procedure takes a few minutes to complete. When finished, the **Completed the MRCP ASR Server Setup Wizard** page appears.
13. Click **Finish**.

> **Note:**
> ASR server controllers must be at the same Release version or later as the Release version of the CIC servers they associate to, and you must update the ASR server *before* the CIC server. To apply a Release version after installing this ASR server controller, see the Latest CIC Release page at https://my.inin.com/products/cic/Pages/Latest-Release.aspx.

## Verify the Speech Recognition Services Add-on License

ASR requires the Speech Recognition Services add-on license: `I3_FEATURE_SPEECH_RECOGNITION`. To verify that you installed this license, obtain and generate the CIC license file and download it to the CIC server, or other location. For more information, see the *PureConnect Installation and Configuration Guide* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

MRCP ASR requires the CIC server license to include the I3_FEATURE_MRCP_ASR feature.

CIC Server Installation and CIC Setup Assistant

For complete installation information, see the *PureConnect Installation and Configuration Guide* at
https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/Installation_Configuration_Guide.pdf.

1. Ensure that you updated your ASR server controller to the same Release version as the CIC server.
2. Run CIC Setup Assistant. It detects that the license includes Speech Recognition and displays the **Speech Recognition** dialog box.
3. Select the ASR engine to use for speech recognition.
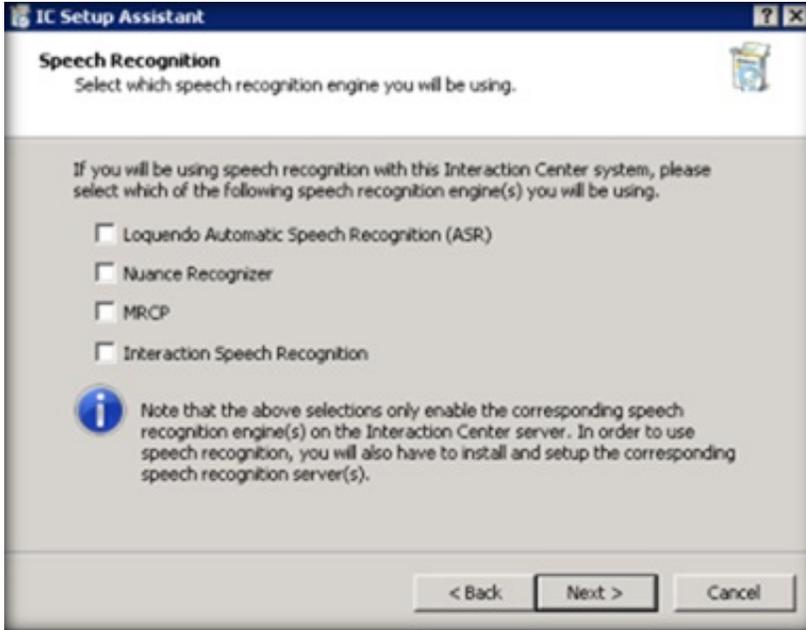
> **Note:**
>
> The **CIC Setup Assistant Wizard** guides you through the installation.

4. When the installation is complete, you can continue to configure speech recognition in Interaction Administrator.
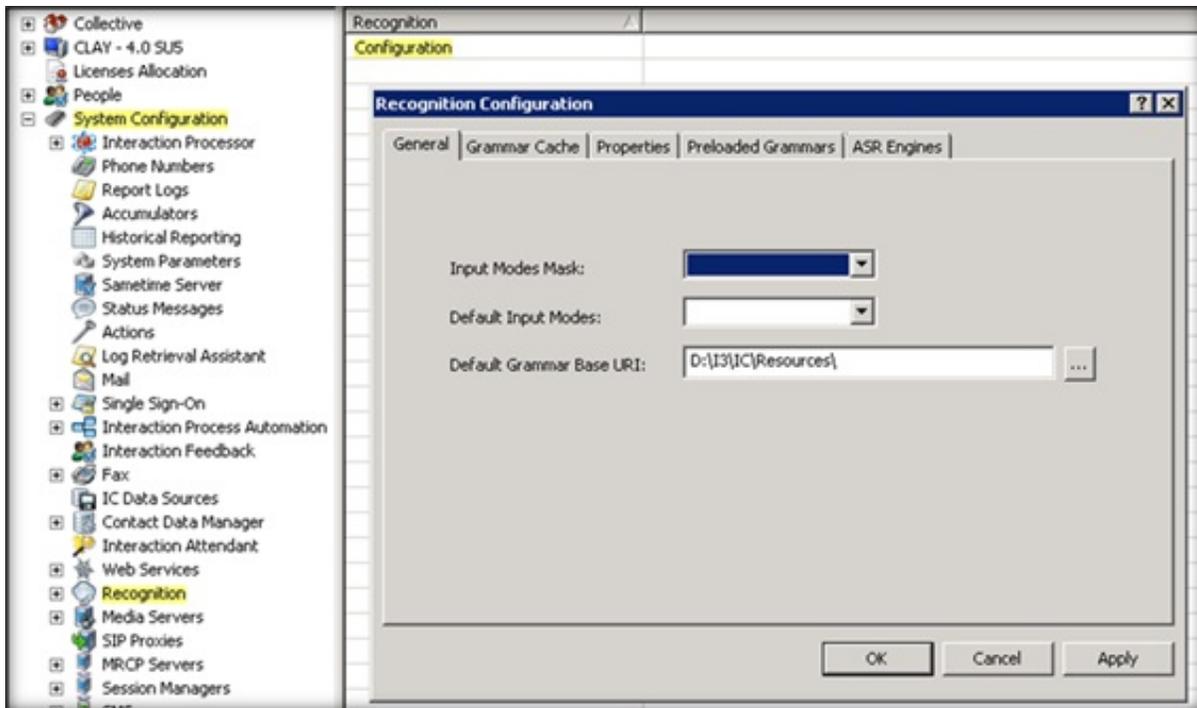
ASR Configuration

Configure Recognition Settings

After installing speech recognition, configure Recognition parameters and properties using Interaction Administrator.

To configure recognition settings

1. On the CIC server, open Interaction Administrator.
2. In the left pane of the Interaction Administrator window, expand the **System Configuration** container.
3. Click the **Recognition** container.
4. In the right pane, under the Recognition column, double-click **Configuration**. The **Recognition Configuration** dialog box appears.

5. Use the settings on the available tabs to configure the ASR server's behavior.
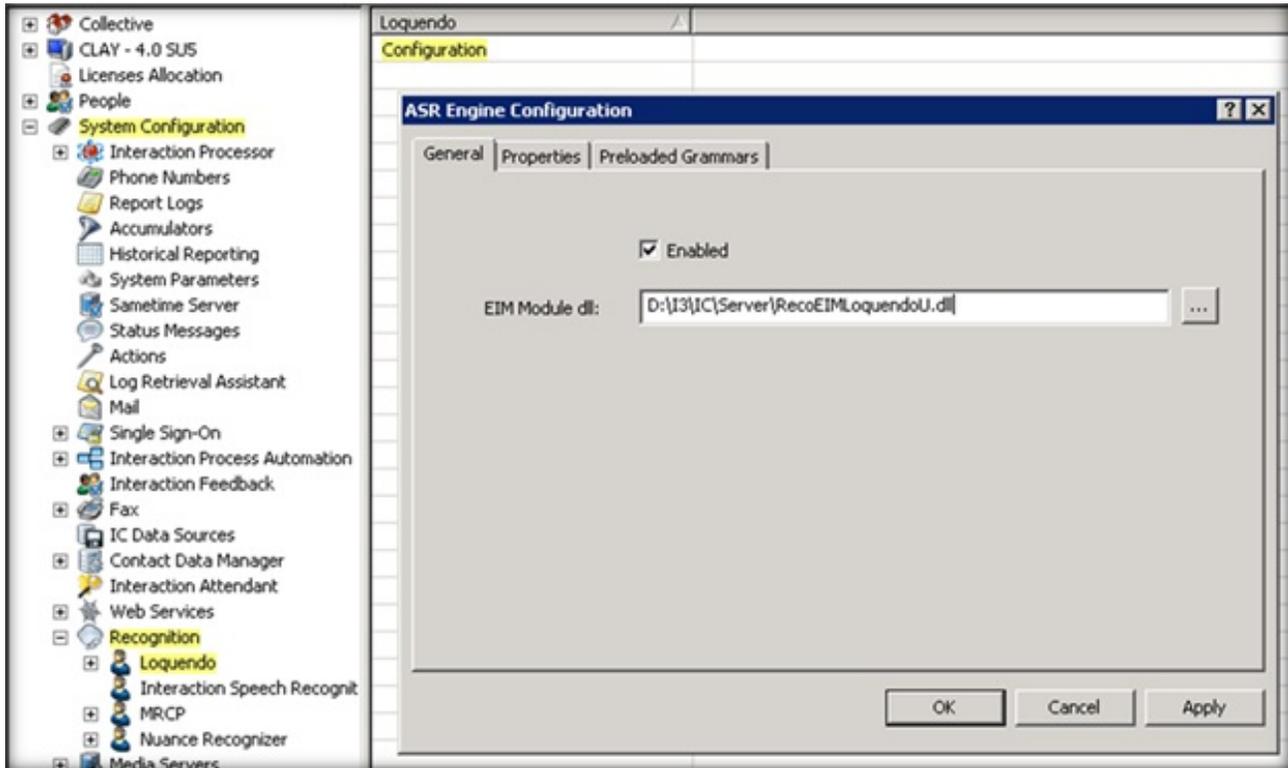
   For more information about the settings in the **Recognition Configuration** dialog box, click "**?**" in the title bar.

Configure the ASR Engine

For each supported ASR engine, Customer Interaction Center provides an Engine Integration Module (EIM). Use the **ASR Engine Configuration** dialog to enable the EIM and configure the ASR engine.

To configure the ASR engine

1. On the CIC server, open Interaction Administrator.
2. In the left pane of the Interaction Administrator window, expand the **System Configuration** container.
3. Expand the **Recognition** container.
4. Click the ASR server container, such as **Loquendo**.
5. In the right pane, double-click **Configuration**. The **ASR Engine Configuration** dialog box appears.

6. Select the **Enabled** check box.
7. Click the other tabs to configure more ASR engine settings.

    For more information about the settings in the **ASR Engine Configuration** dialog box, click "**?**" in the title bar.

Assign an ASR Server to a Location

If you have ASR servers in multiple regions, you can assign your ASR servers to locations to ensure the best recognition accuracy, speed, and efficient use of the available WAN bandwidth.

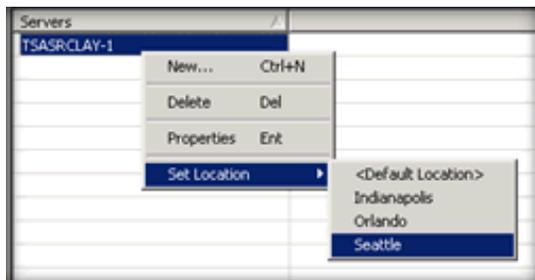**To assign an ASR server to a location**

1. On the CIC server, open Interaction Administrator.
2. In the left pane of the Interaction Administrator window, expand the **System Configuration** container.
3. Expand the **Recognition** container.
4. Expand the ASR server container, such as **Nuance Recognizer**.
5. Click the **Servers** container to display your ASR server name in the right pane.
6. Double-click your ASR server name. The **ASR Server Configuration** dialog box appears.
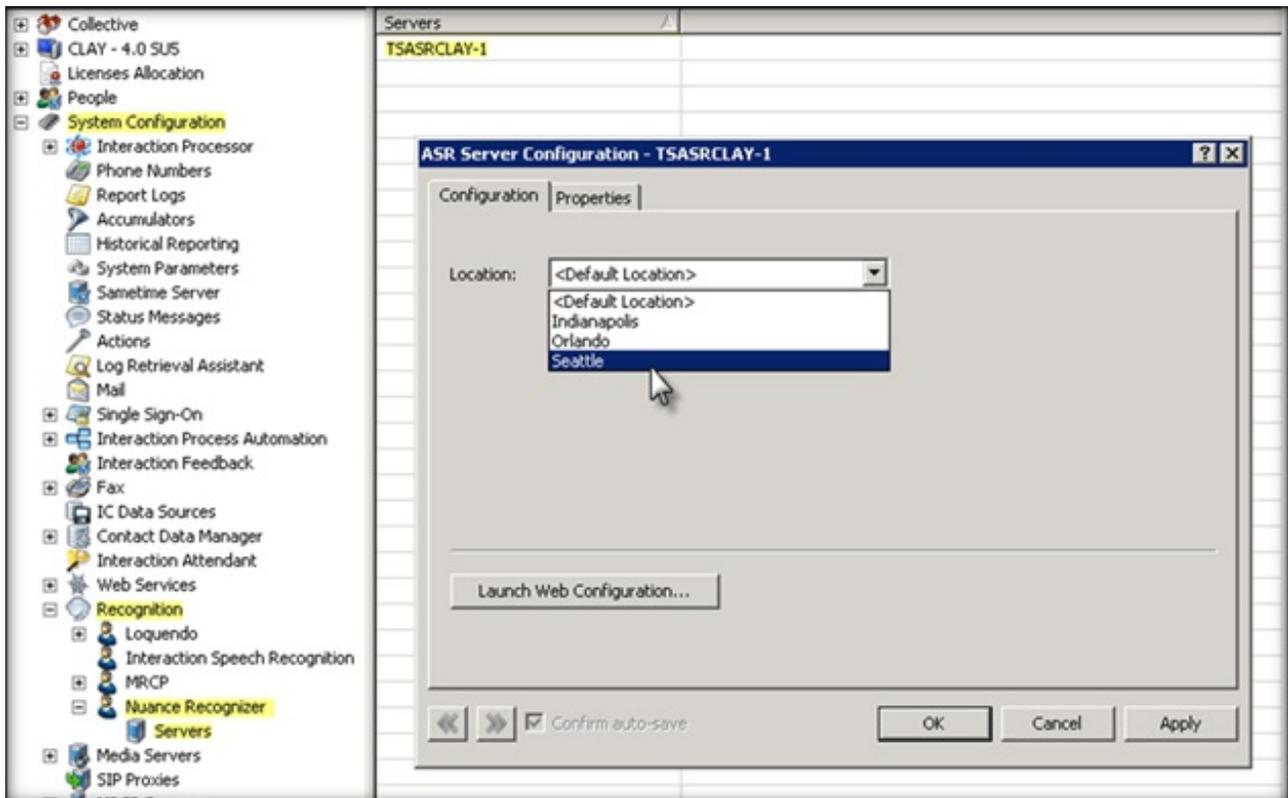
7. In the **Location** list box, click the location to assign to your ASR server.

> **Tip:**
> You can assign ASR servers to a location using the server's shortcut menu.
>
>

For information about creating locations, click "**?**" in the title bar.

ASR Selection Rules

When you assign an ASR server to a location, you specify where the server resides so that the system applies the selection rules correctly. Often, the default ASR selection rules work just fine. However, you can assign custom ASR selection rules to a location.

It's important to understand that the goal behind ASR regionalization, using locations and selection rules, is to ensure that the speech recognition functions that the ASR server provides occur in the most efficient manner possible. This system allows geographically dispersed networks to provide the best recognition accuracy and speed and ensure the most efficient use of the available WAN bandwidth between the echo canceled audio that the Media Server and the ASR server provide.

It is also important to understand that the system applies the Media Server Selection Rules first and runs them independently, regardless of ASR server availability.

For more information about Media Server locations and selection rules, see the *Interaction Media Server Technical Reference* at https://help.genesys.com/cic/mergedProjects/wh_tr/desktop/pdfs/media_server_tr.pdf.

For more information about selection rules, see the following:

- Default ASR Selection Rules
- Custom ASR Selection Rules
- Assign an ASR Selection Rule to a Location

Default ASR Selection Rules

When you create a location in Interaction Administrator, CIC assigns the Default ASR Selection Rules to that location automatically. This default configuration specifies a logical order of locations that provide the best possible connection to an available ASR server. The default selection rules specify that CIC searches for and selects an available ASR server using the following order:

<ThisLocation>	The location where echo cancellation occurs.
<ICServerLocation>	The location that has the CIC server that controls the interaction.
<Any>	This option directs Customer Interaction Center to search any defined location in the network if it cannot find an available ASR server at the above locations.

Scenarios

To see why the Default ASR Selection Rules work fine most times, let's assume the following setup. We'll also assume that the Interaction Media Servers are set to use the Default Media Server Selection Rules.

Seattle	Indianapolis	Orlando
Gateway	Gateway	Gateway
Interaction Media Server	CIC Server	Interaction Media Server
ASR Server	Interaction Media Server	ASR Server
	ASR Server	

Now, let's suppose that a call comes into Orlando. When it does, the steps in one of the following scenarios can occur:

Scenario 1

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is available in Orlando, the system uses it to provide echo cancellation.
- The Default ASR Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an ASR server is available in Orlando, the system uses it.

Analysis: This scenario represents the best case scenario because the audio remains in Orlando where it receives the best recognition accuracy and speed. The Default ASR Selection Rule tries to use this scenario when possible.

Scenario 2

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.

- If an Interaction Media Server is **not** available in Orlando, the Default Media Server Selection Rule hits the second item in the list: <ICServerLocation>.
- If an Interaction Media Server is available in Indianapolis, the system uses it to provide echo cancellation.
- Since the Interaction Media Server providing echo cancellation is in Indianapolis, the Default ASR Selection Rule assigned to the Indianapolis Location hits the first item in its list: <This Location>.
- If an ASR server is available in Indianapolis, the system uses it.

Analysis: This scenario illustrates how the <ThisLocation> rule in the Default ASR Selection Rules functions to achieve the best possible result. Here the system sends the audio from the caller to Indianapolis because the Interaction Media Server in Orlando is unavailable. By following the <ThisLocation> rule, the system uses the ASR server in Indianapolis so as not to send audio over another WAN connection.

Scenario 3

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is available in Orlando, the system uses it to provide echo cancellation.
- The Default ASR Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an ASR server is available in Indianapolis, the system uses it.

Analysis: This scenario illustrates how the <ICServerLocation> rule in the Default ASR Selection Rules functions to achieve the best possible result. Because the ASR server in Orlando is unavailable, the system sends audio from the Interaction Media Server in Orlando to an ASR server in Indianapolis. The idea here is that the WAN connection to the location of the CIC server is most likely better than any of the other WAN connections. This scenario also illustrates that the Media Server Selection rules apply first and function independently from the ASR Selection Rules.

(Even though it seems better to select an Interaction Media Server in Indianapolis, it isn't because the audio has to traverse the WAN anyway. And, using an Interaction Media Server in Indianapolis requires the system to send audio to Indianapolis even after the ASR session is complete.)

Scenario 4

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is NOT available in Orlando, the Default Media Server Selection Rule hits the second item in the list: <ICServerLocation>.
- If an Interaction Media Server is available in Indianapolis, the system uses it to provide echo cancellation.
- Since the Interaction Media Server providing echo cancellation is in Indianapolis, the Default ASR Selection Rule assigned to the Indianapolis Location hits the first item in its list: <This Location>.
- If an ASR server is **not** available in Indianapolis, the Default ASR Selection Rule hits the second item in the list: <ICServerLocation>.
- Since<This Location> and <ICServerLocation> are the same, the Default ASR Selection Rule hits the third item in the list: <Any>.
- At this point, the system could select either of the other two ASR servers based on availability.

Analysis: This scenario represents the worst case scenario because audio traverses two WAN connections. This example of the <Any> rule is a rare occurrence because it depends on the unavailability of *both* the Interaction Media Server, where the call came in, and the ASR Server, at the <ICServerLocation>.

> **Note:**
> These scenarios only represent some of the possibilities in the example setup and the only intention is to emphasize how the Default ASR Selection Rules work.

Custom ASR Selection Rules

To use custom selection rules, you create and assign the rules to your locations instead of relying on the default selection rule. For more information about creating selection rules, see "Selection Rules" in the *Interaction Administrator Help* at https://help.genesys.com/cic/mergedProjects/wh_ia/desktop/interaction_administrator_help.htm. For more information about assigning selection rules, see Assign an ASR Selection Rule to a Location.

Scenarios

To see how a custom ASR Selection Rule works, let's assume the following setup. We have a fast WAN connection between Miami and Orlando and so we want to ensure that the system uses this connection before attempting the Indianapolis location, even

though it is the CIC server location. We also have a better connection from Indianapolis to Orlando than to Miami, so we want to ensure that the system uses this connection first. We'll create and assign appropriate custom selection rules to each location. We'll assume that the Interaction Media Servers are set to use the <Default Media Server Selection Rule>.

Indianapolis	Miami	Orlando
Gateway CIC Server Interaction Media Server ASR Server	Gateway Interaction Media Server ASR Server	Gateway Interaction Media Server ASR Server
IRule	**MRule**	**ORule**
Indianapolis Orlando Miami	Miami Orlando Indianapolis	Orlando Miami Indianapolis

Now, let's suppose that a call comes into Orlando. When it does, the steps in one of the following scenarios can occur:

Scenario 1

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is available in Orlando, the system uses it to provide echo cancellation.
- The Custom ASR Selection Rule assigned to the Orlando Location hits the first item in the list: Orlando.
- If an ASR server is available in Orlando, the system uses it.

Analysis: This scenario represents the best case scenario because the audio remains in Orlando. This Custom ASR Selection Rule behaves the same as scenario 1 under the Default ASR Selection Rule.

Scenario 2

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is available in Orlando, the system uses it to provide echo cancellation.
- The Custom ASR Selection Rule assigned to the Orlando Location hits the first item in the list: Orlando.
- If an ASR server is **not** available in Orlando, the Custom ASR Selection Rule hits the second item in the list: Miami.
- If an ASR server is available in Miami, the system uses it.

Analysis: This scenario illustrates how a Custom ASR Selection Rule, which specifies a preference for the WAN connection between Miami and Orlando, does a better job than the Default ASR Selection Rules, which would have tried using an ASR server in Indianapolis before one in Miami.

Scenario 3

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is **not** available in Orlando, the Default Media Server Selection Rule hits the second item in the list: <ICServerLocation>.
- If an Interaction Media Server is available in Indianapolis, the system uses it to provide echo cancellation.
- Since the Interaction Media Server providing echo cancellation is in Indianapolis, the Custom ASR Selection Rule assigned to the Indianapolis Location hits the first item in its list: Indianapolis.
- If an ASR server is available in Indianapolis, the system uses it.

Analysis: In this scenario, the Custom ASR Selection Rule behaves the same as the Default ASR Selection Rule because we are using the Default Media Server Selection Rule.

If we were also using Custom Media Server Selection rules, we could have specified the WAN to Miami instead of the WAN to Indianapolis for the Interaction Media Server. However, since the selected Interaction Media Server is in Indianapolis, the best we can do is use an Indianapolis ASR server to avoid sending the audio over another WAN connection.

Scenario 4

- The Default Media Server Selection Rule assigned to the Orlando Location hits the first item in the list: <This Location>.
- If an Interaction Media Server is **not** available in Orlando, the Default Media Server Selection Rule hits the second item in the list: <ICServerLocation>.
- If an Interaction Media Server is available in Indianapolis, the system uses it to provide echo cancellation.
- Since the Interaction Media Server providing echo cancellation is in Indianapolis, the Custom ASR Selection Rule assigned to the Indianapolis Location hits the first item in its list: Indianapolis.
- If an ASR server is **not** available in Indianapolis, the Custom ASR Selection Rule hits the second item in the list: Orlando.
- If an ASR server is available in Orlando, the system uses it.

Analysis: This scenario represents a near worst case scenario because audio traverses two WAN connections. By using Custom ASR Selection rules, we enforced our preference to use the WAN between Indianapolis and Orlando instead of allowing selection of an ASR server in Miami if it had lower load.

> **Note:**
> These scenarios only represent some of the possibilities in the example setup and the only intention is to emphasize how Custom ASR Selection Rules work.

Assign an ASR Selection Rule to a Location

To use custom ASR selection rules, you assign those rules to a location instead of relying on the default selection rule. For more information about custom rules, see Custom ASR Selection Rules.

To assign an ASR Selection Rule to a location

1. On the CIC server, open Interaction Administrator.
2. In the left pane of the Interaction Administrator window, expand the object that represents your CIC server.
3. Expand the **Regionalization** container.
4. Click the **Locations** object to display your Location Names in the right pane.
5. Double-click a location. The **Locations Configuration** dialog box appears.
6. Click the **Selection Rules** tab.
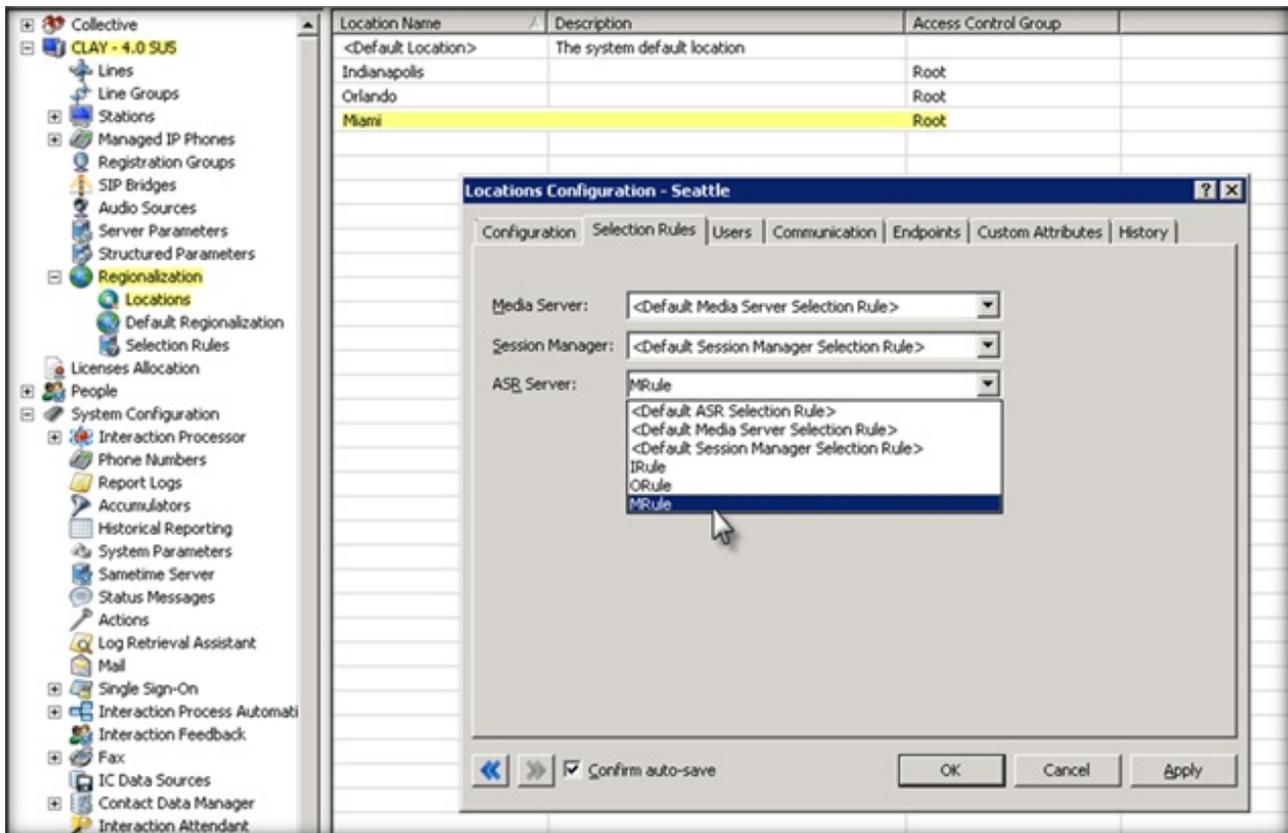
7. Use the ASR server list box to select and assign a default or custom selection rule to the location.

   For more information about creating selection rules, click "**?**" in the title bar.

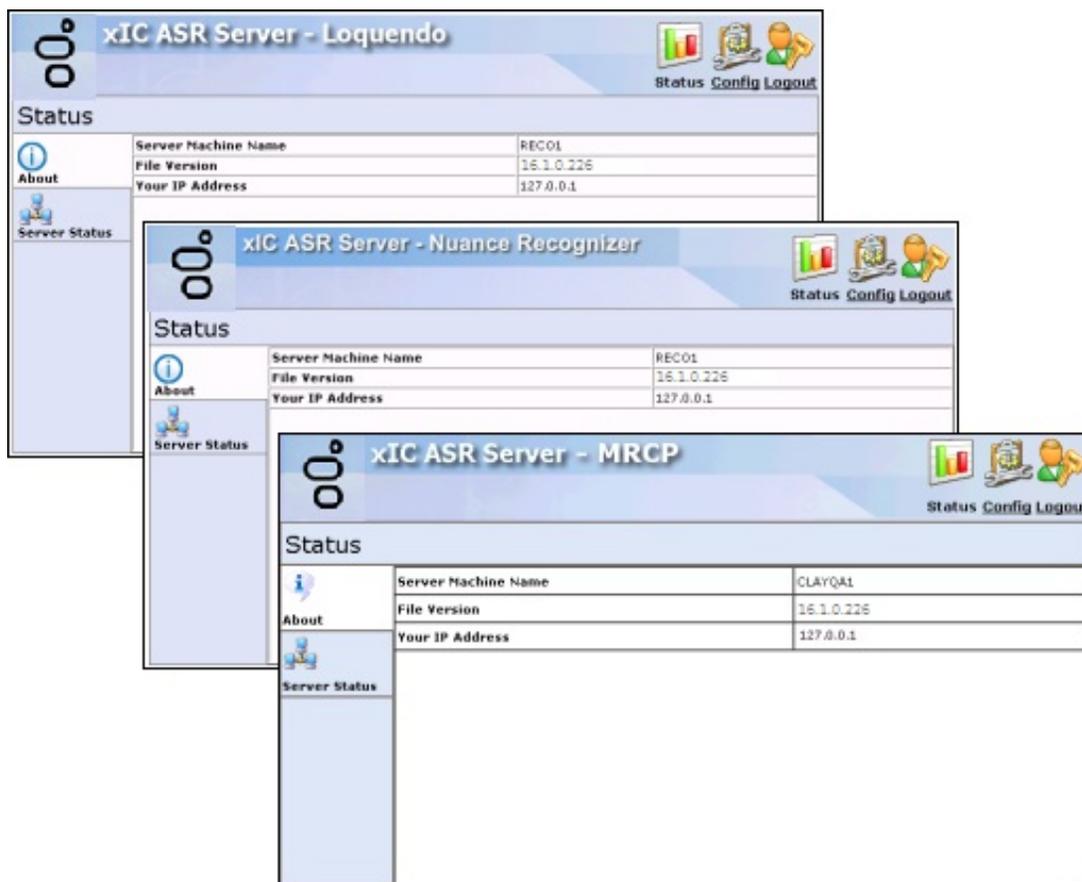# ASR Server Web Configuration Interface

Use the ASR Server Web Configuration interface to set the parameters and properties for the ASR Server.

Open the Web Configuration Interface

Open the Web Configuration interface for your ASR server type.

To open the Web Configuration interface

1. Ensure that the ASR server is running.
2. Open your browser and access `http://{servername}:Port` where *{servername}* is the name of the system running the ASR server and *Port* is the port number specified during installation as the Web Configuration Server Port.
3. In the **Network Authentication** dialog box, type the user name and password that you specified during the ASR server installation and then click **OK**. The **Status** page for the appropriate type of ASR server (based on the port number that you specified to access your **Web Configuration** page) appears.

The **About** tab contains the name of the ASR server, the file version, and the IP address of the system that you are using to access the Web Configuration interface.

Server Status page

The **Server Status** page lists all CIC servers - also known as command servers - currently available. This tab also displays an overview of the connection status and activity of each command server.

ID: Code that identifies the connection between the ASR Server and a CIC server. The system writes it to trace logs to correlate Notifier connections.

Notifier Host: CIC server name or IP address in this connection.

Connection Status: Status of the connection between the ASR Server and the CIC server.
- **Not Connected**: Attempting to establish a Notifier connection with the CIC server, but unable to connect to it. Reconnection attempts occur once every 2 minutes.
- **Authentication Failure**: Found a CIC server but failed to establish a Notifier connection, possibly because of invalid logon credentials. Also, if the system doesn't trust the certificate through Interaction Administrator, this message displays.
- **Waiting for EIM**: CIC server connection established successfully and is waiting for Engine Integration Module to enable.
- **EIM Ready**: CIC server connection established successfully and the ASR server is logging on to the Engine Integration Module.
- **Active**: Notifier connection with the CIC server is active and logged on successfully to the Engine Integration Module.

Accepts Sessions: Status of the ASR Server's ability to accept sessions from the CIC server.

Active Sessions: Number of ASR sessions hosted currently on behalf of the associated CIC server.

Details: Displays the **Details** page, which includes information about each command server and its connection.

Refresh: Updates the information on this page immediately.

Auto-refresh every 10s: If selected, updates the information on this page every 10 seconds.

Details page

The **Details** page provides more information about each command server and its connection.

Configuration ID: Code that identifies the connection between the ASR Server and a CIC server. The system writes it to trace logs to correlate Notifier connections.

Command Server: Server's place in the **Command Servers** list.

Notifier Host: CIC server name or IP address in this connection.

CIC Server Name: Name of the CIC server.

Status: Status of the connection between the ASR Server and the CIC server.
- **Not Connected**: Attempting to establish a Notifier connection with the CIC server, but unable to connect to it. Reconnection attempts occur once every 2 minutes.
- **Authentication Failure**: Found a CIC server but failed to establish a Notifier connection, possibly because of invalid logon credentials. Also, if the system doesn't trust the certificate through Interaction Administrator, this message displays.
- **Waiting for EIM**: CIC server connection established successfully and is waiting for Engine Integration Module to enable.
- **EIM Ready**: CIC server connection established successfully and the ASR server is logging on to the Engine Integration Module.
- **Active**: Notifier connection with the CIC server is active and logged on successfully to the Engine Integration Module.

Accepts Sessions: Status of the ASR Server's ability to accept sessions from the CIC server.

Link: Displays the **Sessions** page.

Total CPU Capacity: Capacity of all CPUs on the ASR server. A larger number indicates that the ASR server has more CPU capacity. The CIC server uses this number for load balancing.

Active Sessions: Number of ASR sessions hosted currently on behalf of the associated CIC server.

Back: Returns to the **Server Status** tab.

Sessions page

The **Sessions** page displays information about the ASR sessions hosted currently on behalf of the associated CIC server.

Interaction: Code that identifies the session.

State: Current state of the session:
- **Idle**: No recognition in progress currently; ready to start a new recognition.
- **Starting**: Recognition started successfully but hasn't started processing audio yet.
- **Detecting**: Recognition in progress and listening for speech.
- **Recognizing**: Recognition in progress and recognizing speech.
- **Closed**: Session closed and cannot use it for another recognition.

Total: Total number of completed recognitions for the session.

Successful: Total number of recognitions for the session that completed without canceling or aborting because of an error.

Canceled: Total number of recognitions for the session that canceled.

Last Reco: Duration of the last recognition (for example, the length of time between when the session's last recognition started and the result returned.)

Idle Time: Length of time the session has been in the Idle State. If the session is not idle, a hyphen (-) appears in this column.

Session Age: Length of time since creating the session.

Back: Returns to the **Details** page.

View Command Servers for Loquendo and Nuance

Use the **Servers** tab on the **Configuration** page to view the available Command Servers for Loquendo and Nuance.
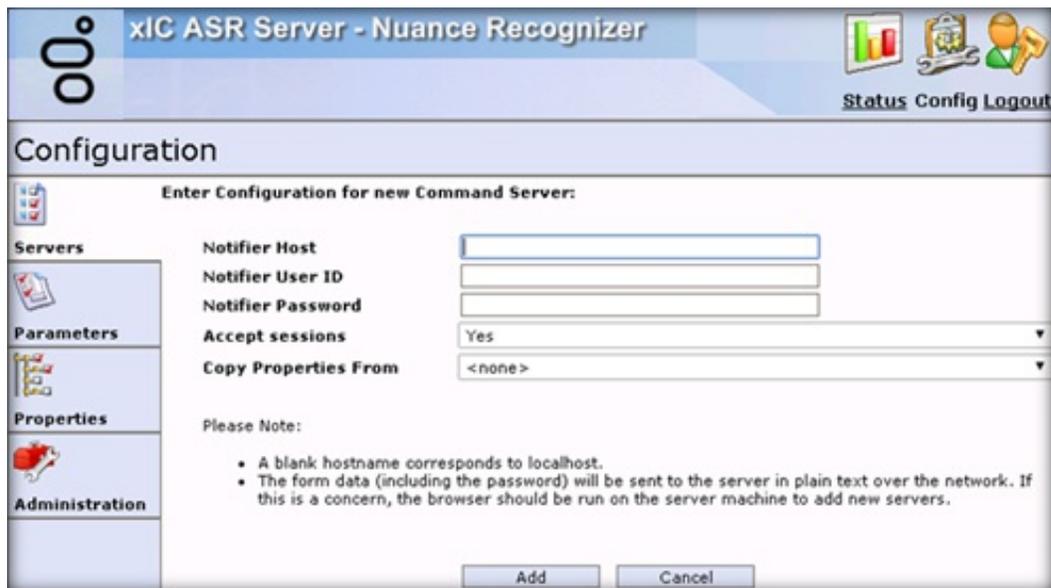
To view available Command Servers for Loquendo and Nuance
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

> **Note:**
> Since the Loquendo and Nuance ASR Server configurations are the same, the following Nuance example functions for both Nuance and Loquendo.

ID: Code that identifies the connection between the ASR Server and a CIC server. The system writes it to trace logs to correlate Notifier connections.

Notifier Host: CIC server name or IP address in this connection.

Accepts Sessions: Status of the ASR server's ability to accept sessions from the CIC server.

Configure: Allows you to configure the server and its properties. For more information, see Configure a Command Server for Loquendo or Nuance and Configure Command Server Properties for Loquendo or Nuance.

Remove: Allows you to remove a server.

Add Server: Allows you to add a server to the list of Command Servers. For more information, see Add a Command Server for Loquendo or Nuance.

Add a Command Server for Loquendo or Nuance

Use the **Enter Configuration for new Command Server** page to add a Command Server for Loquendo or Nuance.

To add a Command Server for Loquendo or Nuance
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

> **Note:**
> Since the Loquendo and Nuance ASR Server configurations are the same, the following Nuance example functions for both Nuance and Loquendo.

3. Click **Add Server**. The **Enter Configuration for new Command Server** page appears.

Notifier Host: CIC server name or IP address in this connection.

Notifier User ID: User name of the CIC user account that the ASR server uses to log on to the CIC server.

Notifier Password: Password for the CIC user account that the ASR server uses to log on to the CIC server.
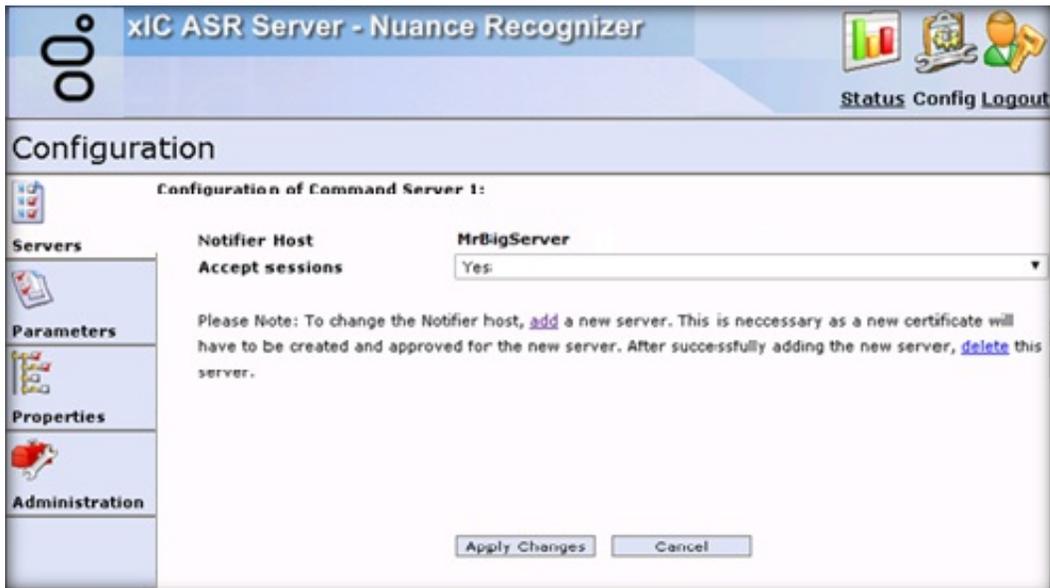
Accepts Sessions: Indicates whether the ASR server accepts requests from the specified CIC server.

Copy Properties From: Existing ASR server connection definition from which to copy the settings, including property settings, for this new server.

Add: Saves the Command Server configuration.

4. Complete the information and then click **Add**.

Trust the ASR Subsystem Certificate

The ASR server sends a subsystem certificate to the CIC server when establishing a connection to the Notifier subsystem. An administrator must trust the certificate from the ASR server before the system can establish a connection. Ensure that you add a Command Server before a certificate can appear. For more information, see Add a Command Server for Loquendo or Nuance or Add a Command Server for MRCP.

To trust a new certificate from the ASR server

1. On the CIC server, open Interaction Administrator.
2. In the left pane of the Interaction Administrator window, click the **System Configuration** container.
3. In the right pane, under the System Configuration column, double-click **Configuration**. The **System Configuration** dialog box appears.
4. Click the **Certificate Management** tab.
5. In the **Subsystem Certificates Configuration** section, click **Modify**. The **Subsystem Certificates** dialog box appears.

6. Select the **New** or **Untrusted** certificate associated to the ASR server and then click **Trust**.

For more information about trusting a certificate, see the *PureConnect Security Precautions Technical Reference* at https://help.genesys.com/pureconnect/secure/download.aspx?path=/Service Updates/doc/pureconnect/Security_Precautions_TR.pdf.

Configure a Command Server for Loquendo or Nuance

Use the **Configuration for Command Server** page to configure a Command Server for Loquendo or Nuance.
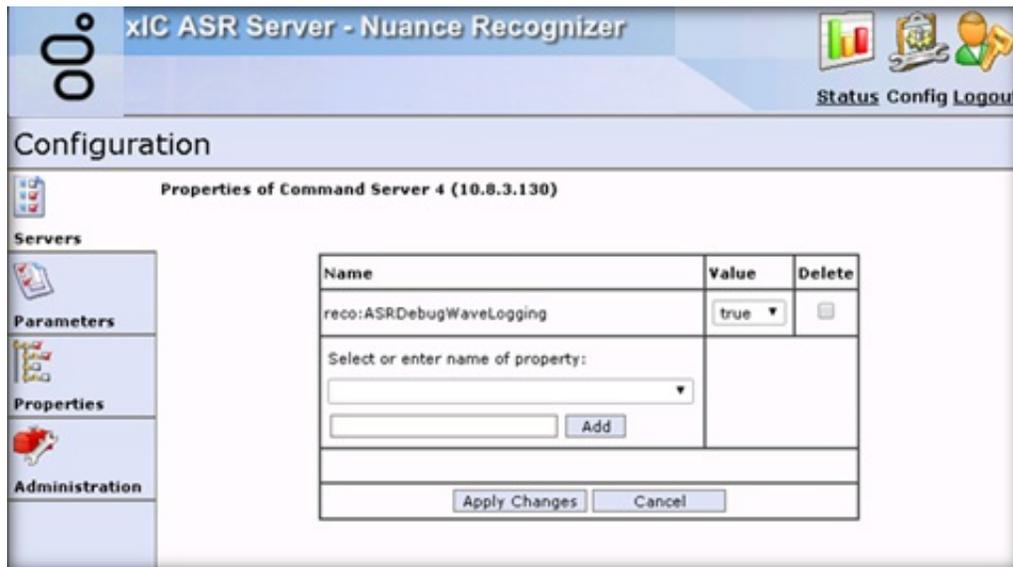
To configure a Command Server for Loquendo or Nuance

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

> **Note:**
> Since the Loquendo and Nuance ASR Server configurations are the same, the following Nuance example functions for both Nuance and Loquendo.

3. In the **Configure** column, click **Server**. The **Configuration of Command Server** page appears.

Notifier Host: CIC server name or IP address in this connection.

Accepts Sessions: Indicates whether the ASR server accepts requests from the specified CIC server.

Add: Allows you to add a server and accept a new certificate. Use this feature to change the Notifier Host.

Delete: Allows you to delete the old server after adding a server to change the Notifier Host.

> **Note:**
> To change the Notifier Host, Add a Command Server for Loquendo or Nuance and accept a new certificate. For more information about certificates, see Trust the ASR Subsystem Certificate. After adding the server, delete the old server.

Apply Changes: Saves the information and closes the page.

4. Complete the information and then click **Apply Changes**.

Configure Command Server Properties for Loquendo or Nuance

Use the **Properties of Command Server** page to add and configure Command Server properties for Loquendo or Nuance.

To configure Command Server Properties for Loquendo or Nuance

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

> **Note:**
> Since the Loquendo and Nuance ASR Server configurations are the same, the following Nuance example functions for both Nuance and Loquendo.

3. In the **Configure** column, click **Properties**. The **Properties of Command Server** page appears.

Name: Name of the property. For a description of the properties, see Command Server Properties for Loquendo or Nuance.

Value: Value to assign to the property.

Delete: If selected, deletes the property from the server.

Select or enter name of property: Name of the property to apply to the server.

[Property Name]: Name of an existing property or custom property to use.

Add: Adds the property you specified in the **[Property Name]** box to the page.

Apply Changes: Saves the information and closes the page.

4. Complete the information and then click **Apply Changes**.

Command Server Properties for Loquendo or Nuance

The following Command Server properties are available for Loquendo or Nuance. For information about configuring the properties, see Configure Command Server Properties for Loquendo or Nuance.

Property Name	Description
Nuance Recognizer 9.0	
nuanceRecognizer:IncludeRawXMLResult	If set, the system includes the `<RawResult>` element in the `resultset` returned to the CIC server. Used for diagnostics, primarily.
nuanceRecognizer:IncludeSWImeaningSlot	By default, the system ignores all `NuanceRecognizer` specific slots. If set, all `SWI_meaning` slots return back the `resultset`.
Loquendo 7.10	
loquendo:BeamSearch	Sets the beam search of the recognizer to allow the client to tune the trade-off between recognition accuracy and speed.
loquendo:DefaultLanguage	Default language to use for compiling grammars when the system can't determine a language from the grammar file itself.
loquendo:DumpAudio	When set to **True**, instructs the Loquendo ASR Server to generate an audio file of each utterance. The system saves the audio file in the same folder as the debug WAV logs.
loquendo:EpSensitivity	Sets the endpoint detector's sensitivity. The value ranges from 0.0 to 1.0 where 0.0 is the least sensitive and 1.0 is the most.
loquendo:GrammarSourceDirectory	Path to the source directory of Loquendo built-in grammars. The system requires this value for grammars that use external references to built-in grammars.
loquendo:IncludeLoquendoData	If set to **True**, the system includes all custom Loquendo data in the recognition `resultset` returned to the CIC server.
loquendo:LimitSearchSpace	Defines the value for the histogram pruning.
loquendo:SessionFile	Path to the session file used to configure the Loquendo ASR engine. If a path is not present, the system uses the default session file.
loquendo:Speed	Sets an acceleration level to speed up the recognition activity. Valid values are: • **level1**: Activates algorithmic acceleration that allows the recognizer to work faster and with minimal recognition reduction. • **level2**: Increases the acceleration power of `level1` with a larger, but controlled, recognition accuracy loss.
loquendo:TrimAudioLength	Sets the maximum audio length for utterances that the system records. **Note:** Set `loquendo:DumpAudio` to **True** for this property to take effect.
Common Properties	
reco:ASRANII	Calling party number associated to the ASR session. Used for logging, primarily.
reco:ASRApplicationName	Application name associated to the ASR session. Used for logging, primarily.

`reco:ASRConfidenceMapping`	Defines a list of confidence mapping pairs used to map the native engine confidences into the confidence values returned in the recognition result. Used to normalize differing confidence values that the ASR engines return. Each mapping pair consists of two floating point values between 0.0 and 1.0 separated by an equal sign. The first value designates the native value that the engine returns and the second value the resulting mapped confidence for that particular engine value. The property might contain an arbitrary number of mapping points. Uses linear interpolation to map confidence values that lie between two points. When mapping confidence values, the system always assumes two implicit mapping points, 0.0=0.0 and 1.0=1.0. This method results in an identity mapping when no property is defined, and the results ensure correct handling at the boundaries.
`reco:ASRDebugWaveLogging`	Boolean to allow logging of `WAV` data for debugging purposes. Default = **False**. > **Note:** > When the `reco:RestrictResultTracing` property is set to **True**, the system behaves as if the `reco:ASRDebugWaveLogging` property is set to **False**.
`reco:ASRDNIS`	Dialed number associated to the ASR session. Used for logging, primarily.
`reco:ASREnableAudioPrefix`	Instructs the ASR server to include the session ID in the RTP URI generated for the ASR session.
`reco:ASRMinResultConf`	Minimum confidence an ASR recognition hypothesis needs for inclusion in the recognition result. Default = 0.1
`reco:Annotation`	Annotates a recognition for logging purposes; for example, to include a description of the ASR session. The system never interprets the string content.
`reco:EnableSpeakerVerification`	Indicates whether to enable speaker identification and verification features for an engine.
`reco:EndOfSpeechNotifyDelay`	Delay time after the end of speech detection before the server sends an end-of-speech notification. Default = 0.1 (100 ms)
`reco:GrammarBaseURI`	Base-URI value used to resolve relative URIs of grammars registered for an interaction.
`reco:GrammarCompileTimeout`	Timeout, in seconds, to use when waiting on grammars to compile. Default = 300 (5 minutes)
`reco:RecordUtterance`	Boolean to control the return of the utterance to the application. If set to **True**, the recognition results that the ASR server returns contain a custom field called <UtteranceAudio>. This field contains the Base64 encoded audio data of the recorded utterance. Default=**False**
`reco:RecordUtteranceType`	Media format of the utterance recording. For example, using this property with a value of `audio/x-alaw-basic` requests the utterance recording in the `alaw` audio format. If the `reco:RecordUtterance` property is not enabled, the system ignores this property. Furthermore, if the ASR server does not support the specified `RecordUtteranceType`, recognitions can fail or not return any utterance recording.

`reco:RestrictResultTracing`	Prevents logging of sensitive data in the IP logs. Set this property to **True** for an input operation. This action sets a flag in the recognition result that suppresses tracing of the utterance and slot values in the trace logs. **Note:** When set to **True**, the system behaves as if the `reco:ASRDebugWaveLogging` property is set to **False**.
`reco:PassThroughVoiceGrammars`	This Boolean property is **False** by default. When set to **False**, the RecoSubsystem parses grammars unless a grammar's MIME type is unknown. When set to **True**, the system passes any voice grammar to the ASR server without the RecoSubsystem doing any validation checks or conversions on the grammar data.
`recocfg:ASRServerProxyEnabled`	Indicates whether a server proxy is enabled. A disabled proxy doesn't allow new sessions.
`recocfg:ASRMaxProxySessionCount`	Maximum number of sessions a server proxy can host. The system refuses requests for new sessions that are above the maximum session count.
`recocfg:ASRServerProxyPriority`	Priority of a server proxy relative to other server proxies. When choosing a server for a session, the system chooses proxies with low priorities first until the proxies reach their session limit.
`recocfg:AudioAdvertisedAddress`	IP address or DNS name under which the CIC server sees the RTP endpoint of the ASR server.
`recocfg:AudioConnectionProbeInterval`	Interval between audio connection probes in seconds. It specifies the minimum interval between successful connection probe attempts.
`recocfg:AudioConnectionProbeMaxFail`	Maximum number of failed audio connection probe attempts before the system assumes and reports a connection configuration problem.
`recocfg:AudioListenInterfaceAddress`	Local IP address of the NIC, which the server uses to receive audio. This address must refer to the same physical device as the `recocfg:AudioAdvertisedAddress` property. Specify the local NIC address as a *dot* address.
`recocfg:EnableAudioConnectionProbe`	Allows the audio connection probes to check the connection between the CIC servers and ASR servers at regular intervals.
`recocfg:SupportedLanguages`	List of languages that an EIM or ASR server supports. An empty list means that the server supports all languages.

Configure ASR Server Parameters for Loquendo or Nuance

Use the **Parameters** tab to configure ASR server parameters for Loquendo or Nuance.

To configure ASR Server Parameters for Loquendo or Nuance
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

Note:
Since the Loquendo and Nuance ASR Server configurations are the same, the following Nuance example functions for both Nuance and Loquendo.

3. Click **Parameters**.

Name: Name of the parameter.

Parameter Name	Description
Nuance and Loquendo	
Number of days to keep Debug WAV log files	Number of days to keep debug WAV log files on the system. The system deletes older log files automatically.
Debug WAV logging directory	Directory to save debug WAV log files.
Grammar Cache CleanupInterval [s]	Number of seconds between garbage collections in the grammar cache.
Grammar Cache Directory	Directory to save cached grammar files on the ASR server.
Idle Grammar Count Baseline	Minimum number of idle grammars always left in the cache. (There is no maximum value for this parameter although the higher the value, the more memory space the system requires.)
Maximum sessions allowed on server	Maximum number of sessions allowed on the server at any one time.
Min. Grammar Idle Time [s]	Minimum amount of time, in seconds, that has to elapse since the last reference to a grammar before that grammar is eligible for garbage collection. (The maximum value for this parameter is 1 day = 86,400 seconds.)
Nuance only	
External grammar compile threshold [Bytes]	Grammars larger than this threshold compile with the external grammar compiler executable.
External grammar compiler executable	Executable file that runs the grammar compiler.

Value: Value to assign to the parameter.

Apply Changes: Saves your changes and closes the page.

4. Complete the information and then click **Apply Changes**.

Configure ASR Server Properties for Loquendo or Nuance

Use the **Properties** tab to add and configure ASR server properties for Loquendo or Nuance.

To configure ASR Server Properties for Loquendo or Nuance
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. Click **Properties**.

Name: Name of the property. For a description of the properties, see [Command Server Properties for Loquendo or Nuance](#).

Value: Value to assign to the property.

Delete: If selected, deletes the property from the server.

Select or enter name of property: Name of the property to apply to the server.

[Property Name]: Name of an existing property or custom property to use.

Add: Adds the property you specified in the **[Property Name]** box to the page.

Apply Changes: Saves your changes and closes the page.

4. Complete the information and then click **Apply Changes**.

Change Your User Name and Password for Loquendo or Nuance

Use the **Administration** tab to change your logon credentials for Loquendo or Nuance.

To change your user name and password for Loquendo or Nuance

1. [Open the Web Configuration Interface](#).
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

> **Note:**
> Since the Loquendo and Nuance ASR Server configurations are the same, the following Nuance example functions for both Nuance and Loquendo.

3. Click **Administration**.

Old User Name: User name of the CIC user account that the ASR server uses to log on to the CIC server.

Old Password: Password for the CIC user account that the ASR server uses to log on to the CIC server.

New User Name: New user name for the ASR server to use to log on to the CIC server.

New Password: New password for the ASR server to use to log on to the CIC server.

Confirm Password: New password for the ASR server to use to log on to the CIC server. The system compares this password to the one you typed in the **New Password** box to verify that the passwords match.

Apply: Saves your changes and closes the page.

> **Note:**
> When you use the **Administration** tab to change your logon credentials, the system sends the credentials across the network to the server in plain text. To ensure security, we recommend that you change your credentials using the browser on the server running the ASR server.

4. Complete the information and then click **Apply**.

View Command Servers for MRCP

Use the **Servers** tab on **Configuration** page to view the available Command Servers for MRCP.

To view Command Servers for MRCP
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

ID: Code that identifies the connection between the ASR server and a CIC server. The system writes it to trace logs to correlate Notifier connections.

Notifier Host: CIC server name or IP address in this connection.

Accepts Sessions: Status of the ASR server's ability to accept sessions from the CIC server.

Configure: Allows you to configure the server and its properties. For more information, see Configure a Command Server for MRCP and Configure Command Server Properties for MRCP.

Remove: Allows you to remove a server.

Add Server: Allows you to add a server to the list of Command Servers. For more information, see Add a Command Server for MRCP.

Add a Command Server for MRCP

Use the **Enter Configuration for new Command Server** page to add a Command Server for MRCP.

To add a Command Server for MRCP
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. Click **Add Server**. The **Enter Configuration for new Command Server** page appears.

Notifier Host: CIC server name or IP address in this connection.

Notifier User ID: User name of the CIC user account that the ASR server uses to log on to the CIC server.

Notifier Password: Password for the CIC user account that the ASR server uses to log on to the CIC server.

Accepts Sessions: Indicates whether the ASR server accepts requests from the specified CIC server.

Copy Properties From: Existing ASR server connection definition from which to copy the settings, including property settings, for this new server.

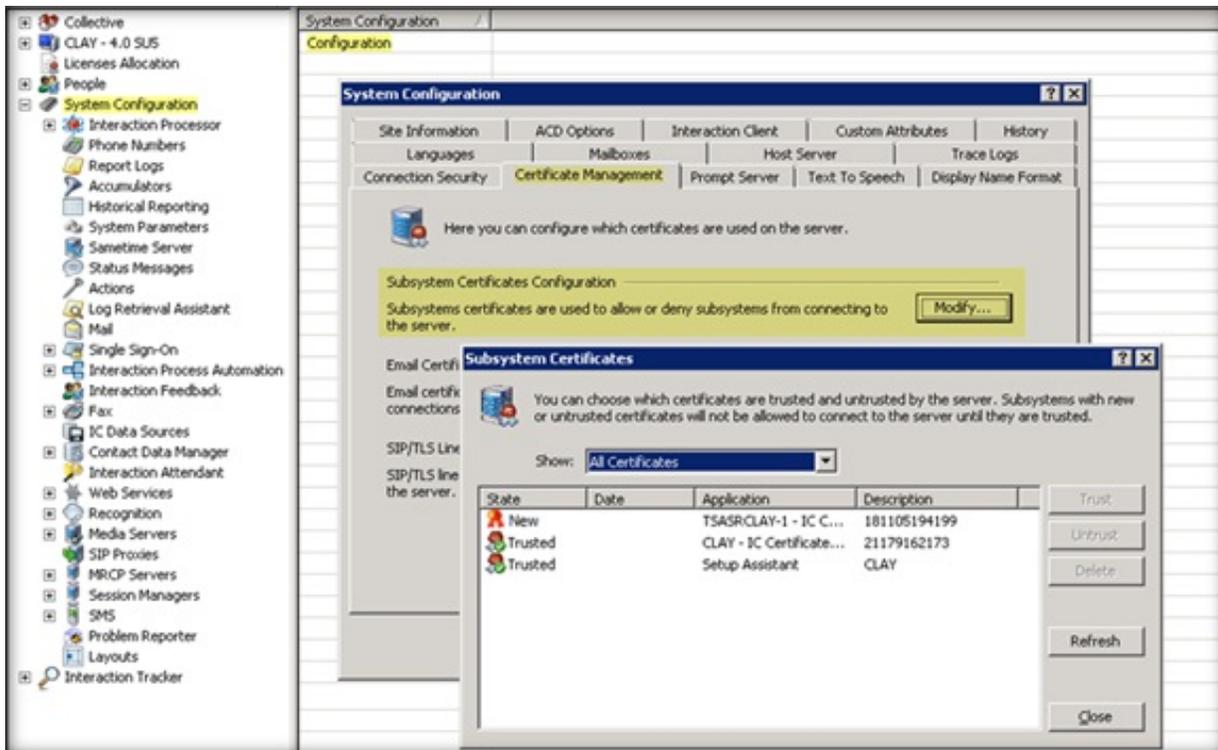**Add:** Saves the Command Server configuration.

4. Complete the information and then click **Add**.

Trust the ASR Subsystem Certificate

The ASR server sends a subsystem certificate to the CIC server when establishing a connection to the Notifier subsystem. An administrator must trust the certificate from the ASR server before the system can establish a connection. Ensure that you add a Command Server before a certificate can appear. For more information, see Add a Command Server for Loquendo or Nuance or Add a Command Server for MRCP.

To trust a new certificate from the ASR server

1. On the CIC server, open Interaction Administrator.
2. In the left pane of the Interaction Administrator window, click the **System Configuration** container.
3. In the right pane, under the System Configuration column, double-click **Configuration**. The **System Configuration** dialog box appears.
4. Click the **Certificate Management** tab.
5. In the **Subsystem Certificates Configuration** section, click **Modify**. The **Subsystem Certificates** dialog box appears.

6. Select the **New** or **Untrusted** certificate associated to the ASR server and then click **Trust**.
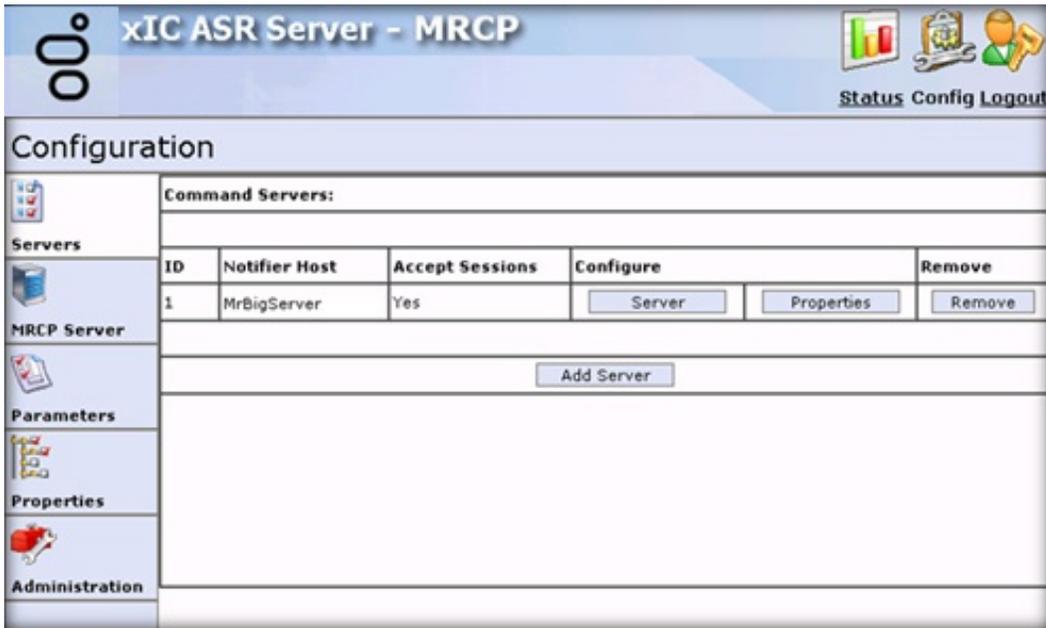
For more information about trusting a certificate, see the *PureConnect Security Precautions Technical Reference* at https://help.genesys.com/pureconnect/secure/download.aspx?path=/Service Updates/doc/pureconnect/Security_Precautions_TR.pdf.

Configure a Command Server for MRCP

Use the **Configuration of Command Server** page to configure a Command Server for MRCP.

To configure a Command Server for MRCP

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. In the **Configure** column, click **Server**. The **Configuration of Command Server** page appears.

Notifier Host: CIC server name or IP address in this connection.

Accepts Sessions: Indicates whether the ASR server accepts requests from the specified CIC server.

Add: Allows you to add a server and accept a new certificate. Use this feature to change the Notifier Host.

Delete: Allows you to delete the old server after adding a server to change the Notifier Host.

> **Note:**
> To change the Notifier Host, Add a Command Server for MRCP and accept a new certificate. For more information about certificates, see Trust the ASR Subsystem Certificate. After adding the server, delete the old server.

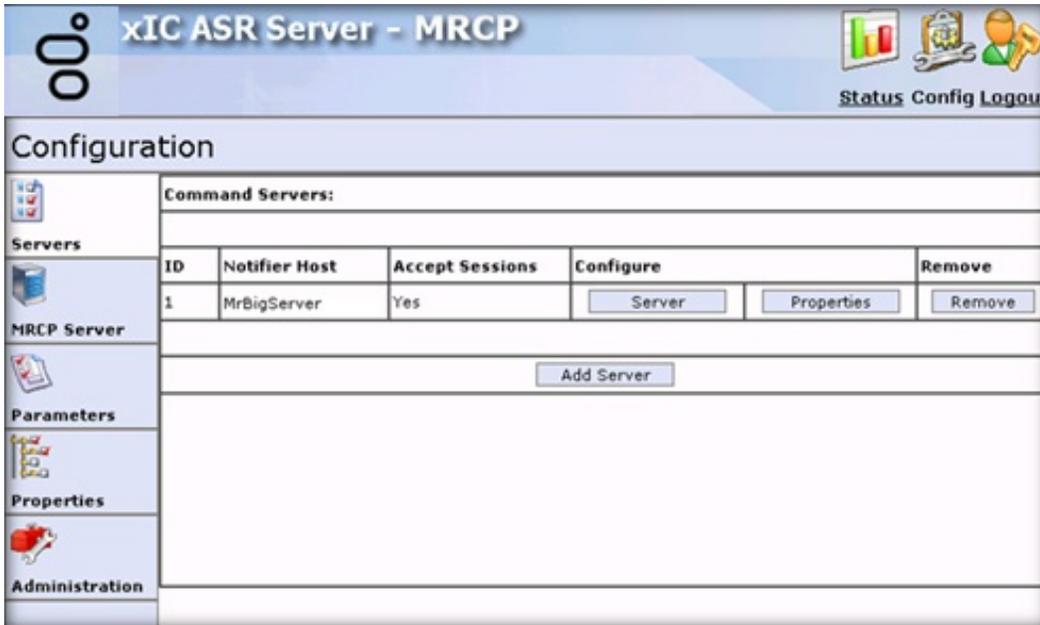**Apply Changes:** Saves the information and closes the page.

4. Complete the information and then click **Apply Changes**.

Configure Command Server Properties for MRCP

Use the **Properties of Command Server** page to add and configure Command Server properties for MRCP.

To configure Command Server properties for MRCP

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. In the **Configure** column, click **Properties**. The **Properties of Command Server** page appears.

   Name: Name of the property. For a description of the properties, see Command Server Properties for MRCP.

   Value: Value to assign to the property.

   Delete: If selected, deletes the property from the server.

   Select or enter name of property: Name of the property to apply to the server.

   [Property Name]: Name of an existing property or custom property to use.

   Add: Adds the property you specified in the **[Property Name]** box to the page.

   Apply Changes: Saves the information and closes the page.

4. Complete the information and then click **Apply Changes**.

Command Server Properties for MRCP

The following Command Server properties are available for MRCP. For information about configuring the properties, see Configure the MRCP Server.

Property Name	Description
Common Properties	
`reco:ASRANII`	Calling party number associated to the ASR session. Used for logging, primarily.
`reco:ASRApplicationName`	Application name associated to the ASR session. Used for logging, primarily.
`reco:ASRConfidenceMapping`	Defines a list of confidence mapping pairs used to map the native engine confidences into the confidence values returned in the recognition result. Used to normalize differing confidence values that the ASR engines return.
	Each mapping pair consists of two floating point values between 0.0 and 1.0 separated by an equal sign. The first value designates the native value that the engine returns and the second value the resulting mapped confidence for that particular engine value. The property might contain an arbitrary number of mapping points.
	Uses linear interpolation to map confidence values that lie between two points. When mapping confidence values, the system always assumes two implicit mapping points, 0.0=0.0 and 1.0=1.0. This method results in an identity mapping when no property is defined, and the results ensure correct handling at the boundaries.
`reco:ASRDebugWaveLogging`	Boolean to allow logging of `WAV` data for debugging purposes.
	Default = **False**.
	Note: When the `reco:RestrictResultTracing` property is set to **True**, the system behaves as if the `reco:ASRDebugWaveLogging` property is set to **False**.
`reco:ASRDNIS`	Dialed number associated to the ASR session. Used for logging, primarily.
`reco:ASREnableAudioPrefix`	Instructs the ASR server to include the session ID in the RTP URI generated for the ASR session.
`reco:ASRMinResultConf`	Minimum confidence an ASR recognition hypothesis needs for inclusion in the recognition result.
	Default = 0.1
`reco:Annotation`	Annotates a recognition for logging purposes; for example, to include a description of the ASR session. The system never interprets the string content.
`reco:EnableSpeakerVerification`	Indicates whether to enable speaker identification and verification features for an engine.
`reco:EndOfSpeechNotifyDelay`	Delay time after the end of speech detection before the server sends an end-of-speech notification.
	Default = 0.1 (100 ms)
`reco:GrammarBaseURI`	Base-URI value used to resolve relative URIs of grammars registered for an interaction.
`reco:GrammarCompileTimeout`	Timeout, in seconds, to use when waiting on grammars to compile.
	Default = 300 (5 minutes)

|	
`reco:RecordUtterance`	Boolean to control the return of the utterance to the application. If set to **True**, the recognition results that the ASR server returns contain a custom field called <UtteranceAudio>. This field contains the Base64 encoded audio data of the recorded utterance. Default=**False**
`reco:RecordUtteranceType`	Media format of the utterance recording. For example, using this property with a value of `audio/x-alaw-basic` requests the utterance recording in the `alaw` audio format. If the `reco:RecordUtterance` property is not enabled, the system ignores this property. Furthermore, if the ASR server does not support the specified `RecordUtteranceType`, recognitions can fail or not return any utterance recording.
`reco:RestrictResultTracing`	Prevents logging of sensitive data in the IP logs. Set this property to **True** for an input operation. This sets a flag in the recognition result that suppresses tracing of the utterance and slot values in the trace logs. **Note:** When set to **True**, the system behaves as if the `reco:ASRDebugWaveLogging` property is set to **False**.
`reco:PassThroughVoiceGrammars`	This Boolean property is set to **False** by default. When set to **False**, the RecoSubsystem parses grammars unless a grammar's MIME type is unknown. When set to **True**, the system passes any voice grammar to the ASR server without the RecoSubsystem doing any validation checks or conversions on the grammar data.
`recocfg:ASRServerProxyEnabled`	Indicates whether a server proxy is enabled. A disabled proxy doesn't allow new sessions.
`recocfg:ASRMaxProxySessionCount`	Maximum number of sessions a server proxy can host. The system refuses requests for new sessions that are above the maximum session count.
`recocfg:ASRServerProxyPriority`	Priority of a server proxy relative to other server proxies. When choosing a server for a session, the system chooses proxies with low priorities first until the proxies reach their session limit.
`recocfg:AudioAdvertisedAddress`	IP address or DNS name under which the CIC server sees the RTP endpoint of the ASR server.
`recocfg:AudioConnectionProbeInterval`	Interval between audio connection probes in seconds. It specifies the minimum interval between successful connection probe attempts.
`recocfg:AudioConnectionProbeMaxFail`	Maximum number of failed audio connection probe attempts before the system assumes and reports a connection configuration problem.
`recocfg:AudioListenInterfaceAddress`	Local IP address of the NIC, which the server uses to receive audio. This address must refer to the same physical device as the `recocfg:AudioAdvertisedAddress` property. Specify the local NIC address as a *dot* address.
`recocfg:EnableAudioConnectionProbe`	Allows the audio connection probes to check the connection between the CIC servers and ASR servers at regular intervals.
`recocfg:SupportedLanguages`	List of languages that an EIM or ASR server supports. An empty list means that the server supports all languages.

Configure the MRCP Server

Use the **MRCP Server** tab to add and configure properties for the MRCP server.

To configure the MRCP server

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. Click **MRCP Server**.
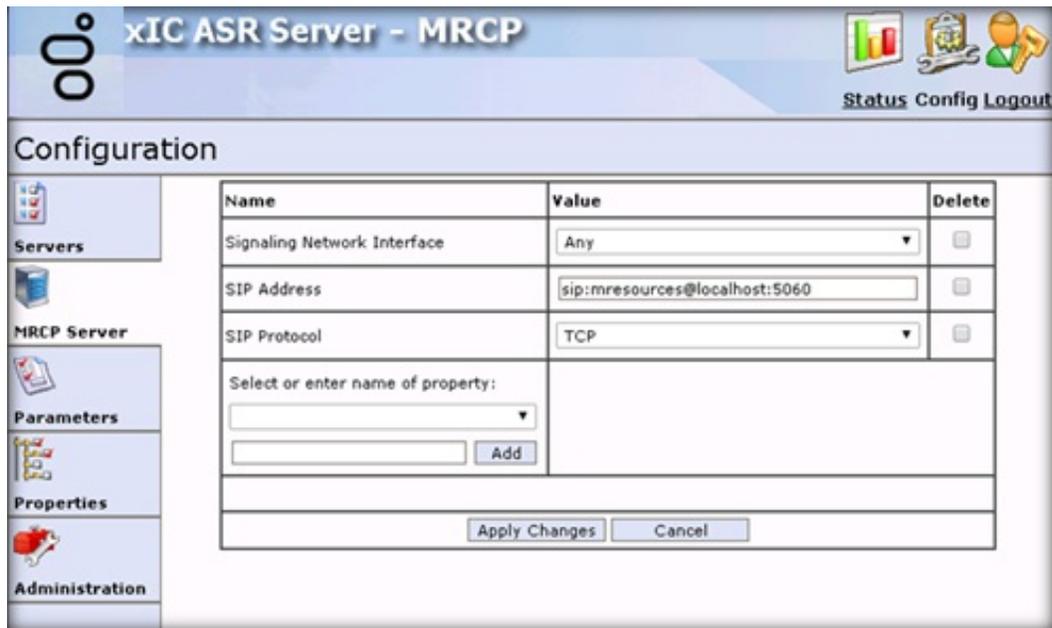
Name: Name of the property. For a description of the properties, see MRCP Server Properties.

Value: Value to assign to the property.

Delete: If selected, deletes the property from the server.

Select or enter name of property: Name of the property to apply to the server.

[Property Name]: Name of an existing property or custom property to use.

Add: Adds the property you specified in the **[Property Name]** box to the page.

Apply Changes: Saves your changes and closes the page.

4. Complete the information and then click **Apply Changes**.

MRCP Server Properties

The following server properties are available for the MRCP server. For information about configuring the properties, see Configure the MRCP Server.

Property Name	Description
Signaling Network Interface	Network interface for sending SIP messages to the MRCP Server. The default interface is **Any**. If you select **Any**, the system uses the default network interface for the server. Options, such as **Any**, **Local Area Connection**, and **Loopback Pseudo-Interface 1**, vary depending on the network interfaces defined on the server.
SIP Address	SIP address that the MRCP server uses. The default is `sip:mresources@localhost:5060`. If you don't set this value, the system includes a warning in the logs. You configure the initial value during the install.
SIP Protocol	Indicates whether to use TCP or UDP to communicate with the MRCP Server. The default is TCP. You configure the initial value during the install. > **Note:** > If the MRCP server supports TCP, we recommend that you use this protocol.
HTTP Grammar Cache Port	HTTP port used for the grammar cache. The default is **0**. Specify **0** to disable the HTTP grammar server. If enabled, we recommend using port 8124.
HTTP QOS DSCP Value	DSCP value to tag on HTTP messages when **HTTP QOS Tagging Enabled** is set to **True**. Select a DSCP value from the list box. If **HTTP QOS Tagging Enabled** is set to **False**, the system ignores this variable. The default value is no tagging.
HTTP QOS Tagging Enabled	Indicates whether to tag HTTP messages to the MRCP server with the **HTTP QOS DSCP Value**. The default value is **False**.
MRCP Server Audio Format	Audio format to send to the MRCP server. Select the audio format from the list box. The MRCP Server must support the selected format or recognitions fail. The default value is **audio/PCMU (MuLaw, 64 Kbps)**.
RTCP QOS DSCP Value	DSCP value to tag on RTCP messages when **RTCP QOS Tagging Enabled** is set to **True**. Select a DSCP value from the list box. If **RTCP QOS Tagging Enabled** is set to **False**, the system ignores this variable. If you don't specify this property, it defaults to the **RTP QOS DSCP Value**.
RTCP QOS Tagging Enabled	Indicates whether to tag RTCP messages to the MRCP server with the **RTCP QOS DSCP Value**. If you don't specify this property, it defaults to the **RTP QOS Tagging Enabled** value.
RTP Port Range	Ports to use to send RTP messages. To configure the values for the range, type the starting port number in the left box and the ending port number in the right box. To add another range, click **Add Value**.
RTP QOS DSCP Value	DSCP value to tag on RTP messages when **RTP QOS Tagging Enabled** is set to **True**. Select a DSCP value from the drop-down list. If **RTP QOS Tagging Enabled** is set to **False**, the system ignores this variable. The default value is **46 (decimal)**.
RTP QOS Tagging Enabled	Indicates whether to tag RTP messages to the MRCP server with the **RTP QOS DSCP Value**. The default value is **False**.
RTP Send Interface Address	Network interface address used to send RTP messages. Type the address to use to send RTP messages. If not specified, the system uses the default network interface.
SIP Invite Timeout	Length of time in milliseconds to wait for a final response to a session's initial SIP Invite request. The default timeout value is **3000 ms**.

SIP Listener Port	Port to listen for SIP requests. The SIP Listener Port only handles BYE requests from the MRCP Server. The default port number is **9060**.
SIP QOS DSCP Value	DSCP value to tag on SIP messages when **SIP QOS Tagging Enabled** is set to **True**. Select a DSCP value from the list box. If **SIP QOS Tagging Enabled** is set to **False**, the system ignores this variable. The default value is **24 (decimal)**.
SIP QOS Tagging Enabled	Indicates whether to tag SIP messages to the MRCP server with the **SIP QOS DSCP Value**. The default value is **False**.
SIP Timer T1	Round-trip time estimate. The default value is **500 ms**.
SIP Timer T2	Maximum retransmission interval for non-INVITE requests and INVITE responses. The system ignores this setting when the SIP Protocol is not UDP. The default value is **1000 ms**.
SIP Timer T4	Maximum duration that a message can remain in the network. The default value is **5000 ms**.
Vendor	Name of the third-party ASR engine vendor, such as `nuance`. If the system doesn't recognize the vendor name, the system ignores this value. If you require vendor-specific adjustments for MRCP integration, specify the vendor name to allow configuration of MRCP properties.

Configure ASR Server Parameters for MRCP

Use the **Parameters** tab to configure ASR server parameters for MRCP.
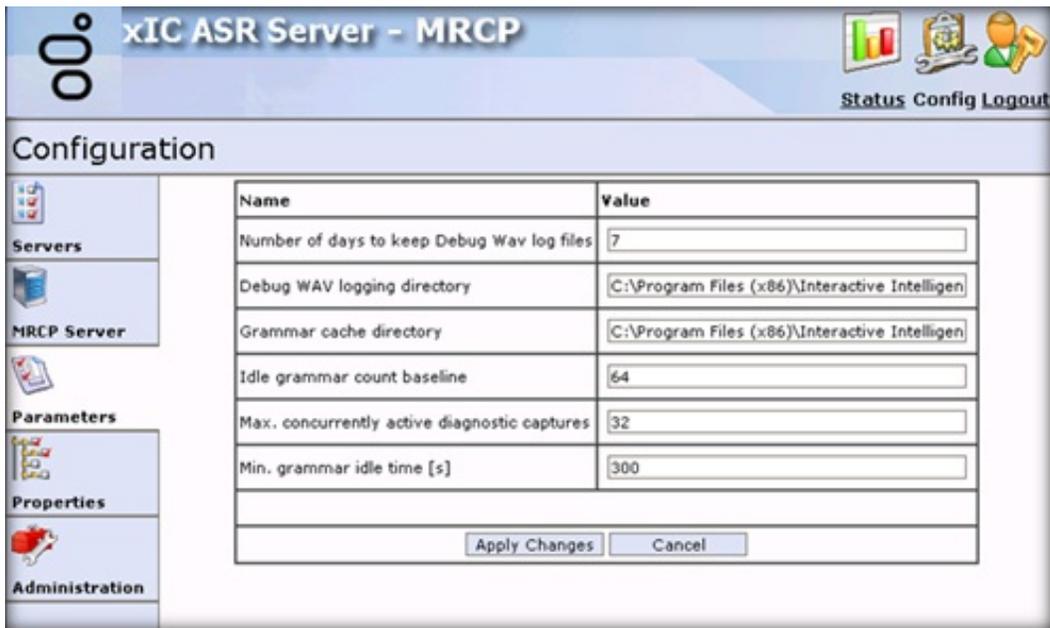
To configure ASR server parameters for MRCP
1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. Click **Parameters**.

Name: Name of the parameter.

Parameter Name	Description
Number of days to keep Debug WAV log files	Number of days to keep debug WAV log files on the system. The system deletes older log files automatically.
Debug WAV Logging Directory	Directory to save debug WAV log files.
Grammar Cache CleanupInterval [s]	Number of seconds between garbage collections in the grammar cache.
Grammar Cache Directory	Directory to save cached grammar files on the ASR server.
Idle Grammar Count Baseline	Minimum number of idle grammars always left in the cache.
Max. concurrently active diagnostic captures	Maximum number of diagnostic captures active at the same time. The property `recomrcp:RtpDiagnosticCaptureEnabled` determines which sessions the system can capture.
Min. Grammar Idle Time [s]	Minimum amount of time, in seconds, that has to elapse since the last reference to a grammar before that grammar is eligible for garbage collection.

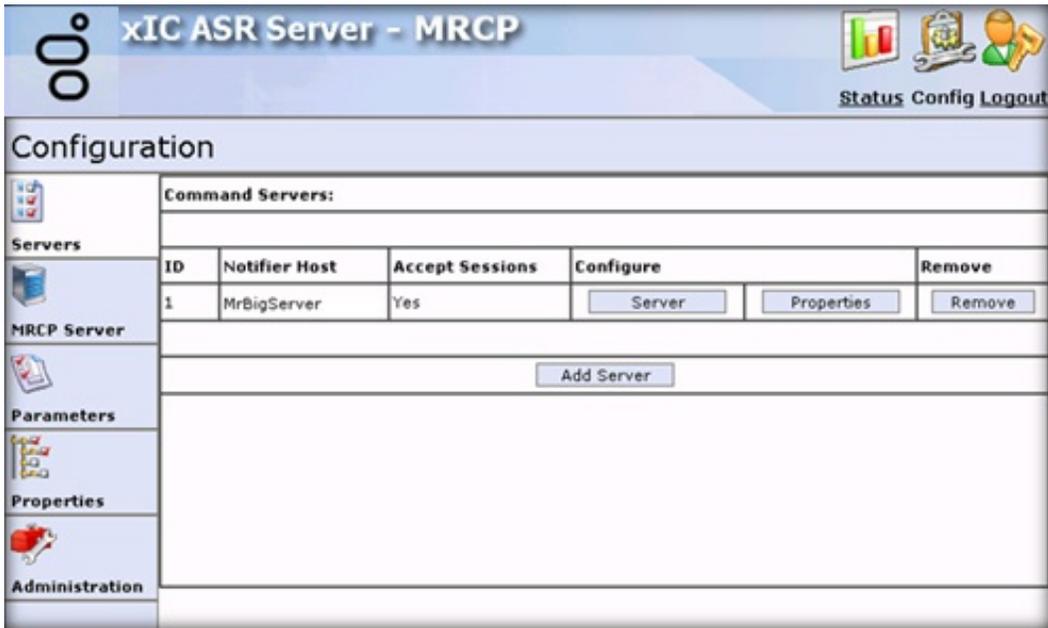**Value:** Value to assign to the parameter.

4. Complete the information and then click **Apply Changes**.

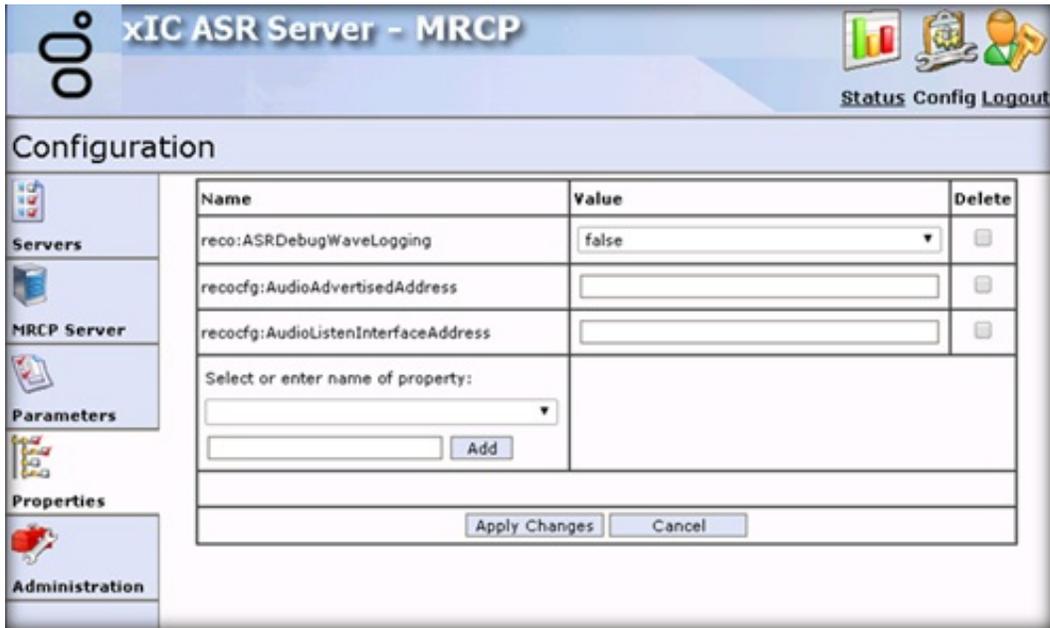---

Configure ASR Server Properties for MRCP

Use the **Properties** tab to add and configure ASR server properties for MRCP.

To configure ASR server properties for MRCP

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

---

3. Click **Properties**.

Name: Name of the property. For a description of the properties, see ASR Server Properties.

Value: Value to assign to the property.

Delete: If selected, deletes the property from the server.

Select or enter name of property: Name of the property to apply to the server.

[Property Name]: Name of an existing property or custom property to use.

Add: Adds the property you specified in the **[Property Name]** box to the page.

Apply Changes: Saves your changes and closes the page.

4. Complete the information and then click **Apply Changes**.

ASR Server Properties

The following table lists the server properties that are common to all ASR servers. For information about configuring the properties, see Configure ASR Server Properties for MRCP.

Property Name	Description
Nuance	
`nuance:IncludeSwiSlots`	Indicates whether to create slots that start with `SWI_`. When the MRCP Server `Vendor` parameter is not set to `nuance`, the system treats this property as **True**. The default is **False** when the `Vendor` parameter is set to **nuance**.
`nuance:SessionXml`	Allows the system to send a custom `session.xml` configuration to the MRCP server during the SIP INVITE. For more information, see the Nuance documentation.
Common Properties	
`reco:ASRConfidenceMapping`	List of confidence mapping pairs used to map the native engine confidences into the confidence values returned in the recognition result. Used to normalize differing confidence values that the ASR engines return.
	Each mapping pair consists of two floating point values between 0.0 and 1.0 separated by an equal sign. The first value designates the native value that the engine returns and the second value the resulting mapped confidence for that particular engine value. The property might contain an arbitrary number of mapping points.
	Uses linear interpolation to map confidence values that lie between two points. When mapping confidence values, the system always assumes two implicit mapping points, 0.0=0.0 and 1.0=1.0. This method results in an identity mapping when no property is defined, and the results ensure correct handling at the boundaries.
`reco:ASRDebugWaveLogging`	Boolean to allow logging of WAV data for debugging purposes.
	Default = **False**
`reco:ASRMinResultConf`	Minimum confidence an ASR recognition hypothesis must have for inclusion in the recognition result.
	Default = 0.1
`reco:GrammarCompileTimeout`	Timeout, in seconds, to use when waiting on grammars to compile.
	Default = 300 (5 minutes)
`reco:RecordUtterance`	Boolean to control the return of the utterance to the application. If set to **True**, the recognition results that the MRCP server returns contain a custom field called `<UtteranceAudio>`. This field contains the Base64 encoded audio data of the recorded utterance. Default = **False**
`reco:RecordUtteranceType`	Media format of the utterance recording. For example, using this property with a value of audio/x-alaw-basic requests the utterance recording in the `alaw` audio format. The system ignores this property when the **reco:RecordUtterance** property is not enabled. Furthermore, recognitions can fail or not return any utterance recording when the MRCP server does not support the specified RecordUtteranceType.
`reco:RestrictResultTracing`	Prevents the system from logging sensitive data in plain text in the IP log.
	Set to **True** for an input operation. The system sets a flag in the recognition result that suppresses tracing of the utterance and slot values in the trace logs.
`recocfg:AudioAdvertisedAddress`	IP address or DNS name under which the CIC server sees the RTP endpoint of the ASR Server.
`recocfg:AudioListenInterfaceAddress`	Local IP address of the NIC, which the server uses to receive audio. This address must refer to the same physical device as the **recocfg:AudioAdvertisedAddress** property. Specify the local NIC address as a *dot* address.

MRCP	
`recomrcp:IncludeRawNlsmlResult`	Indicates whether to include the raw NLSML result as a custom element. If this value is set to **True**, the system adds the <result> element of the NLSML result data to the end of the recognition result, wrapped in a <RawResult> element. Default = **False**.
`recomrcp:<MRCP-Header-Field>`	Sends a custom header field to the MRCP server. For example, in the **Select or enter name of** property text box, type `recomrcp:Vendor-Specific-Parameters` to send vendor-specific parameters to the MRCP server.
`recomrcp:RtpDiagnosticCaptureEnabled`	Indicates whether to dump received RTP packets to a capture file for diagnostic purposes. The capture files reside in the trace directory.
`recomrcp:SetLoggingTagToInteractionId`	Indicates whether to send MRCP `Set-Params` with a `Logging-Tag` of each session's interaction ID at the beginning of each session, by default. However, the `Logging-Tag` is not set to the interaction ID when the `recomrcp:Logging-Tag` has already set the `Logging-Tag` header field for the session.
`recomrcp:Speech-Language`	Default language. Since grammar files specify the language to use, the system doesn't require this property. However, you might need a default language to register top-level built-in grammars. **Note:** An invalid setting can prevent creation of new ASR sessions.

Change Your User Name and Password for MRCP

Use the **Administration** tab to change your logon credentials for MRCP.

To change your user name and password for MRCP

1. Open the Web Configuration Interface.
2. In the toolbar of the **Status** page, click **Config**. The **Configuration** page appears with the **Servers** tab selected.

3. Click **Administration**.

Old User Name: User name of the CIC user account that the ASR server uses to log on to the CIC server.

Old Password: Password for the CIC user account that the ASR server uses to log on to the CIC server.

New User Name: New user name for the ASR server to use to log on to the CIC server.

New Password: New password for the ASR server to use to log on to the CIC server.

Confirm Password: New password for the ASR server to use to log on to the CIC server. The system compares this password to the one you typed in the **New Password** box to verify that the passwords match.

Apply: Saves your changes and closes the page.

> **Note:**
> When you use the **Administration** tab to change your logon credentials, the system sends the credentials across the network to the server in plain text. To ensure security, we recommend that you change your credentials using the browser on the server running the ASR server.

4. Complete the information and then click **Apply**.

Appendix

Appendix A: Install the Loquendo ASR Server Controller

If you installed the Loquendo ASR Engine software, install the Loquendo ASR Server controller on the ASR server with the Loquendo Engine software.

To install the Loquendo ASR Server controller

1. Do the following:

    a. Download the CIC 2018 R4 or later `.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 servers on which you plan to run the CIC 2018 R4 or later installs.

    c. Mount the `.iso` file and share the contents so that they are accessible to the servers on which you plan to run the CIC 2018 R4 or later installs.

2. Navigate to the `\Installs\Off-ServerComponents` directory on the file server.

3. Copy the `LoquendoASR_2018_R4.msi` file to the server on which you plan to run this install and double-click to start it. The **Welcome** page in the Loquendo ASR Server Setup wizard appears.
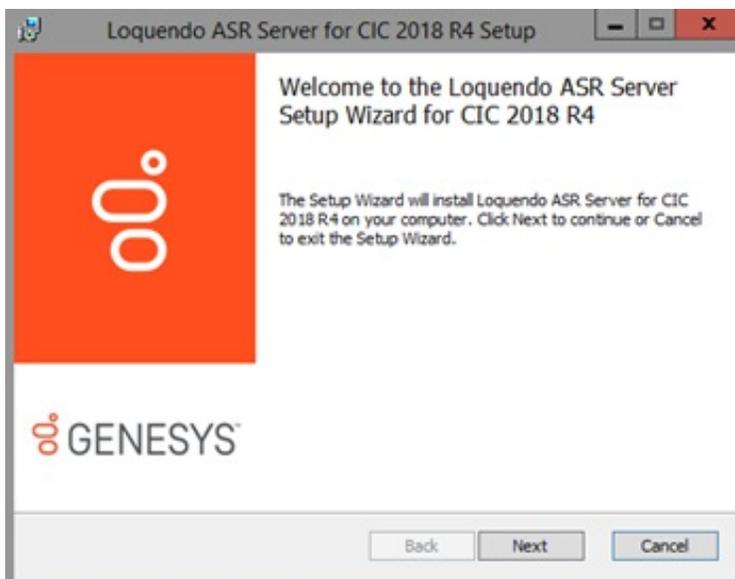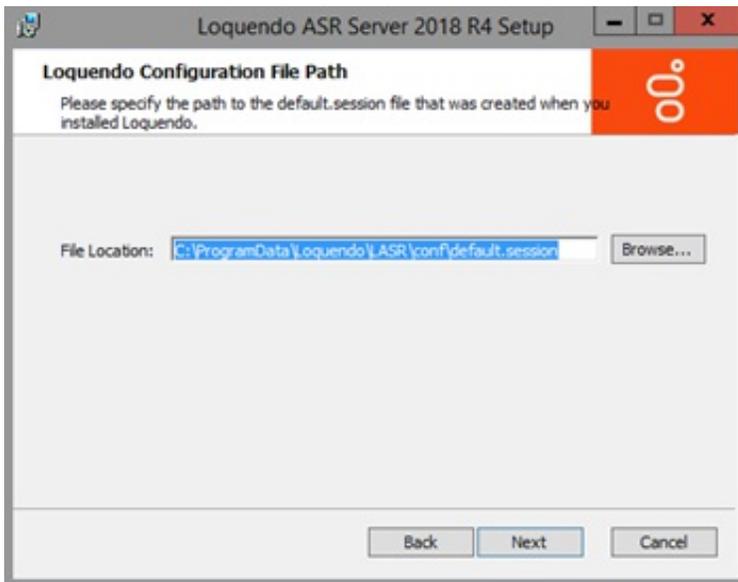

4. Click **Next**. The **Custom Setup** page appears.
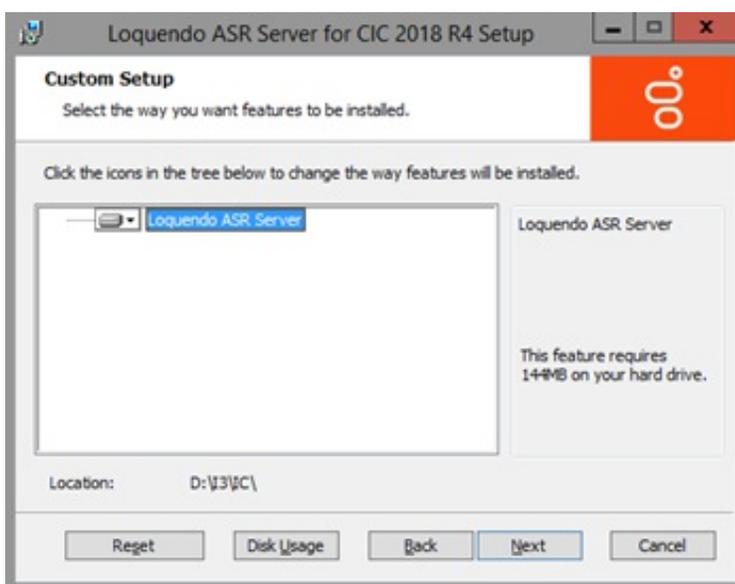
5. Select which components to install or install the complete package and then click **Next**. The **Domain User Validation** page appears.
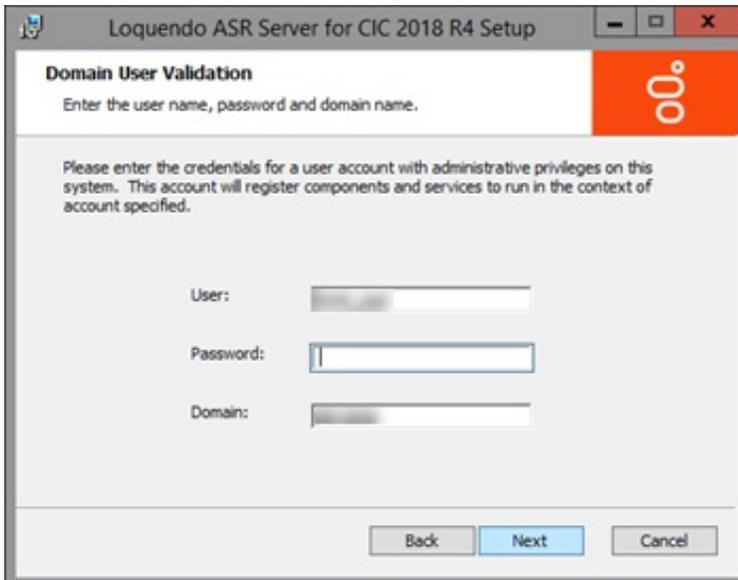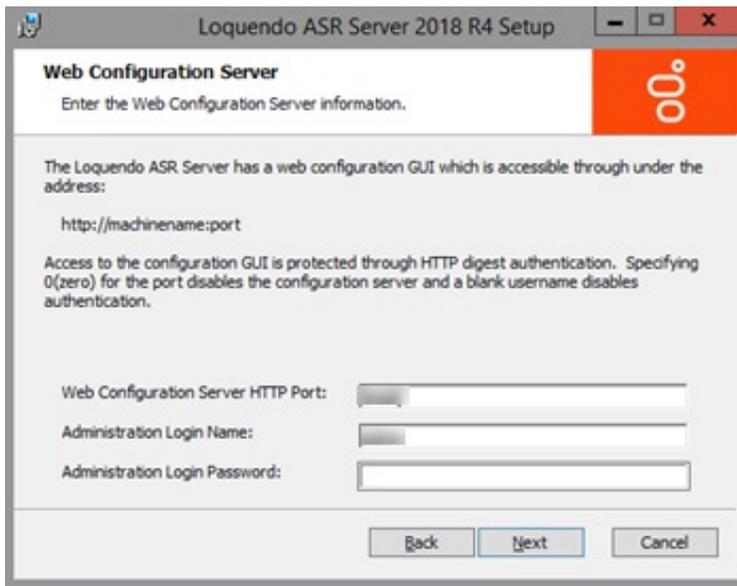

6. Type your Windows logon credentials and the domain name in the boxes and then click **Next**. The **Loquendo Configuration File Path** page appears.

7. Do one of the following:

   - To accept the default session file location, click **Next**.
   - To specify a session file location, click **Browse…,** select a location, and then click **Next**.
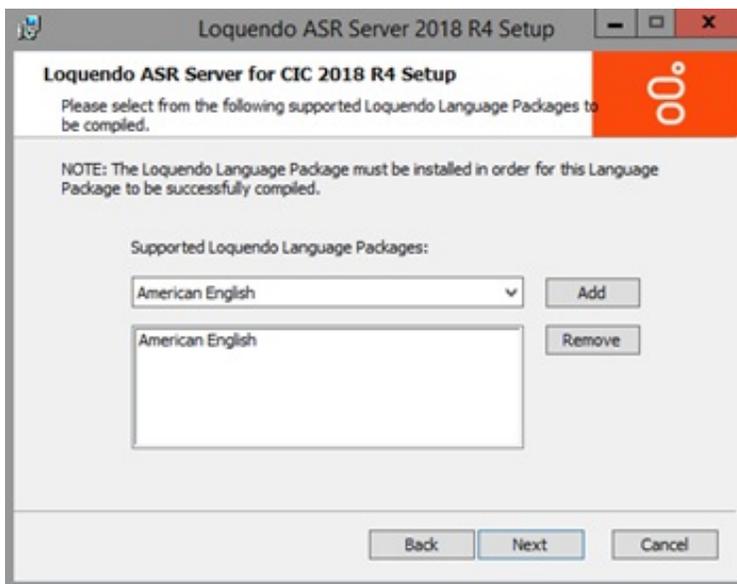
     The **Web Configuration Server** page appears.

8. Specify the Web Configuration Server HTTP port and administrator credentials.

    > **Note:**
    > Ensure that the administration password is secure, as an unauthorized user could render an ASR server inoperable through the web interface.

9. Click **Next**. The **Loquendo ASR Server Setup** page appears.

10. Select the Loquendo Language package to use and then click **Next**. The **Ready to install Loquendo ASR Server** page appears.
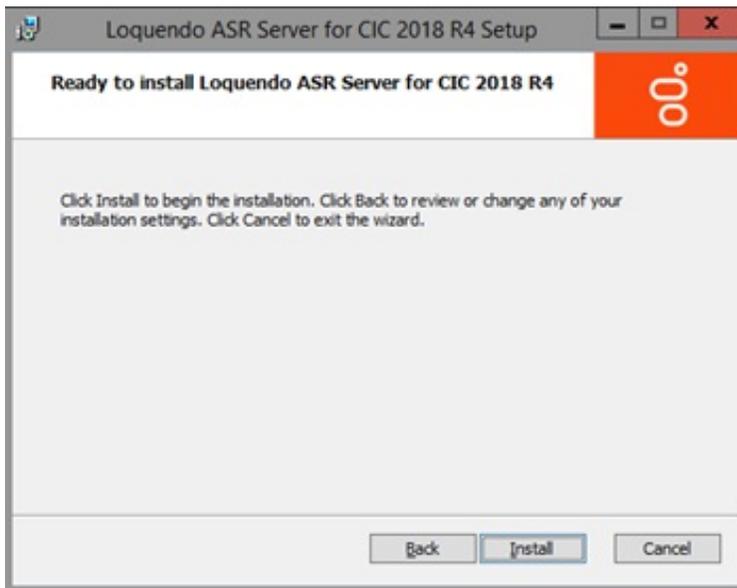
11. Click **Install**. The installation procedure takes a few minutes to complete. When finished, the **Completed the Loquendo ASR Server Setup Wizard** page appears.

12. Click **Finish**.

> **Note:**
> ASR server controllers must be at the same Release version or later as the Release version of the CIC servers they associated to, and you must update the ASR server *before* the CIC server. To apply a Release version after installing this ASR server controller, see the Latest CIC Release page at https://my.inin.com/products/cic/Pages/Latest-Release.aspx.

Install the Nuance Recognizer 9 ASR Server Controller

If you installed the Nuance Recognizer ASR Engine software, install the Nuance Recognizer 9 ASR Server controller on the ASR server with the Nuance Recognizer Engine software.

> **Important!**
> If you are running Nuance Recognizer 10, install the MRCP ASR Server controller instead of the Genesys Nuance Recognizer Server controller. The Genesys Nuance Recognizer Server controller supports Nuance Recognizer 9.0 only.

To install the Nuance Recognizer 9 ASR Server controller

1. Do the following:
   a. Download the CIC 2018 R4 or later `.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 servers on which you plan to run the CIC 2018 R4 or later installs.
   c. Mount the `.iso` file and share the contents so that they are accessible to the servers on which you plan to run the CIC 2018 R4 or later installs.

2. Navigate to the `\Installs\Off-ServerComponents` directory on the file server.

3. Copy the `ASRServerNuanceRecognizer_2018_R4.msi` file to the server on which you plan to run this install and double-click to start it. The **Welcome** page in the Genesys Nuance Recognizer Server Setup wizard appears.
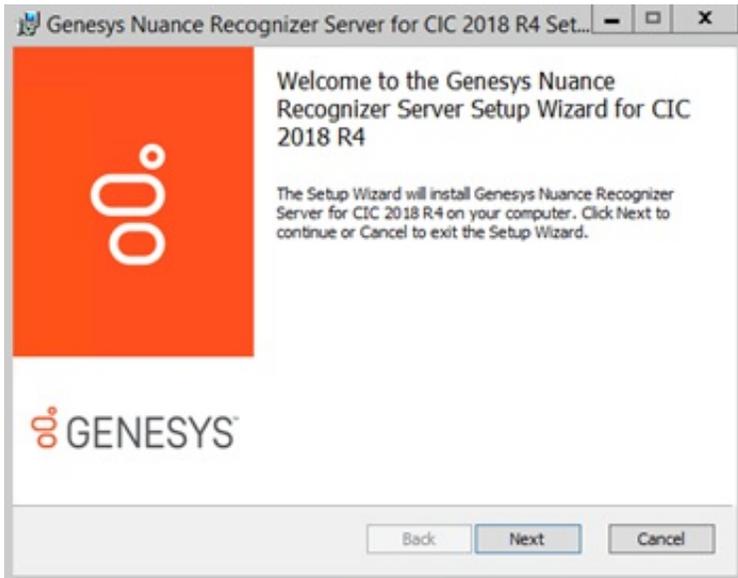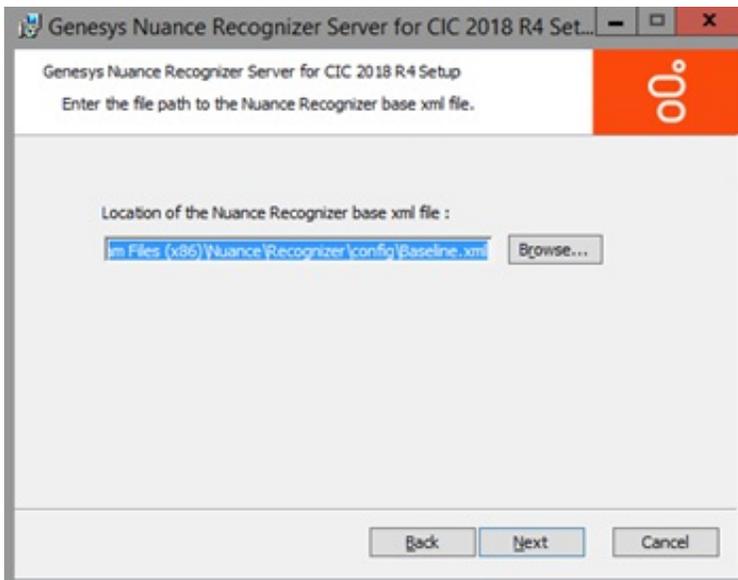
4. Click **Next**. The **Custom Setup** page appears.
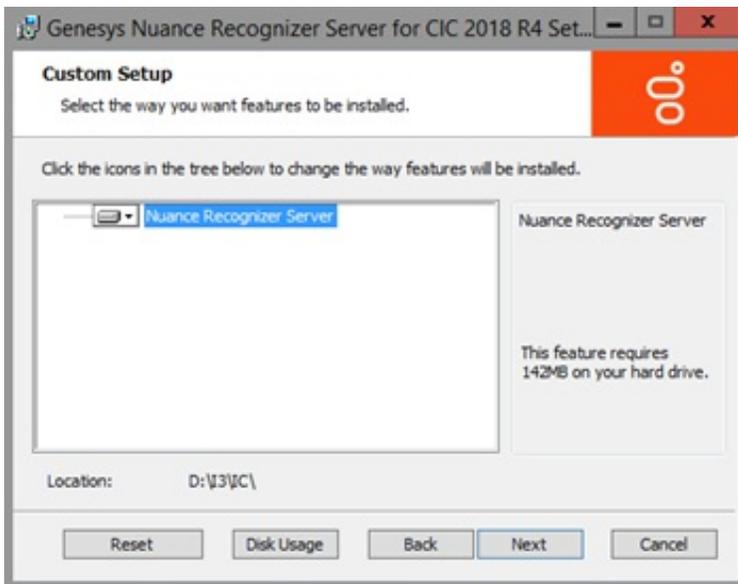
5. Select the components to install or install the complete package and then click **Next**. The **Domain User Validation** page appears.
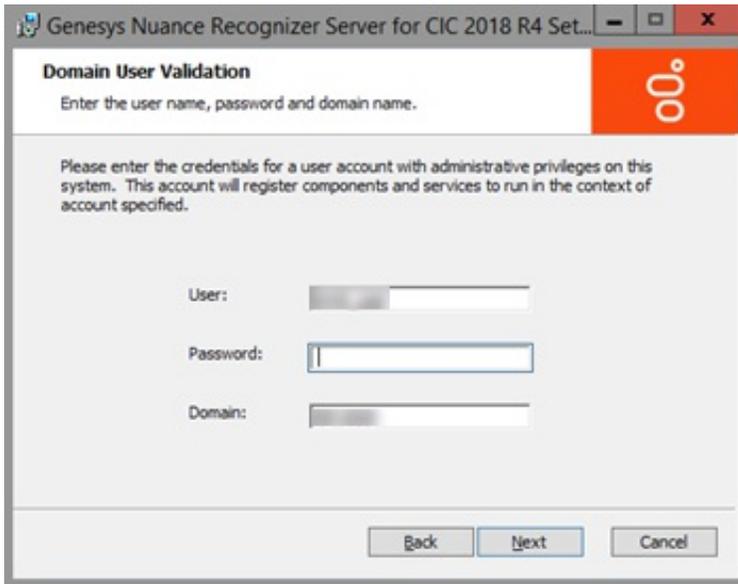
6. Type your Windows logon credentials and the domain name, and then click **Next**. The "Location" page appears.

7. Do one of the following:

    - To accept the default path for the Nuance Recognizer baseline.xml file, click **Next**.
    - To specify a path for the Nuance Recognizer baseline.xml file, click **Browse...,** select a location, and then click **Next**.

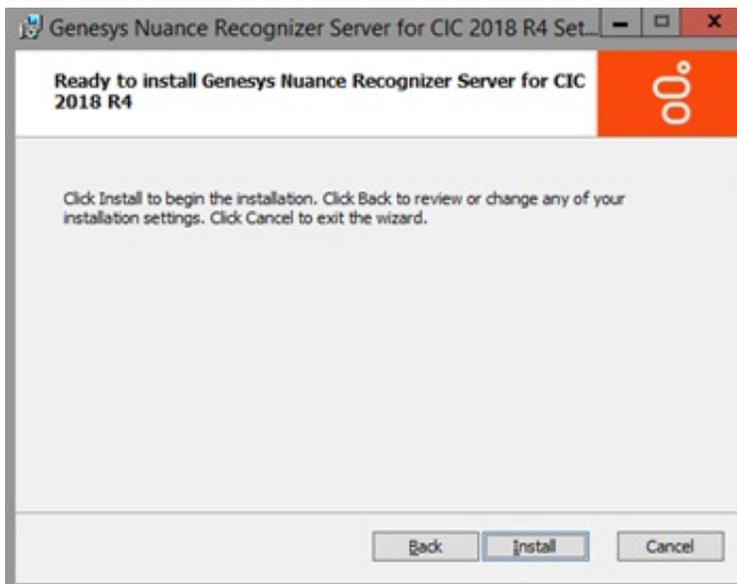   The **Web Configuration Server** page appears.
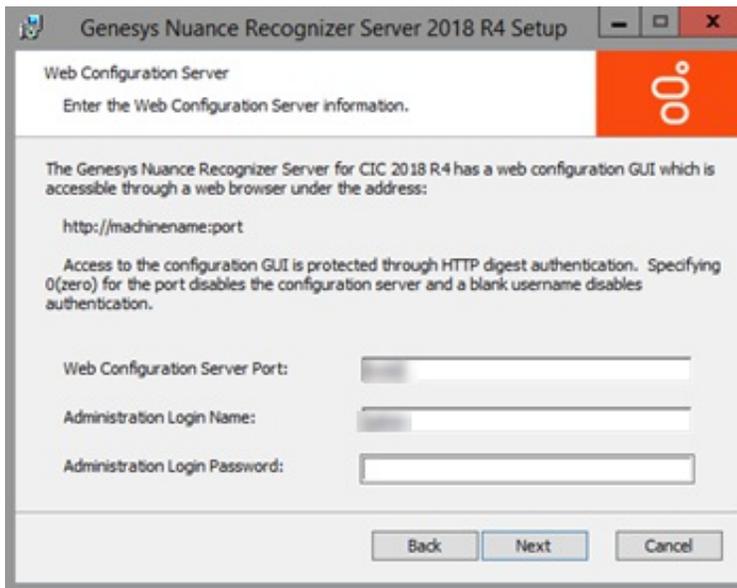
8. Type the Web Configuration Server Port and administrator credentials.

> **Note:**
> Ensure that the administration password is secure, as an unauthorized user could render an ASR server inoperable through the web interface.

9. Click **Next**. The **Ready to install Genesys Nuance Recognizer Server** page appears.

10. Click **Install**. The installation procedure takes a few minutes to complete. When finished, the **Completed the Nuance Recognizer Server Setup Wizard** page appears.
11. Click **Finish**.

> **Note:**
> ASR server controllers must be at the same Release version or later as the Release version of the CIC servers they associate to, and you must update the ASR server *before* the CIC server. To apply a Release version after installing this ASR server controller, see the Latest CIC Release page at https://my.inin.com/products/cic/Pages/Latest-Release.aspx.

Change Log

The following table summarizes the changes to the *Automated Speech Recognition Technical Reference* since its initial release.

Date	Change
23-July-2012	Updated Copyright and Trademarks for 2012.
26-July-2012	Updated ASR Server Properties table for `reco:RecordUtterance.`
06-December-2012	Updated licenses for MRCP ASR Servers.
11-December-2012	Added new information for installing and configuring an MRCP ASR Server.
19-December-2012	Added CIC 4.0 SU3, or later, MRCP ASR Server download link.
30-January-2013	Setup Assistant graphic updated for 4.0 SU3.
25-February-2013	Updated Copyright and Trademarks for 2013.
15-July-2013	Added reference when configuring the Recognition Configuration pages to see the Interaction Administrator Help.
23-July-2013	Updated speech integration architecture diagram.
05-December-2013	Updated licensing information and updated references to related documentation.
11-February-2014	Updated Copyright and Trademarks for 2014.
30-April-2014	Added information for assigning an ASR server to a location and specifying selection rules.
30-May-2014	- Added `reco:RecordUtteranceType` to the ASR Server Properties table. - Added `reco:RecordUtterance` and `reco:RecordUtteranceType` to the MRCP Server Properties table.
11-June-2014	Added `reco:PassThroughVoiceGrammars` to the ASR Server Properties table.
04-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 Product Information site URLs, and copyright and trademark information.
17-April-2015	- Added information on how grammar caching works. - Added information on how load balancing works. - Updated the ASR Product Architecture diagrams. - Updated Copyright and Trademarks page. - Updated the document to reflect the CIC 2015 R3 version.
23-June-2015	- Updated descriptions of `reco:ASRDebugWaveLogging` and `reco:RestrictResultTracing` properties in the ASR Server Properties table. - Updated cover page to reflect new color scheme and logo. - Updated copyright and trademark information. - Updated the document to reflect the CIC 2015 R4 version.
09-October-2015	- Added information on the `nuance:SessionXml` property. - Updated the document and graphics to reflect the CIC 2016 R1 version.
04-February-2016	- Changed all the references and links to the new PureConnect Documentation Library at http://help.genesys.com. - Updated the document and graphics to reflect the CIC 2016 R1 version.
07-June-2017	Added an MRCP property to set the Interaction ID as part of the MRCP Logging-Tag.
05-January-2018	Removed the `reco:ASREnableAudioPrefix` property, as it is no longer used. This property instructed ASR Server to include the session ID in the RTP URI generated for the ASR session.

29-March-2018	Rebranded to Genesys.
25-July-2018	Corrected typographical and grammatical errors.
02-November-2018	Clarified the note for the "reco:ASRDebugWaveLogging" and "reco:RestrictResultTracing" properties in "Command Server Properties for Loquendo or Nuance" and "Command Server Properties for MRCP."
06-March-2019	Update architecture diagrams.
03-May-2019	Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section...".
18-June-2019	Added a note for customers who are running Nuance Recognizer 10 indicating that they must install the MRCP ASR Server controller instead of the Genesys Nuance Recognizer Server controller.
25-September-2019	Corrected the statement that MRCP ASR servers require the I3_FEATURE_MRCP_ASR license. MRCP ASR requires the CIC server license to include the I3_FEATURE_MRCP_ASR feature, but there's no license file required for the MRCP ASR Server component itself. For more information, see Verify the Speech Recognition Services Add-on License.
13-November-2019	Added details about user-defined grammars to ASR Grammars.
14-November-2019	• Moved "Install the Loquendo ASR Server Controller" to the Appendix and renamed it to "Appendix A: Install the Loquendo ASR Server Controller". • Moved "Install the Nuance Recognizer ASR Server Controller" to the Appendix and renamed it to "Appendix B: Install the Nuance Recognizer 9 ASR Server Controller". • Added instructions to install the Nuance Recognizer 11 ASR Server Controller.
01-April-2020	Changed path to *Security Precautions Technical Reference* in the following: • Trust the ASR Subsystem Certificate (Loquendo or Nuance) • Trust the ASR Subsystem Certificate (MRCP)
14-May-2020	Removed instructions for installing the Nuance Recognizer 11 ASR Server Controller.
03-June-2020	Removed migration setup from "Before you begin" in PureConnect Speech Solution Installation. Most, if not all, customers have already migrated from CIC 2.4/3.0 to a later release.