

MiCollab Advanced Messaging 23.2

Automatic Speech Recognition

Administration Guide

For version 23.2 and above

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Contents

Preface	5
References	5
Documentation	5
Documentation Updates	6
Help	6
Document Conventions	6
Frequently Used Terms	7
What is Automatic Speech Recognition?	8
Automatic Speech Recognition Features	8
How Automatic Speech Recognition Works	8
Licensing Requirements	9
Installing TTS and Speech Software	11
Implementing Speech in Subscriber Mailboxes	12
Enabling the Speech Recognition User Interface (VUI) in Subscriber Mailboxes	13
Adding a Speech Alias to the Subscriber's Name	14
Name Confirmation	16
Testing Name Recognition	16
Adding a TTS Name to a Subscriber Mailbox	16
Implementing ASR in Auto Attendant	18
Speech Commands	18
Directory	19
The Add Speech Command Dialog Box	20
Administering Speech Commands in the Speech Tab	20
Administering Speech Commands in Call Processor Mailboxes	22
Associating Speech Commands with Action Types	24
Group Management	25
Administering Group Types	26
Configuring the Group Types-Priority	29
Administering Groups	30
Troubleshooting and Modifying the Speech Application	36

Modifying Call Processor Mailboxes for ASR	36
Modifying ASR Confidence Levels in the Speech Tab	39
Running Call Progress	39
Rebuilding and Re-synchronizing System Grammar	40

Preface

This guide explains how to administer MiCollab AM Automatic Speech Recognition (ASR).

This guide is written for Mitel-certified administrators and technicians who are familiar with MiCollab Advanced Messaging (MiCollab AM) procedures and terminology and the MiCollab AM **Admin** utility.

Before implementing any procedures in this guide, ensure that MiCollab AM software is installed and running successfully.

References

A catalog of technical documentation is included on the MiCollab AM Installation Media. If you are installing any advanced applications, such as Networking and Fax Server applications, you should refer to the appropriate technical documentation for application and installation information.

Documentation

The technical documentation is produced in the PDF format and requires the PDF reader to view it. The MiCollab AM Documentation Library includes the following documents and resources:

- **Administration Documentation.** Available as a PDF only. Contains the following:
 - **Administration Guides.** Available as a PDF only. Contains administrative guides for administrators about how to manage and configure the messaging system.
 - **Quick Reference Cards (QRC).** Contains shortcuts and quick instructions telling subscribers how to access and use the messaging system.
 - **User Guides.** Available as a PDF only. Contains user guides for subscribers about accessing the messaging system and checking and sending messages.
- **Server Documentation.** Available as a PDF only. Contains the following:
 - **Developer Resources.** Contains programming guides and API references for developers for integrating the server clients and web applications with MiCollab AM.
 - **Installation and Configuration.** Available as a PDF only. Contains installation and configuration guides for server administrators about how to install and configure the messaging system.
 - **Integration Technical Notes (ITN).** Contains a set of guides that describe the integration methods and instructions for a variety of phone systems to work with MiCollab AM. The ITNs are generally used by resellers or administrators who are experienced with MiCollab AM and familiar with the integration procedures and terminology.
 - **Spare Parts Documentation.** Contains a set of guides that describe the instructions for installing and configuring hardware parts to work with MiCollab AM. These documents are

written for Mitel-certified MiCollab AM technicians who are experienced with MiCollab AM and familiar with the procedures and terminology.

- **Software Release Notice (SRN).** This notice introduces the new features, capabilities, and hardware/software requirements for the corresponding MiCollab AM version.

Documentation Updates

Documentation updates may be available from the following sources:

- Mitel-certified technicians can view or download documents and program files from our partner web site: www.mitel.com

Help

The primary source of information about MiCollab AM is the online help available within any of its administrative utilities. You can access **Help** by clicking the **Help** button in the dialog box or window in which you are working.

Document Conventions

The following conventions are used in this document:

- **Key Names.** Names of keys on the keyboard are shown in a box.

Example: **Enter**

When two keys must be pressed simultaneously, they are joined by a + sign.

Example: **Alt** + **Tab**

- **Reference to Document** Titles of other documents are shown in italics.

Example: See the *System Installation and Configuration Guide*.

- **User Interface (UI) Element Names.** Names of UI elements such as dialog boxes, windows, screens, menu items, tabs, buttons, and icons are shown in bold.

Example: On the **Startup** screen, click the **Start** icon.

- **User Input.** Information required to be typed is shown in italics.

Example: Type the password *voicemail*.

- **Warning, Caution, Important, and Notes.** Text for the contents that require attention are shown as follows:

WARNING A warning paragraph advises you of circumstances that can result in the loss of data, harm to the MiCollab AM System Server platform, or personal harm.

CAUTION Failure to follow these recommendations can result in unauthorized access to the system and consequent loss of data.

IMPORTANT An important paragraph gives decision-making information or informs you of the order in which tasks need to be completed.

NOTE A note gives additional information, provides an explanation, or indicates an exception to the information in the preceding text.

For more related documents, refer to the following list of references:

Table 1. References

Document Type	Document Title
Quick Reference Card	Voice User Interface (VUI) Quick Reference Card
Server Documentation	<i>System Installation and Configuration Guide</i>
Administration Documentation	<i>System Administration Guide</i>
Online help	MiCollab AM online help system

Frequently Used Terms

Table 2. Frequently Used Terms

Terms	Description
System Server	<p>Term refers to an organization's computer platform(s) that have MiCollab AM software installed and handles the core system functions such as storing messages, database.</p> <p>It can also refer generically to the System Server platform, the Call Server platform, or both. The term is most often used to describe a software or hardware installation or configuration practice where the role of the server platform is not specifically expressed.</p>
Call Server	<p>Term refers to an organization's computer platforms that have MiCollab AM software installed and serve as the interface to the system (PBX). The Call Server(s) interface with the System Server for the purpose of accessing messages, and database.</p>

What is Automatic Speech Recognition?

The Automatic Speech Recognition (ASR) capability of MiCollab AM provides the Speech enabled automated attendant and Voice User Interface (VUI) features that allow callers to navigate through the automated attendant and the Subscriber mailbox features of MiCollab AM using speech commands. ASR simplifies the use of MiCollab AM and enables other features that are impractical using DTMF input. The use of speech commands allows callers to interact with MiCollab AM hands free through the VUI.

Automatic Speech Recognition Features

Subscribers - Speech commands provide the capabilities of the traditional Telephone User Interface (TUI) for subscribers and enhance the usability of new features within the Subscriber mailbox. Subscribers can log on to their mailboxes using speech commands to manage their availability, messages, calls, calendars, and contacts. ASR allows callers to use the find me/follow me feature of the Subscriber mailbox to locate or leave messages for subscribers hands free, simply by speaking their names.

Automated Attendant - Speech enabled automated attendant is based on Call Processor mailbox architecture. Speech commands are created based on the application and used within the Call Processor mailbox to perform the same action types as DTMF commands.

Directory - The Speech Directory enables callers to locate and transfer to subscribers by speaking the name of the subscriber. These names are referenced from Subscriber mailbox name fields and aliases. Custom directories are created based on Group affiliations of subscribers.

How Automatic Speech Recognition Works

With Automatic Speech Recognition enabled, subscribers can log on to their Subscriber mailbox and navigate the features of their mailbox through the use of the Voice User Interface (VUI). Subscribers using the VUI can revert to the TUI in situations where the VUI is impractical, such as locations with high background noise.

The ASR enabled features of the Call Processor mailbox enable you to create unlimited application possibilities for call processing and automated attendant functions. The directory function allows callers to simply speak the name of the subscriber they are calling to be transferred to them.

A wide variety of alternate command names for the system commands are built in to allow flexibility in how and what users say to initiate a command. Administrators can add alternate phrases and alias names to create the same flexibility with the speech commands they program into the system.

Advanced capabilities of ASR include:

- The ability to adapt to noisy environments
- The ability to handle disambiguation when similar names or identical names exist in directories

Licensing Requirements

Automatic Speech Recognition (ASR) requires per port licensing. In other words, the number of licenses enabled on the feature key is the number of ports that can perform ASR at any given time. Licensing is dynamic in that any port in the system can perform ASR, providing a license is available.

A Text to Speech and a Speech Recognition license is required for every port that provides Speech capability. For example, if you have a 4-port system with two ASR and two Text to Speech (TTS) licenses, the system is limited to two callers having Speech capabilities at any given time regardless of which port answers the call.

IMPORTANT Automatic Speech Recognition is a licensed feature of Mitel. You must purchase the appropriate licensing from before you can use the speech features. Licenses are allocated within the system on a per-port basis. A caller can use the feature only if there is a license currently available. If you license MiCollab AM for fewer Speech Recognition licenses than the total number of ports, you must enable the application for both Speech and DTMF commands. Callers accessing the system in a Speech enabled only application cannot access Speech commands unless an available licensed resource is available. The number of ASR and TTS languages available on a system depends on how that system is licensed.

Additionally, for subscribers to appear in a speech directory they must be allocated a Directory User License.

NOTE The number of languages allowed for selection depends on the corresponding feature values. Feature #6 "TTS Languages" is the number of allowed TTS languages that can be selected for use. Feature #7 "ASR Languages" is the number of allowed ASR languages that can be selected for use. If MiCollab AM is deployed as a hosted solution in the cloud, only the system administrator can verify the server's license.

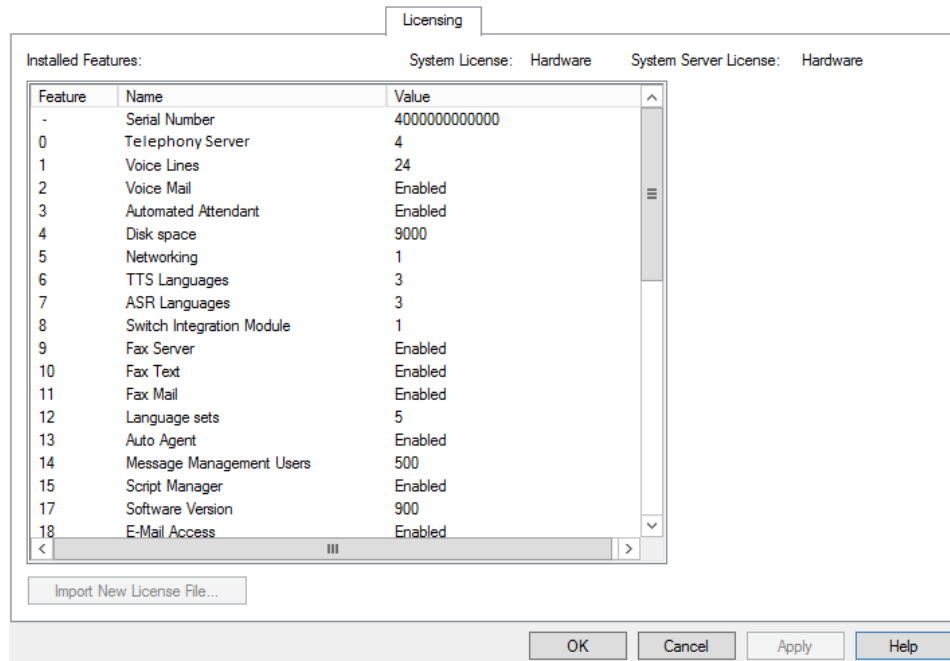


Figure 1. Licensing Tab

Installing TTS and Speech Software

You must install the **MiCollab AM ASR/TTS Resources** software on your MiCollab AM servers. The ASR and TTS components must be installed prior to installing MiCollab AM Server software.

For information about installing the MiCollab AM ASR/TTS Resources software, see the section titled *Installing TTS and Speech Software* in the *System Installation and Configuration Guide*.

Implementing Speech in Subscriber Mailboxes

Subscriber mailboxes must have the Allow Name Recognition feature enabled and the subscriber must be configured to participate within each directory before the automated attendant directory or the subscriber directory can recognize the subscriber's name; the Directory cannot locate a name if it cannot recognize it. You must also enable the Allow Name Recognition feature for subscribers using the VUI to log on, to enable name recognition, to address messages and to address meeting requests. In each of these instances, subscribers are prompted to speak their name.

NOTES Allow Name Recognition is enabled by default on new Subscriber mailboxes when the Speech Recognition feature is installed.

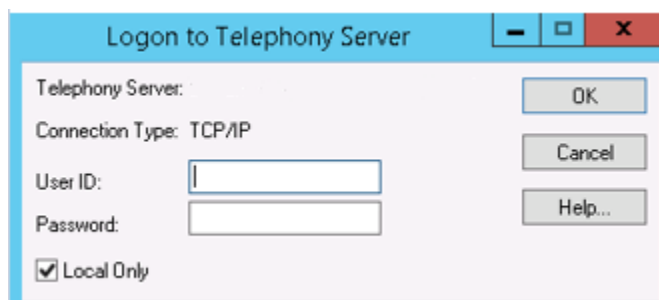
A Directory User License must be allocated and the appropriate directory setting must be enabled before a user may appear in a directory.

Use MiCollab AM **Admin** to administer all mailboxes as well as the system configuration. You must have the administrator privileges to manage mailboxes and the system configuration. If MiCollab AM is deployed as a hosted solution in the cloud, the server administrator should keep track of the **Initial Administrator User ID** assigned to the tenant.

NOTE If MiCollab AM is deployed as a hosted solution in the cloud, the tenant administrator should perform the following steps.

To log on to MiCollab AM Admin:

- 1 From the MiCollab AM server platform, select **Start > All Programs > MiCollab AM Desktop > MiCollab AM Admin**.
- 2 At the **Logon to Telephony Server** dialog box, enter your administrator's User ID and Password, and then click **OK**.



To enable Allow Name Recognition in a Subscriber mailbox:

- 1 From the MiCollab AM Admin, open the Subscriber mailbox you want to edit. The Subscriber mailbox window displays the **Main** tab.

The screenshot shows the 'Subscriber Mailbox - Demonstration System' window. The 'Main' tab is selected. The window contains several sections: 'Mailbox Number' (input field), 'Extension' (Number, SMDI Prefix, Direct Dial, Switch, Section, Node), 'Subscriber Information' (First Name, Middle Name, Last Name, Display Name, TTS Name, E-mail), 'Speech Recognition Names' (Allow Name Recognition checkbox, Speech Alias... button), 'Important Public Numbers' (Company Mobile, Personal Mobile, Home Number, Remote Office), 'Member of Distribution Lists' (list box), 'Availability Processing' (Allow, Enable, Reset to Defaults..., Delete...), 'Security Code' (Security Code Required, Use Advanced Security Policy, Lockout, Force Security Code Reset, Allow Subscriber to Reset Security Code, Reset, Set..., Purge History buttons), 'Status' (Set to Default), 'Updated' (12/21/2015 3:18:13 PM), 'Class of Service' (input field), and 'Update Subscriber...' button. The 'Allow Name Recognition' checkbox is checked.

- 2 Select the **Allow Name Recognition** checkbox.
- 3 Click **OK**.

Enabling the Speech Recognition User Interface (VUI) in Subscriber Mailboxes

You must enable VUI access in Subscriber mailboxes before subscribers can use speech commands to navigate within their mailboxes. You have four categories to choose from in the Speech tab of the Subscriber mailbox.

- **None** – The Subscriber mailbox has no VUI capability enabled. This is the default setting. Subscribers with this setting use the TUI. (Configure TUI settings in the Presentation tab of the Subscriber mailbox.)
- **Subscriber Session** – Subscribers can use the VUI to access all of the Speech enabled features of the Subscriber mailbox. Subscribers with the VUI Type set to Subscriber Session can change availability settings as well as set availability overrides. Outside callers to this subscriber use the DTMF TUI. The DTMF Locate feature follows the current availability settings.
- **Call Completion** – Callers use the VUI outside caller interface to leave messages for the subscriber or access the Availability features of the subscriber's mailbox.
- **Full** – Subscribers have full permissions and access to all VUI features of the mailbox.
- Outside calls to this subscriber will use the DTMF TUI, but the DTMF Locate will follow the current availability settings.

Select the desired VUI option type for each subscriber. The number of subscriber's to allow VUI as well as what type of access, is dependent on the type of application, the number of subscribers, port size, and the number of ASR licenses in the system.

To set the VUI Type in a Subscriber mailbox:

- 1 Open the Subscriber mailbox you want to edit.
- 2 Click the Speech tab of the Subscriber mailbox. The Speech tab appears.

Subscriber Mailbox - Demonstration System - 1111

Main | Answering | E-mail | Features | Presentation | VIM | Recordings | **Speech** | Devices | SMS | Msg Notification | Msg Forwarding | Availability

VUI

☒ Allow VUI Type (Speech Recognition): Full

Culture: English - United States en-US

Subscriber Access

☐ Allow Callback

☐ Total Hands Free

Personal Assistant Features

☐ Allow Call Recording

☐ Allow Calendaring

☐ Whisper Call Waiting

☐ Record Missed Calls

☐ Confirm Contacts Before Dialing

Contacts

Refresh Mode: Disable

Store Location: Local

E-mail Signature

☒ Use Standard Company Signature

OK Cancel Help

- 3 From the VUI Type drop-down list, select which VUI type you want to enable for this subscriber.
- 4 Click **OK**.

Adding a Speech Alias to the Subscriber's Name

Nick names or alias names are assigned to the Subscriber mailbox using the Speech Alias button. For example, Bill, Will, and Billy are alias names for William. Callers can access the subscriber in the Directory by using the subscriber name or any alias name assigned. Alias names are also used to enter phonetically spelled names that more closely match the pronunciation of a subscriber's name. For example, the name "William Wise" is a good alias name for the subscriber, "William Wythes."

IMPORTANT Use caution when creating speech aliases. Avoid one-word names like Bill or Will, and use first and last names when possible. Avoid using too many speech aliases; a large number of similar speech aliases (for example, phonetic names) diminish speech recognition capability because there are too many similar possibilities.

To add a Speech Alias name in a Subscriber mailbox:

- 1 Open the Subscriber mailbox you want to edit. The Subscriber mailbox window displays the **Main** tab.

The screenshot shows the 'Main' tab of a Subscriber mailbox configuration window. The window has a menu bar with tabs: Main, Answering, E-mail, Features, Presentation, VIM, Recordings, Speech, Devices, SMS, Msg Notification, Msg Forwarding, and Availability. The 'Main' tab is active. The form is divided into several sections:

- Mailbox Number:** 1888
- Extension:** Number: 1888, SMDI Prefix: (empty), Direct Dial: (empty), Switch: (empty), Section: Asterisk Asterisk Section (dropdown), Node: (empty)
- Subscriber Information:** First Name: (empty), Middle Name: (empty), Last Name: (empty), Display Name: SUBSCRIBER EXAMPLE, TTS Name: (empty), E-mail: (empty)
- Speech Recognition Names:** ☐ Allow Name Recognition, [Speech Alias...](#)
- Important Public Numbers:** Company Mobile: (empty), Personal Mobile: (empty), Home Number: (empty), Remote Office: (empty)
- Member of Distribution Lists:** (empty list box)
- Availability Processing:** ☐ Allow, ☐ Enable, [Reset to Defaults...](#), [Delete...](#), Availability COS: (empty)
- Enable Mailbox:** Yes (dropdown), ☐ Setup Tutorial Required, ☐ Propagate, ☐ Personal Assistant, Personal Assistant Available Licenses: 500
- Group Assignments:** (empty list box), [Group Assignments...](#)
- Security Code:** ☒ Security Code Required, ☐ Use Advanced Security Policy, ☐ Lock-out, ☐ Force Security Code Reset, ☒ Allow Subscriber to Reset Security Code, [Reset](#), [Set...](#), [Purge History](#)
- Status:** Set to Default, Updated: 12/1/2015 1:35:27 PM
- Class of Service:** 0600 MAIN SUBSCRIBER COS, [Update Subscriber...](#)
- [Reset Mailbox](#)

Buttons at the bottom: OK, Cancel, Help.

- 2 Click the **Speech Alias** button. The **Speech Aliases** dialog box appears.

The screenshot shows the 'Mailbox 1663 Speech Aliases' dialog box. It has a title bar with a close button. The main area contains a table with columns for different languages and regions:

Global	English - United States	English - United Kingdom	French - Canada	Spanish - United States
Robert Smith	Robert Smith	Robert Smith	Robert Smith	Robert Smith

Below the table is a section for 'Advanced properties (optional)':

- Alias: Robert Smith
- Prefer recording: ☐
- TTS name: Robert Smith

Buttons at the bottom: Test, OK, Cancel, Help.

- 3 Click in the Speech Alias matrix to add global or language-specific Speech Aliases. Entering a speech alias as Global will populate the language specific fields with the identical value.

NOTE Changing a particular field, like changing *Robert* in the Spanish column to *Roberto*, will reassign the value in the **Global** field to each remaining field.

Failing to put anything in a particular language column will result in the user appearing non-existent to callers using that language.

- 4 Click **OK**.

Name Confirmation

Name confirmation is an optional setting in a call processor and is used with directory actions. When a subscriber alias is recognized and confirmation is active, the system will play the recorded name of the subscriber – ‘you said - <recorded name or TTS>, is this correct?’

In some cases, when a specific alias is matched it may not be desirable to present the name associated with the recording. For these cases the administrator may clear the **Prefer recording** checkbox. This will instruct the system to use the TTS name of the alias in place of the recorded name.

Testing Name Recognition

Clicking the **Test** button brings up test functionality:

	Use mailbox recorded name		Confidence	
English - United States	<input type="checkbox"/>	Test	<input type="text"/>	Details
French - Canada	<input type="checkbox"/>	Test	<input type="text"/>	Details
Spanish - United States	<input type="checkbox"/>	Test	<input type="text"/>	Details

Testing allows you to assess how well an alias performs at recognition.

NOTE: Tests may take a long time to run on systems with many names in the directory. A copy of the entire directory is created to perform the recognition against all other entries.

- **Use mailbox recorded name** Check this box to use the recorded name associated with the associated language.
- **Record button** Click this to record a name to test against the associated language.
- **Play button** Click this to listen to either the existing recorded name or the name recorded using the record button.
- **Test button** Tests the recorded name against the alias and returns a confidence level.
- **Details button** Provides further details about ASR alias confidence for troubleshooting purposes.

Adding a TTS Name to a Subscriber Mailbox

TTS Names are used to speak the subscriber name when a subscriber has not recorded a name. When a directory search finds a Subscriber mailbox with a matching name, ASR searches for a name to playback to the caller in the following order:

- 1 Recorded name

- 2 TTS Name field
- 3 First Name, Last Name field
- 4 Display Name field

The search follows the list and plays the first one that exists. If the first name/last name is pronounced correctly by TTS, there is no need to add a TTS Name. The TTS name is used to phonetically alter the spelling to aid in the correct pronunciation of the name.

To add a TTS Name:

- 1 Open the Subscriber mailbox you want to edit. The Subscriber mailbox window displays the **Main** tab.

- 2 Enter the name in the **TTS Name** box.
- 3 Click **OK**.

Implementing ASR in Auto Attendant

You can initiate Call Processor action types using speech commands and create an entire automated attendant application using only speech commands. It is recommended that you create both a speech and DTMF driven automated attendant so callers have the option to use either the VUI or the TUI to navigate within the system.

You can add speech commands to the system from either the Call Processor mailbox or the **Speech** tab of MiCollab AM Admin. If multiple ASR languages are installed, you will see a tab at the bottom of the form for each language when the view is set to include speech. You may select any of the tabs to immediately see which commands are missing for that particular language.

NOTE Create a Call Processor for DTMF only commands, and then enter it into the [No ASR Call Processor](#) field of the Call Processor mailbox from which callers are accessing the automated attendant. If a speech resource is not available, callers are sent to this Call Processor mailbox.

IMPORTANT You must have a licensed speech resource available to use a speech command in the automated attendant.

Speech Commands

Speech commands are associated with action types of the Call Processor mailbox—callers speak a command to initiate a particular action. Use the instructional announcement of the Call Processor to offer a list of commands that the caller can use to navigate within the mailbox.

For example:

The instructional greeting might be, *"At any time during this greeting you can simply say the name of the person or the department you want to reach. For a list of options, say Options."*

Consider the following guidelines when creating a Call Processor's recorded announcement for speech commands.

- Use common terminology for commands.
- Avoid listing every command; instead, provide a command to get a menu list of spoken options.
- Avoid the use of homonyms in the same Call Processor. Homonyms are two or more words spelled and pronounced alike but which differ in meaning.
- Avoid words that are difficult to pronounce.

To increase the probability of speech commands being recognized and to improve the usability of the application:

- **Alternate Phrases** - Add alternate phrases to the command to enable callers to use other names or phrases to reach the same person or department. Alternate phrases allow callers to speak commands that are similar to the primary command. For example, the alternate phrase "Tech Support" can be associated with the command, "Technical Support."

You can combine some Call Processor Action types to use either DTMF or speech commands to invoke the same action. Do not combine action types if:

- Template characters are required to complete an action. Do not use template characters with speech commands. Actions using template characters require DTMF commands to perform the action.
- Directory - Do not combine the TUI Directory and the VUI Directory; they must be configured separately.

Refer to the *Automatic Speech Recognition* guide for more information about speech commands.

Directory

- Speech directories use the First Name, Last Name and Speech Alias name fields of the Subscriber mailbox to locate subscribers.
- Speech directories use the Name and Speech Alias name fields to locate Distribution List and Network mailboxes.
- The subscriber name or mailbox name is the speech command for the directory function. Provide instructions to callers answered by the automated attendant to speak the name of the person they are calling.
- The ASR directory function listens for the name of the requested subscriber and searches for the best matches among all the names and alias names. When it finds a match, the recorded name in the Subscriber mailbox is played to confirm a correct match, and the call is transferred or a messaging session is initiated.
- Automatic Speech Recognition has several default directories:
 - **Directory: All** – Searches all subscribers within the organization.
 - **Directory: Department - <Group Name>** – Searches all subscribers within the specified Group Name, in the group type Department. For example, Directory: Department - Sales. Sales is a group defined within the group type, Department. Particular subscribers are assigned to the group, Sales.
 - **Directory: Location - <Location Name>** – Searches all subscribers within a given location. For example, Directory: Location – New York. New York is a group defined within the group type, Location. Subscribers are a subset of the group, New York.

Create custom, departmental, and location directories by assigning the subscriber to various groups on the Main tab of the Subscriber mailbox to suit the requirements of the organization.

NOTE Group types, Department and Location are created by default in the standard database. You can delete these group types if desired and create your own group types, such as "Affiliations" or "Job Titles."

Important Considerations for the Speech Recognition Directory

- Only one type of directory is permitted per action in a Call Processor mailbox. If the application requires multiple speech directories, such as a department, location, or all employee, you must use separate actions within the Call Processor mailbox for each directory type.

- You must define a transfer action as the action type for the directory if you want callers to be transferred to the extension number found in the subscriber database. Use the transfer type suitable to the application.
- Do not use template characters or DTMF digits in the Arguments field. Leave it blank. The directory search matches the subscriber's "Speech Recognition Name" with the primary device of the associated mailbox for transfers.

The Add Speech Command Dialog Box

Use the **Add Speech Command** dialog box to add a speech command for an action.

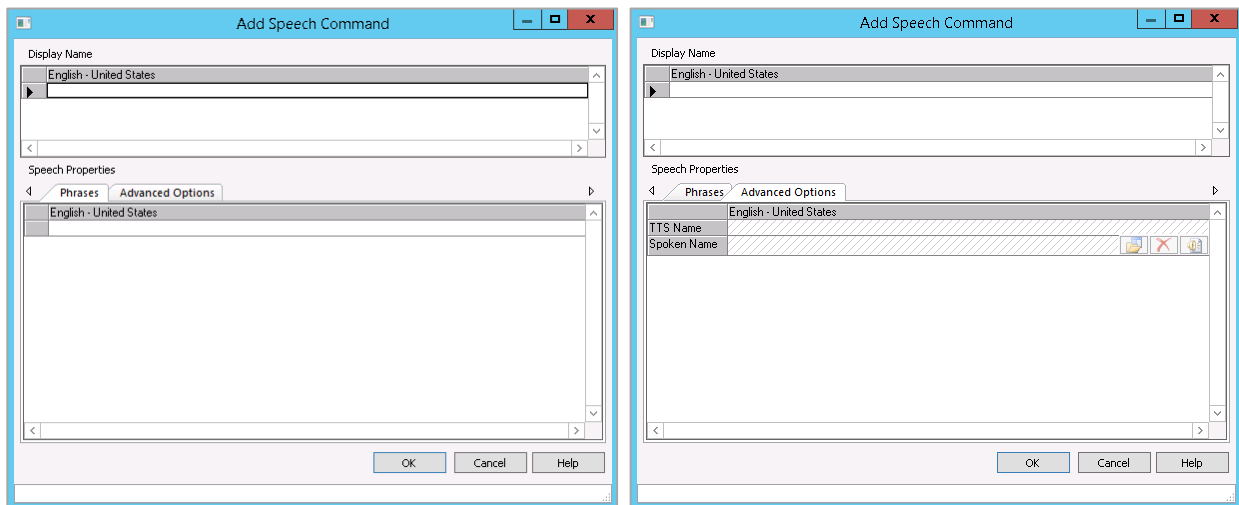


Figure 2. Add Speech Command Dialog Box

The text fields in this dialog box are:

Display Name – The default name or phrase of the command in each of the installed languages. A name or phrase has a maximum length of 45 characters.

Phrases – When a name is typed into the Name field, it also appears in the Phrases area. Add Alternative names and phrases here. Alternatives are names or phrases the caller might use to request the same service, department, or person as the primary name. For example, instead of saying "Technical Support" the caller might say "Tech Support" or "Support." Providing alternatives increases usability and makes the speech enabled Call Processor more friendly.

TTS Name (Advanced Options) – This is an optional field.

Spoken Name File (Advanced Options) - This is an optional field.

Administering Speech Commands in the Speech Tab

Administer Speech commands from the in Speech tab of MiCollab AM Admin. From the Speech tab you can:

- Add, Edit, or Delete speech commands

- Add additional phrases or alias names
- Add TTS Names
- Associate commands with pre-recorded speech files.

To add a Speech Command:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration > System**, and then click the **Speech** tab. The Speech tab appears.
- 2 Click the **Add** button. The **Add Speech Command** dialog box appears.

Global	English - United States	Spanish - United States	French - Canada

Test Ok Cancel

- 3 Click in the Speech Alias matrix to add global or language-specific Speech Aliases. Entering a speech alias as Global will populate specific fields with the identical value. Changing a particular field, like changing Robert in the Spanish column to Roberto, will reassign the value in the Global field to each remaining field.

NOTE Please note that failing to put anything in a particular language column will result in the user appearing non-existent to callers using that language.

Clicking the **Test** button brings up test functionality.

	Use mailbox recorded name	Record	Test	Confidence	Details
English - United States	<input type="checkbox"/>				Details
French - Canada	<input type="checkbox"/>				Details
Spanish - United States	<input type="checkbox"/>				Details

- **Use mailbox recorded name** Check this box to use the recorded name associated with the associated language. Record button Click this to record a name to test against the associated language.
- **Play button** Click this to listen to either the existing recorded name or the name recorded using the record button.
- **Test button** Tests the recorded name against the alias and returns a confidence level.
- **Details button** Provides further details about ASR alias confidence for troubleshooting purposes.

To edit a Speech Command:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration > System**, and then click the **Speech** tab. The Speech tab appears.

- 2 Highlight the command you want to edit, and then click **Edit**. The Edit Speech command dialog box appears.
- 3 The Edit Speech command dialog box appears. You can:
 - *Edit any Phrase*
 - *Add additional Phrases*
 - *Add or modify the TTS name*
 - *Add or modify the Spoken Name file*
- 4 Click **OK**.

To delete a Speech Command:

IMPORTANT You cannot delete a Speech command until you remove all references of the command from any Call Processor mailbox in which it is associated. In addition, users cannot remove speech commands for a group or group type. Those are automatically removed when their parent group or group type is removed.

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration** > **System**, and then click the **Speech** tab. The Speech tab appears.
- 2 Highlight the command you want to delete, and then click **Delete**.
- 3 Click **Yes** to confirm the deletion.
- 4 If a speech command is currently referenced in a Call Processor mailbox when you attempt to delete it, an error message displays. You must remove all references to the command prior to deletion.

Administering Speech Commands in Call Processor Mailboxes

Administer Speech commands from Call Processor mailboxes in much the same way as you manage them in the Speech tab. Because speech commands are associated with action types in the Call Processor mailbox to build applications, adding or deleting speech commands in the Call Processor mailbox is practical and efficient.

To change the Call Processor Actions View:

- 1 From MiCollab AM Admin, open the Call Processor mailbox number you want to edit.
- 2 From the View drop-down list, select the view you want to display. You can administer speech commands from the Condensed, Speech Only, or Combined view of the Call Processor.

Number: 0000

Sponsor:

Language: Default

Max Msg Length (sec): 2700

Timeout (sec): 2

Max No Match Retries: 4

Max Mismatch Retries: 0

☒ Use Speech Recognition Timeout Rules

☐ Log System Port Usage

☒ Two-Part Greeting

☒ Use Answer Mode Operator

☐ Always Confirm Names

Name: DAY MAIN MENU

Next Call Processor

CP:

☐ Go To Answer Mode

Switch

Section: Asterisk Asterisk Section

Node:

No ASR Call Processor

CP:

Call Processor Actions

View: Combined Add Edit Delete

Key / Event	Action	Arguments	Speech Command
Speech	Blind Transfer	0	Customer Service
Speech	Blind Transfer		Directory: All
*	Hangup		Goodbye
Speech	Go To Call Processor	0300	Help
Speech	Go To Call Processor	0000	Main Menu
0	Blind Transfer	0	Operator
Speech	Go To Call Processor	0300	Options

English - United States

To add a Speech Command:

- 1 In the Call Processor Action area of the Call Processor mailbox, click **Add**. A new row is inserted and highlighted.

Call Processor Actions

View: Combined Add Edit Delete

Key / Event	Action	Arguments	Speech Command
Speech	Blind Transfer	0	servicio de atención al cliente
Speech	Blind Transfer		Directory: All
*	Hangup		Goodbye
Speech	Go To Call Processor	0300	Help
Speech	Go To Call Processor	0000	Main Menu
0	Blind Transfer	0	Operator
Speech	Go To Call Processor	0300	Options

English - United States Spanish - Spain

- 2 Click the highlighted Speech Command cell, and then click the drop-down box. The Speech Command list displays.

Call Processor Actions

View: Combined Add Edit Delete

Key / Event	Action	Arguments	Speech Command
Speech	Blind Transfer	0	Customer Service
Speech	Blind Transfer		Directory: All
*	Hangup		Goodbye
Speech	Go To Call Processor	0300	Help
Speech	Go To Call Processor	0000	Main Menu
0	Blind Transfer	0	Operator
Speech	Go To Call Processor	0300	Options

English - United States

Customer Service

- Add New Speech Command -

Customer Service

Goodbye

Help

Main Menu

Operator

Options

Repeat

Sales

User Logon

Directory: Department

Directory: Location

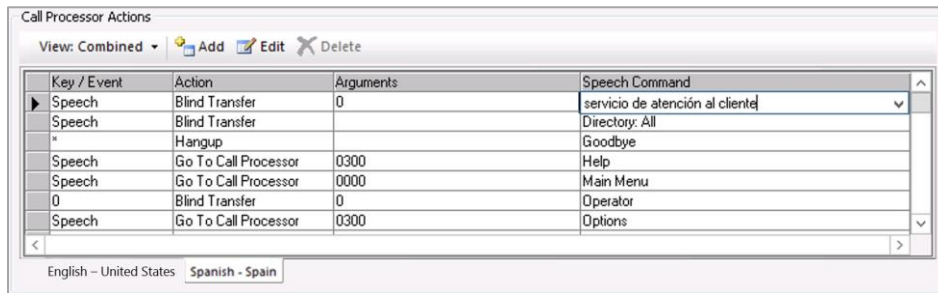
Directory: All

- 3 Click the line, **Add New Speech Command**. The Add Call Processor Speech Command dialog box appears.

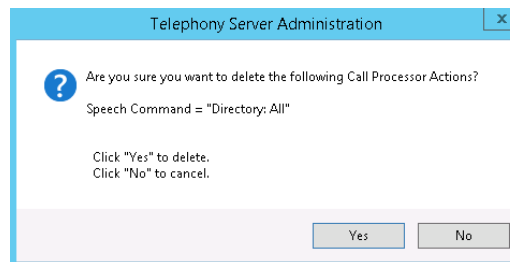
To delete a Speech Command from a Call Processor mailbox:

NOTE You must remove all speech command references in Call Processor mailboxes before you can delete the speech command on the Speech tab of MiCollab AM Admin. Deleting commands from the Call Processor mailbox only removes them from the mailbox.

- 1 Highlight the command you want to delete, and then click **Delete**.



- 2 Click **Yes** to confirm the deletion.



Associating Speech Commands with Action Types

Speech commands perform many of the same Action types as DTMF commands. It is permissible to combine DTMF and speech commands with some Call Processor action types to invoke the same action.

Important Considerations for using Call Processor Action Types

- Use separate action types for speech commands and DTMF commands if template characters are required. Do not use template characters with speech commands.
- Use separate action types for speech directory commands and DTMF directory commands.
- Leave the Arguments field blank (empty) on any speech command action type that references the extension number of a Subscriber mailbox. This includes the following action types:
 - All transfer action types; blind, confirmed, monitor, transfer
 - The Subscriber Message action type
- The Speech Directory command must have a transfer action or Subscriber Message action to complete the command. However, the Argument field must be blank. It uses the primary device number of the Subscriber mailbox to initiate the action.

Group Management

Group Management is a feature that enables administrators to assign subscribers to individual groups. Use these group identities to locate individuals through specific speech directory searches such as location, department, floor, or any other sub-group pertaining to the organization. Subscribers assigned to multiple groups are located through any directory in which they belong.

Use Groups to:

- *Identify subscribers for administrative tracking purposes*
- *Define subsets of subscribers for directory purposes*
- *Disambiguation - Disambiguation helps to identify and disambiguate users with the same or similar names. For example, if two users have the same names, John Smith, MiCollab AM announces both subscriber names during a Directory search. If the subscribers belong to two different groups such as Sales and Engineering, MiCollab AM responds back that multiple names are found, and then asks the caller to choose between John Smith in Engineering or John Smith in Sales.*

Assign subscribers to a group in each Group Type that is relevant to the subscriber. Assigning each subscriber to multiple groups improves the ability to locate individuals or departments in a variety of different methods. There are three default Group Types in the system: Location, Department, and Faculty.

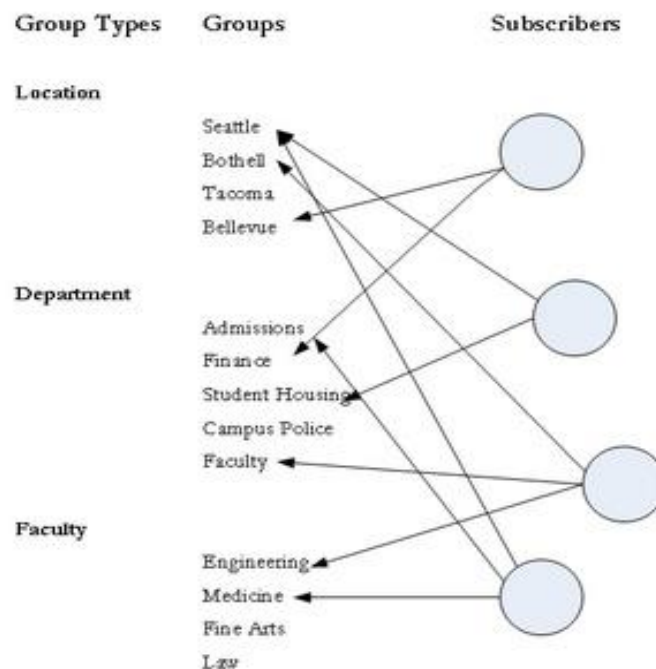


Figure 3. Group Type Management

Create and administer Groups from the Group Management tab of MiCollab AM Admin. Group Types are an all-encompassing category in which Groups are nested. You can add subscribers to groups on this tab or assign subscribers to groups from the Main tab of the Subscriber mailbox.

Subscribers are automatically included in the Directory: All, when you enable the Automated Attendant Directory feature on the Features tab of the Subscriber mailbox. Subscriber must also have the Allow Name Recognition to search for the subscriber name in the speech directory.

Speech commands are created automatically by default for each Group Type Name and Group Name you add to Location and Department speech commands are both added to the system by default. The name must be unique in each language to ensure disambiguation.

Administering Group Types

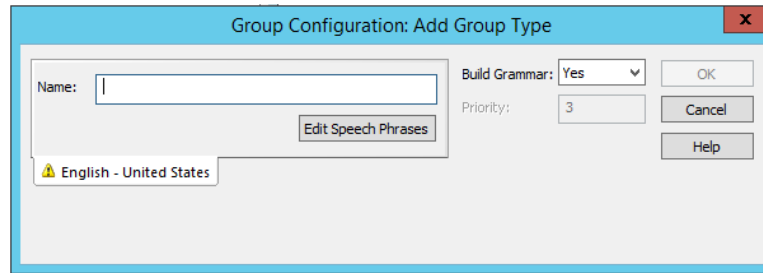
Create a Group Type to be the hierarchal group in which to create groups. For example, the Group Type Faculty has a host of groups consisting of individual faculty departments for the entire school or university. Groups assigned to this Group Type might be Engineering, Law, Medicine, Fine Arts, etc.

To add a Group Type:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration** > **System**, and then click the **Group Management** tab. The **Group Management** tab appears.

Name	Priority	Build Grammar
Department	1	Yes
Location	2	Yes

- 2 In the **Group Types** area, click the **Add** button. The **Group Configuration: Add Group Type** text box appears.



Group Configuration: Add Group Type

Name:

Build Grammar: Yes

Priority: 3

English - United States

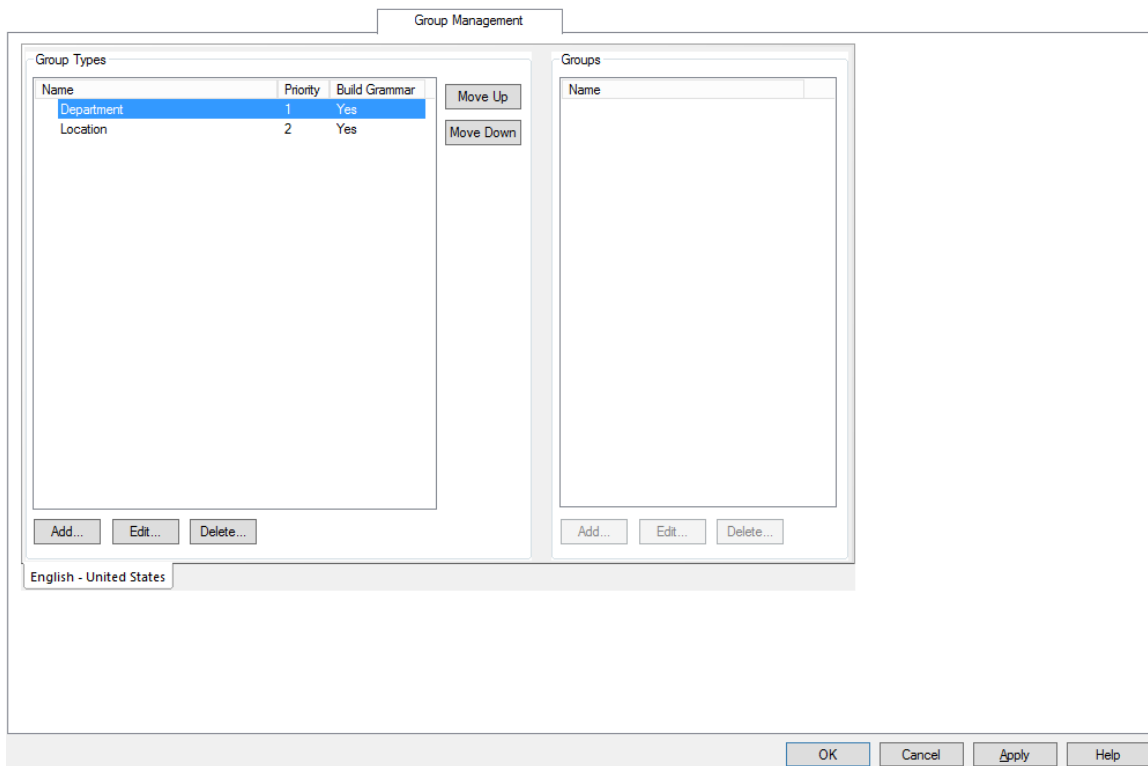
- 3 Type a new Group Type name.

To have the system add the speech command for Faculty to the system grammar file, leave **Yes** selected in the **Build Grammar** field.

- 4 Click **OK**.

To edit a Group Type:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration** > **System**, and then click the **Group Management** tab. The **Group Management** tab appears.



Group Management

Group Types

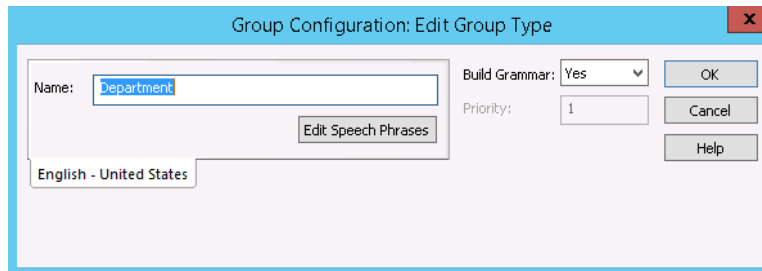
Name	Priority	Build Grammar
Department	1	Yes
Location	2	Yes

English - United States

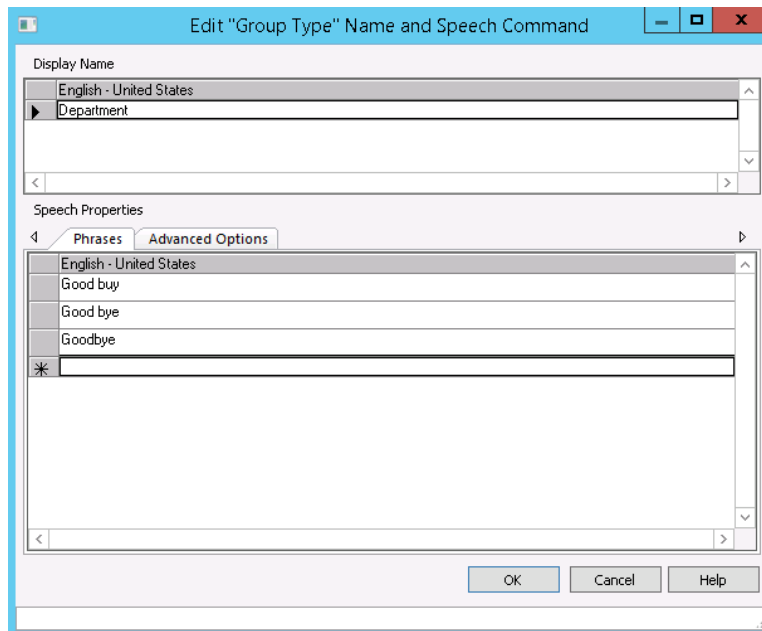
Groups

Name

- 2 In the **Group Types** area click the **Edit** button. The **Group Configuration: Edit Group Type** dialog box appears.



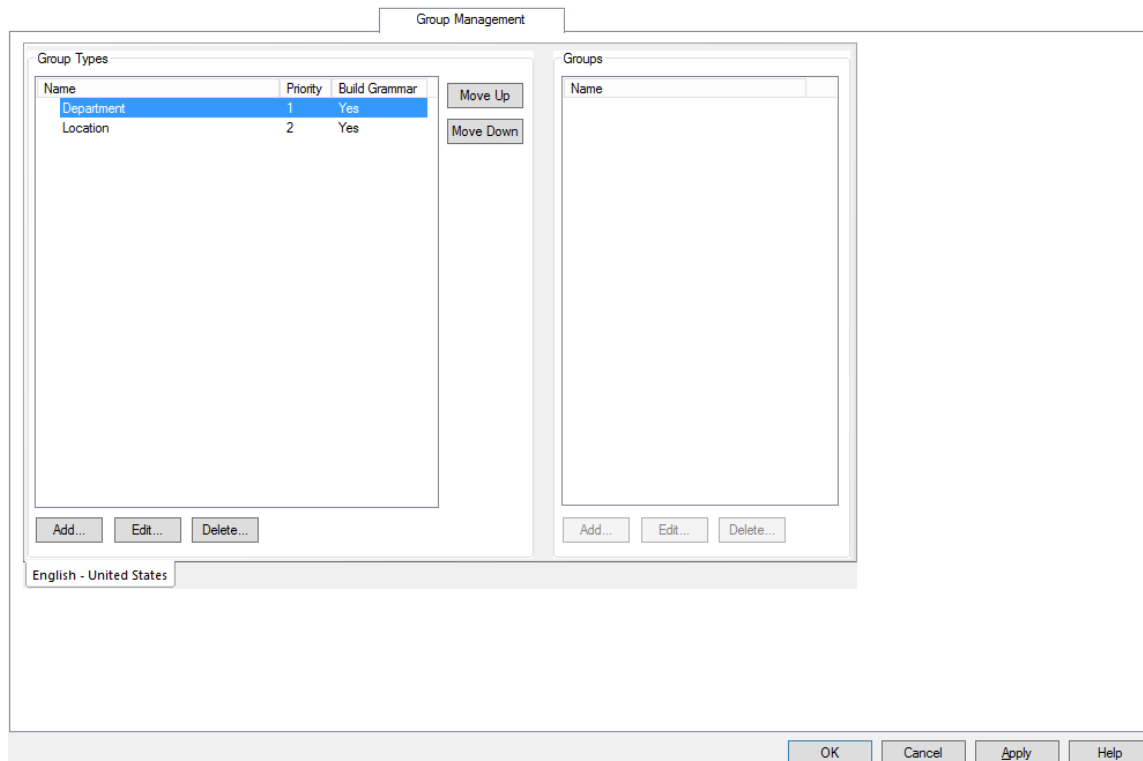
- 3 Edit the **Name** field.
- 4 Click **Edit Speech Phrases** to add an alternate Phrase, TTS Name, or Spoken Name File. The **Edit Speech Command** dialog box appears.



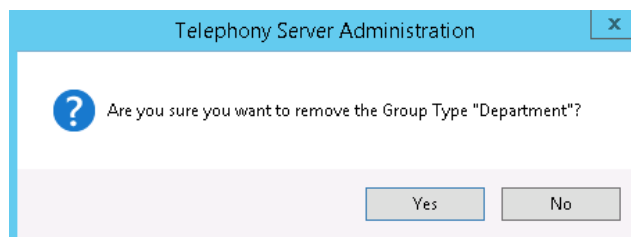
- 5 Enter the name or alias in the column for the desired language.
- 6 Type an alternate phrase, and then click **OK**.

To delete a Group Type:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration > System**, and then click the **Group Management** tab. The **Group Management** tab appears.



- 2 In the **Group Types** area, highlight the Group Type you want to delete, and then click **Delete**.
- 3 Click **Yes** to confirm the deletion.



- 4 If a Group is associated with the Group Type when you attempt to delete it, this message appears. You must remove all groups associated with this group type prior to deletion.

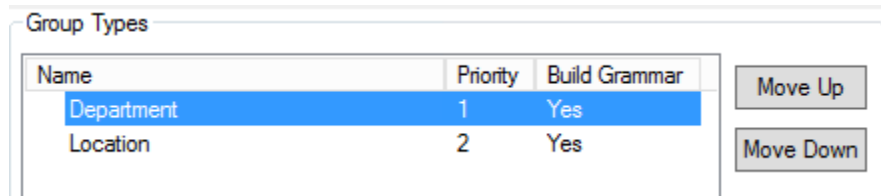
IMPORTANT Group Types cannot be deleted until all related Groups have been removed and references of the associated speech command are removed from any Call Processor mailbox, Group Type, or Group in which it is used.

Configuring the Group Types-Priority

Group Type Priority allows you to set the priority for each group type. You prioritize groups by precedence, for disambiguation purposes. During a speech directory search for a requested subscriber or department who is a member of multiple group types, the directory search is performed according to the priority of the group type. In this example, a subscriber name assigned to three group types is located according to group type priority, first by department, followed by location, and then finally faculty.

To change the Priority of a Group Type:

- 1 Select the **Group Type** you want to change the priority of, and then use the **Move Up** or **Move Down** buttons to re-arrange the search priority.
 - Each click of the **Move Up** button increases the priority.
 - Each click of the **Move Down** button decreases the priority.



Administering Groups

Subscribers are members of groups and groups are subsets of group types. You assign subscribers to specific groups, which are nested within specific group types. Multiple groups may be assigned to one group type. Create as many relevant groups as you need for the application. For example, a subscriber may be a member of the Engineering Group in the Department Group Type, as well as a member of the Boston Group in the Location Group Type, and the Architecture Group in the Faculty Group Type.

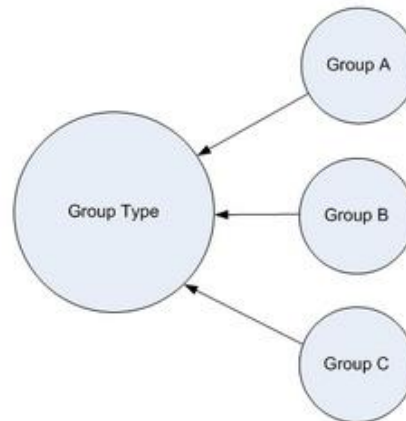
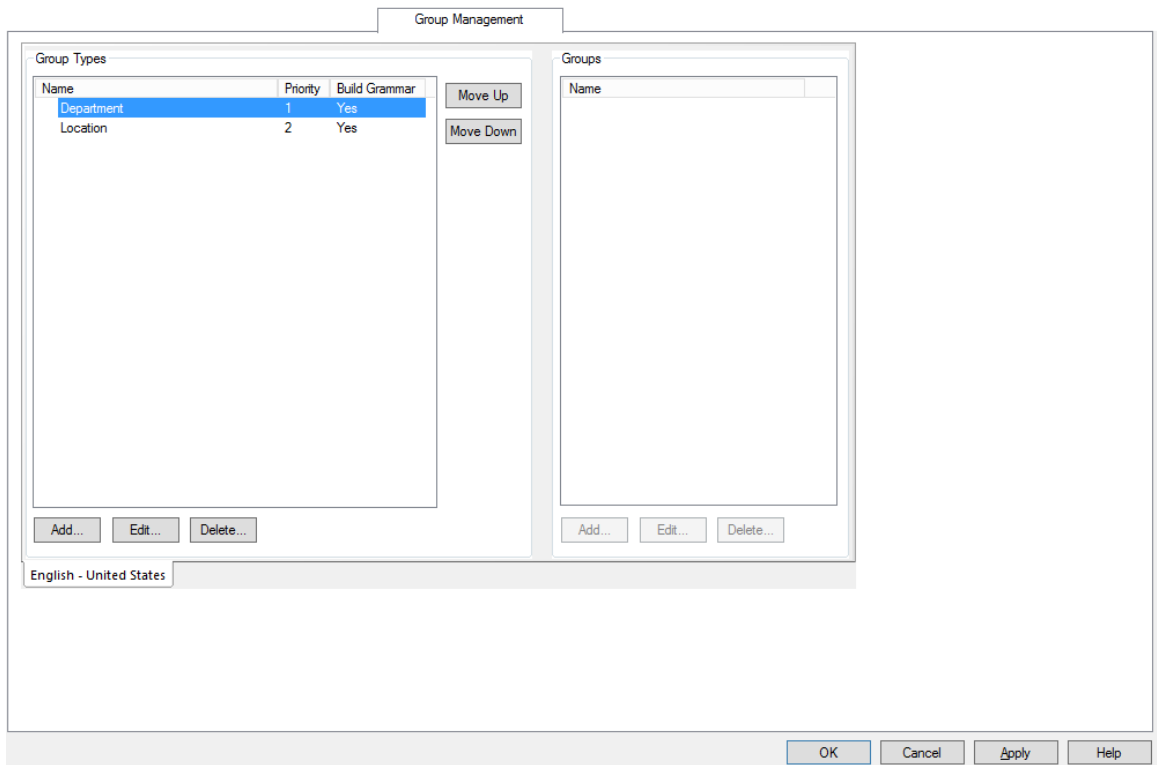


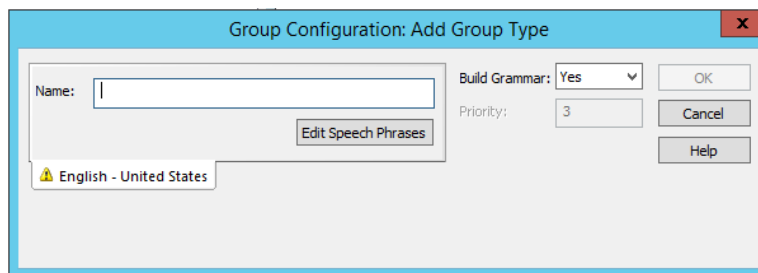
Figure 4. Group Type

To create a Group:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration** > **System**, and then click the **Group Management** tab. The **Group Management** tab appears.



- 2 Highlight a Group Type for which you want to add a group from the **Groups Types** list.
- 3 Click the **Add** button in the Groups area. The **Group Configuration: Add Group** dialog box appears.



- 4 Type a name for the group in the **Name** field.
- 5 Highlight a Subscriber mailbox or group of subscriber mailboxes to add to the new group, and then click **Add**. The subscribers are added to the new group.

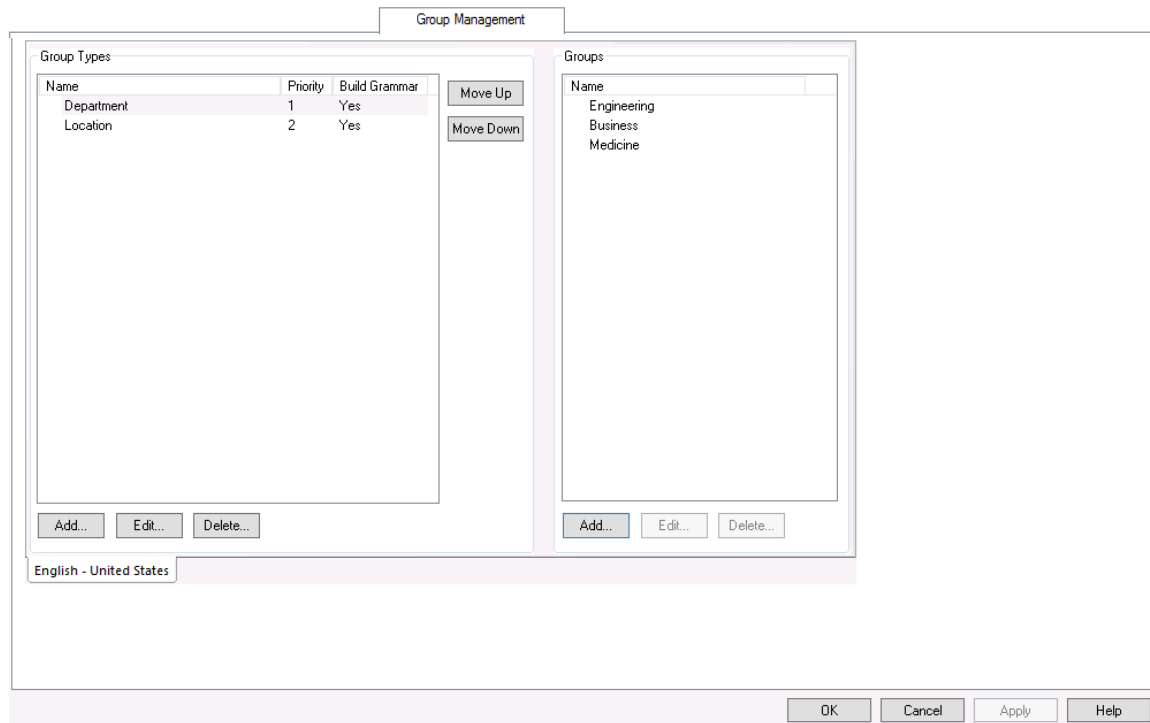
Use the following search options to find mailbox members you want to add to the group.

- Use the Mailbox IDs fields to specify a range of mailboxes to highlight.
- Use the **Display Name** field to find a specific mailbox, and then click **Search** to find any subscribers matching the display name.
- To remove subscribers from a Group, highlight the mailbox or mailboxes in the **Selected Mailbox Members** list, and then click **Remove**.

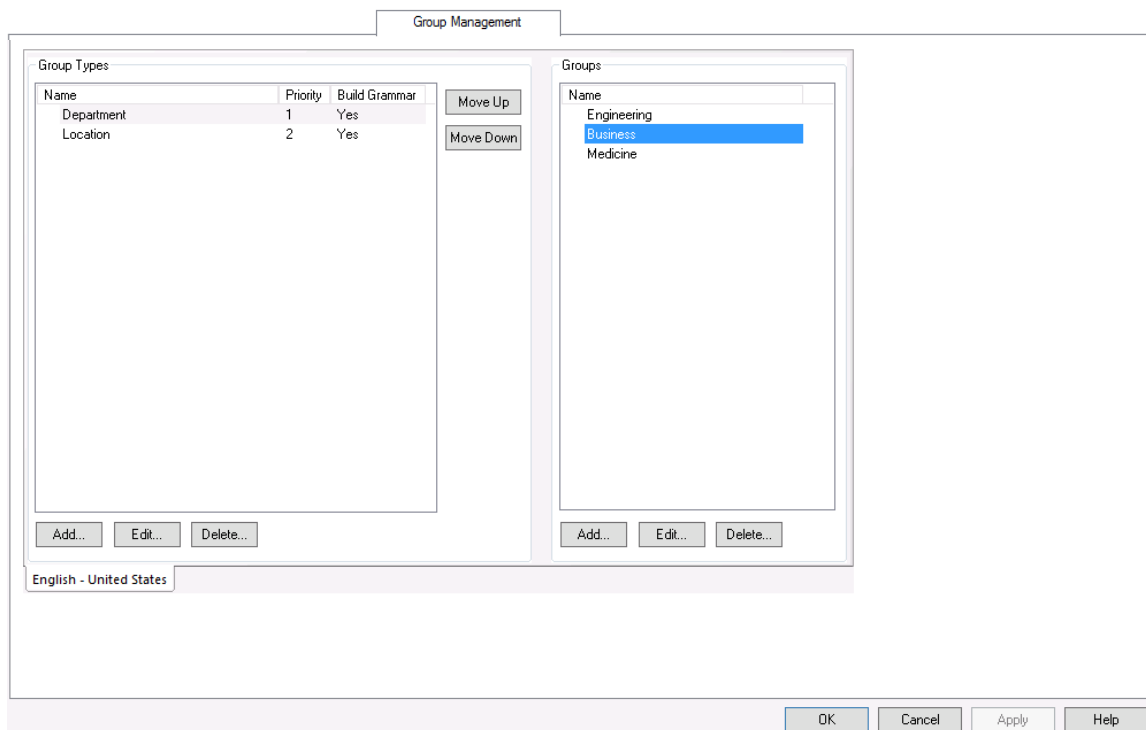
6 Click **OK**.

To edit a Group:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration** > **System**, and then click the **Group Management** tab. The **Group Management** tab appears.



- 2 Highlight the **Group Type** for which you want to edit a group. The list of groups for the highlighted group type displays in the **Groups** list.
- 3 Highlight the **Group** you want to edit, and then click **Edit**.



- 4 The **Group Configuration: Edit Group** dialog box appears. Edit the group name, add or remove Subscriber mailboxes as necessary.

Group Configuration: Edit Group

Name: Business

Edit Speech Phrases

OK Cancel Help

English - United States

Available Mailboxes:

Mailboxes

- Subscriber
 - 1888 SUBSCRIBER EXAMPLE
 - 1999 NIGHT MESSAGE DROP
 - 9999 AUDIO ADMINISTRATOR

Add >> << Remove

Selected Mailbox Members:

Mailbox	Name
1888	SUBSCRIBER EXAMPLE
9999	AUDIO ADMINISTRATOR

Mailbox IDs: -

Display Name:

Maximum Results: 50

Search Next Set

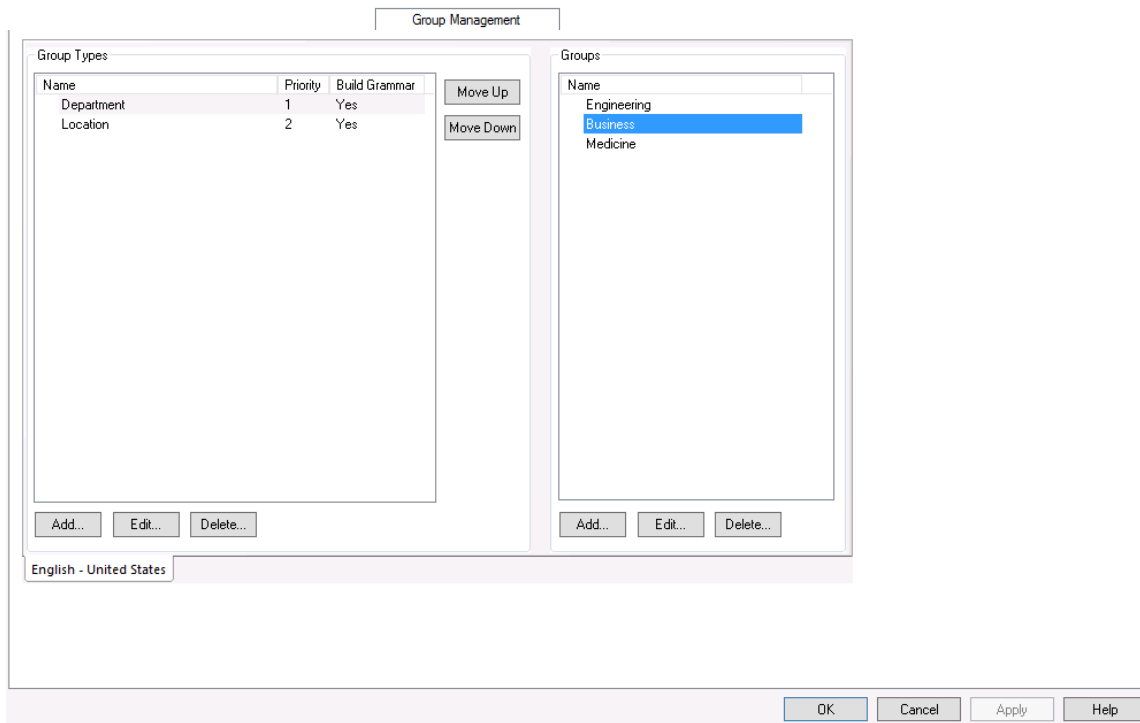
Reset Search

Mailbox Search found 3 mailboxes.

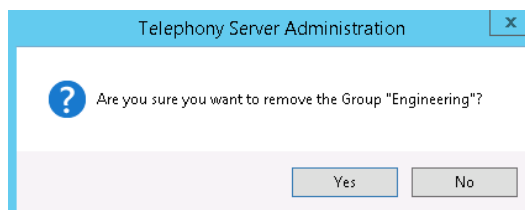
5 Click **OK**.

To delete a Group:

- 1 From the menu bar of MiCollab AM Admin, Select **Configuration** > **System**, and then click the **Group Management** tab. The **Group Management** tab appears.
- 2 Highlight the **Group Type** for which you want to edit a group. The list of Groups for the highlighted group type displays in the **Groups** list.
- 3 Highlight the **Group** you want to edit, and then click **Delete**.



- 4 Click **Yes**, to confirm that you want to delete the group.



- 5 Click **OK**.

Troubleshooting and Modifying the Speech Application

Once you have implemented ASR in MiCollab AM, users have started to use the new features of the VUI, and callers are using speech commands to navigate through the automated attendant, you may need to rectify some speech related issues. The following information provides some tips on improving speech recognition and enhancing your speech application.

Subscriber Training and User Guides - Subscribers may have problems remembering the VUI commands for their mailboxes at first.

Be sure subscribers have all of the related user guides and Quick Reference Cards they need to help themselves learn the speech interface. Group training sessions are helpful, as are webinars and discussions.

Alias Names - Create alias names for your audio menu commands. Callers often hear something other than what the audio menu instructs and often times they use a command they believe is correct, rather than the command they are instructed to use.

Additional Phrases - When commands have recognition problems due to their pronunciation, add alternate phrases with phonetically spelled versions of the command. Some modification of the spelling may be necessary before it is recognized and spoken correctly.

Multi-Language Support - When more than one ASR language is installed make sure you have a name/command defined in each language or a feature may work in one language but not the other.

IMPORTANT Avoid using too many speech aliases and alternate phrases; a large number of similar aliases and phrases diminish speech recognition capability because there are too many similar possibilities.

Modifying Call Processor Mailboxes for ASR

Configure Call Processor mailboxes for ASR and provide an out for callers unable to use the ASR feature. Use the following Speech related parameters of Call Processor mailboxes to improve the ASR experience for callers using the automated attendant.

Number: 0000

Sponsor:

Language: Default

Max Msg Length (sec): 2700

Timeout (sec): 2

Max No Match Retries: 4

Max Mismatch Retries: 0

☒ Use Speech Recognition Timeout Rules

☐ Log System Port Usage

☒ Two-Part Greeting

☒ Use Answer Mode Operator

☐ Always Confirm Names

Call Processor Actions

View: Combined Add Edit Delete

Key / Event	Action	Arguments	Speech Command
Speech	Blind Transfer	0	Customer Service
Speech	Blind Transfer		Directory: All
*	Hangup		Goodbye
Speech	Go To Call Processor	0300	Help
Speech	Go To Call Processor	0000	Main Menu
0	Blind Transfer	0	Operator
Speech	Go To Call Processor	0300	Options

English - United States

OK Cancel View References... Help...

Figure 5. Call Processor Mailbox

Max No Match Retries - This parameter triggers the Final No Match Key/Event of the Call Processor. The system counts the number of consecutive attempts the system tries to match a speech command with the caller's spoken request and is unsuccessful.

Once the maximum number of retries is exceeded, the Final No Match action Key/Event action initiates. The accepted values for this parameter are 0–9.

- A value of 0 suppresses the system prompt that indicates the system did not recognize what the caller said, and then immediately initiates the Final No Match action when defined.
- A value of 1 is the same as 0 except that a system prompt is played to advise the caller of a missed recognition, and then immediately initiates the Final No Match action when defined.

Max MisMatch Retries - This parameter triggers the Final MisMatch Key/Event action of the Call Processor. The system counts the number of times a caller is presented with confirmation dialogue and the number of consecutive times the caller rejects the recognition result, while in the same Call Processor.

When the number of consecutive declined confirmation attempts equals the Max MisMatch Retries value, the Final Mismatch Recognition action initiates. The Max MisMatch Retries counter is ignored if this value is set to 0, the default. The accepted values for this parameter are 0, disabled and 1–9.

Always Confirm Names - When enabled, the system requires the caller to confirm the recognition match for any subscriber name. The result of the confirmation applies to the Final No Match Key/Event. If the caller does not confirm a match, the Final No Match action initiates. The feature is disabled by default.

NOTE This parameter applies only to Call Processor mailboxes that contain a Directory <DIR> speech command. The recognition result for a Call Processor may contain multiple values that match commands and directory entries. These results are presented to the caller with the highest confidence values listed first. If this value is a command then its associated action is invoked. When the first recognition result is from the directory and the confidence value is less than the configured name-confidence-threshold, the caller is asked to confirm the result. When the confirmation is declined by the caller the system retries the list from the top. The parameter does not constrain further recognition attempts to the directory command.

Use Speech Recognition Timeout – The Use Speech Recognition Timeout parameter defines how MiCollab AM treats a call when a speech command is not given. When this parameter is enabled, multiple timeouts can occur before going to the Final Timeout action of the Call Processor. When disabled, the traditional one timeout occurrence triggers the Final Timeout action.

When a caller is answered by a speech enabled Call Processor, the system plays the announcements and waits for an audio response. If no response is received, the system prompts the caller indicating that it did not hear anything and waits again for input. If the Use Speech Recognition Timeout Rules parameter is not enabled, the dialog exits and the Final Timeout event initiates.

If the systems detects audio but fails to recognize the input, the result is a failed recognition. The system prompts the caller that the command was not recognized. Once the dialog attempts for input are exhausted and the input is not recognized, the Final Timeout event initiates.

In a noisy environment the noise can trigger an immediate mis-rec (missed recognition). When two immediate mis-recs occur, the system switches in to hot word mode. The hot word mode response is slower to respond to the caller's request but accuracy improves in a noisy environment.

No ASR Call Processor CP - The No ASR Call Processor is also referred to as a No Speech Fallback Call Processor mailbox (NSFCP). When a Speech enabled Call Processor mailbox is unable to acquire an ASR Speech license it passes control to the defined Call Processor in this field, typically a Call Processor mailbox configured for DTMF initiated actions only. If a Call Processor is not defined in this field, the caller continues to use the current Call Processor. The caller has no ASR capability, however the caller can use the TUI interface to initiate any DTMF enabled action.

Key/Events

Final Mismatch – The Max No. Mismatch Speech parameter triggers the Final Mismatch event of the Call Processor mailbox. The system counts the number of consecutive times a caller is presented with confirmation dialogue and the number of times the caller rejects the recognition result, while in the same Call Processor. When the number of consecutive declined confirmation attempts equals the Max Mismatch Retries value, the Final Mismatch Recognition action initiates.

Final No Match - The Max No Match Retries parameter triggers the Final No Match event of the Call Processor mailbox. The system counts the number of attempts the system tries to match a speech command with the caller's spoken request. When the maximum number of attempts is exceeded, the Final No Match action Key/Event initiates.

The Final Mismatch and Final No Match Key/Events are speech related events. They display in the Combined, Condensed, and Speech View of the Call Processor Actions view.

Modifying ASR Confidence Levels in the Speech Tab

The default settings of the ASR Confidence levels in the Speech tab of MiCollab AM Admin are pre-configured for an ideal percentage in each parameter. Each parameter refers to speech recognition during a specific event.

For example, the parameters *Normal Conditions* and *In Noisy Conditions* refer to speech recognition in a normal condition and a noisy environment, respectively. Mitel recommends you try other methods described in this section to resolve any problems before changing the values of these parameters.

If you decide to change these values from their default settings, please note the default settings beforehand. Change the values in small increments at a time and test the related condition thoroughly before you continue.

The screenshot displays the 'Speech' tab in the MiCollab AM Admin interface. It is divided into two main sections: 'Speech Commands' on the left and 'ASR Confidence Levels (Percentages)' on the right.

Speech Commands: This section includes a list of commands categorized under 'Group types ...' (Department, Location) and 'Call processor actions ...' (Customer Service, Goodbye, Hardware, Help, Main Menu, Operator, Options, Repeat, Sales, User Logon). Below the list is a dropdown menu set to 'English - United States' and two buttons: 'Rebuild System Grammar' and 'Speech Commands Edit'.

ASR Confidence Levels (Percentages): This section contains several parameters with corresponding percentage values and up/down arrows for adjustment:

- Normal Commands:**
 - Normal Conditions: 25
 - In Noisy Conditions: 25
- Name Confirmation:**
 - Mailbox Names: 60
 - Contact Names: 70
- Commands during Accept Call dialogs:** 70
- Hotword Commands during Joined Calls:** 65

At the bottom right of the window are four buttons: 'OK', 'Cancel', 'Apply', and 'Help'.

Figure 6. Speech Tab

Running Call Progress

There are times when transfers to outside lines fail due to call progress issues. MiCollab AM may be unable to recognize call progress tones on the Publicly Switched Telephone Network (PSTN). It may be necessary to train call progress and create new ring patterns for each cellular provider to which MiCollab AM is attempting transfers. Refer to the online help topics on Call Progress for more information on training MiCollab AM for new call progress patterns.

Rebuilding and Re-synchronizing System Grammar

The System Server rebuilds the system grammar files each time a speech command is added to the system. The grammar files are synchronized with each Call Server in the system through the network via **Rebuild System Grammar** on the **Language** Tab.

Additionally, on Call Servers, a **Resynch System Grammar** button is on the **Language** tab of call servers that allows a user to resynch the Call Server system grammar without doing a full rebuild on the system server. This can sometimes solve issues caused in cases where updated grammar failed to propagate to a particular call server.