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GUIDE

Mitel Virtual Reception

CMG Speech Attendant Administration and Maintenance Guide

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Powering connections

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Contents

INTRODUCTION 1

This document describes the maintenance procedures for CMG Speech Attendant.

OVERVIEW 2

This chapter contains the following sections:

This section describes services and interfaces in CMG Speech Attendant.

2.1 SERVERS

A CMG Speech Attendant installation is built-up of the following components:

1. *One Main server* with the grammar compilation and log converter services, and the CMG Speech Attendant Analyzer tool.
2. *One or more ACS/Telephony servers* with ACS services, application dialogs and voice prompts.
3. *One ASR server* where Nuance software for speech recognition resides.

Since CMG Speech Attendant uses the CMG Speech database, a CMG Speech Main server always exists in the CMG Speech Attendant system. The CMG Speech Main server and CMG Speech Attendant Main server often reside on the same physical machine.

2.1.1 Services

This section lists and describes the CMG Speech Attendant related services.

- *Aastra CMG Speech Attendant ASR grammar compiler* This service creates the name and department grammars as scheduled.
- *Aastra CMG Speech Attendant Log Converter*

  This service converts Nuance logs into a format that can be analyzed by the CMG Speech Attendant analyzer.
- *Aastra CMG Speech Attendant Server*

  This service runs the main dialog engine and interprets ASR results.
- *Aastra CMG Speech TTS Generator*

  This service generates voice prompts for names and departments.
- *Nuance License Manager*

  NuanceLicensingService - Manages the Nuance licensing service.

- *Nuance Speech Server*

  This service controls Nuance software needed for speech recognition (the Nuance Recognizer).

> **Note**:
>
> Nuance Speech Server can take a long time when starting and stopping, since it controls the services listed above. If a problem occurs please consult the Nuance Speech logs.

2.1.2 SERVICE ACCOUNTS

All CMG Speech Attendant services must run in the windows account used by CMG Speech services This is because CMG Speech Attendant will need access to shares that may reside on a different server, e.g. to present names of persons and departments or to upload generated grammar files. This account is configured by the setup when CMG Speech Attendant is installed.

The Nuance Speech Server can run in the local system account.

The service account must have access to the following shares on the CMG Speech Main (program) server:

- **<CMGSpeech>\Voices\UserFiles** shared as **UserFiles**
- **<CMGSpeech>\Voices\Identifiers** shared as **Identifiers**

2.1.3 CMG SPEECH ATTENDANT MAIN SERVER

The following services run on the CMG Speech Attendant Main server:

- *Aastra CMG Speech Attendant ASR grammar compiler*
- *Aastra CMG Speech Attendant Log Converter*
- *Aastra CMG Speech TTS Generator*
- *Nuance License Manager* (can be installed on a separate server)

2.1.4 CMG SPEECH ATTENDANT TELEPHONY SERVER

The following services run on a CMG Speech Attendant ACS/Telephony server:

- *CMG Speech Attendant Server*

- ACS services:
  - *Mitel Network Telephony Services (NeTS)*
  - *Mitel Media Server*
  - *Mitel Queue Manager*

2.1.5 ASR SERVER

The following services run on a CMG Speech Attendant ASR server:

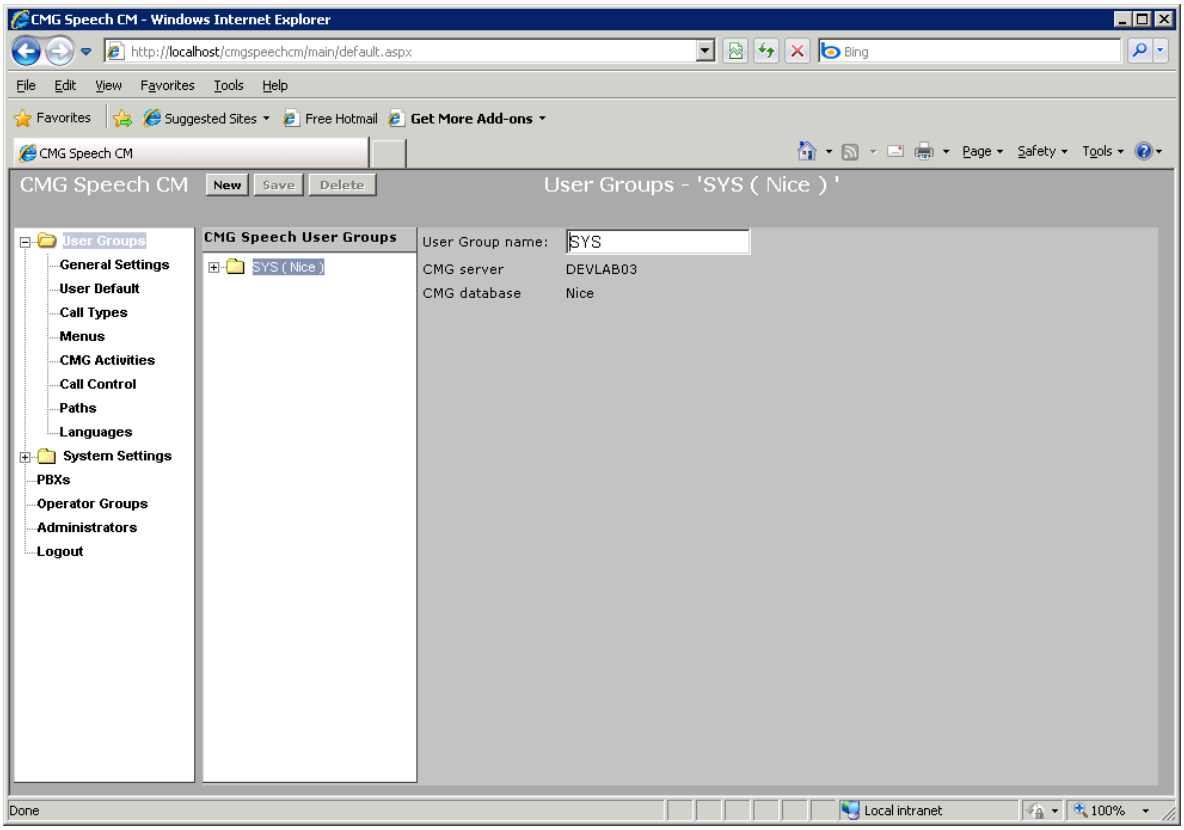
- *Nuance Speech Server*

ADMINISTRATION 3

CMG Speech Attendant is managed using CMG Speech Configuration Manager (SCM). To open SCM do the following:

- Type **http://localhost/CMGSpeechCM** in a web browser on the CMG Speech Main server.

For instructions on how to use SCM, see *CMG Speech Configuration Manager - Administrator's Guide [1].*



USEFUL TASKS 4

This chapter contains the following sections:

This section describes some useful maintenance tasks that are required at certain times.

4.1 REBUILDING THE DYNAMIC GRAMMAR

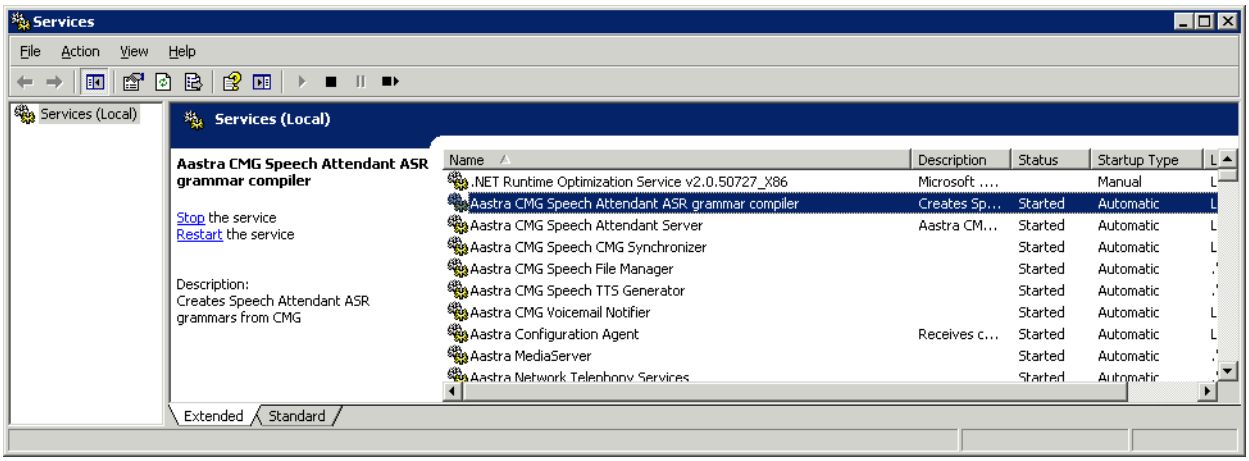
When a change has been made to the ASR dictionary the dynamic grammar must be rebuilt for the changes to take effect. A change can be, for example, that a new CMG Speech Attendant user has been enabled for CMG Speech Attendant search, or a new department has been configured with a name and number.

To rebuild the dynamic grammar, do the following:

1. Make sure that the ‘run_once_now’ parameter has been set to 'true' in the dgserver configuration, otherwise the dynamic grammar will not be rebuilt until scheduled. See section 8.2 for information.
2. On the CMG Speech Attendant Main server, open the **Services** panel.
3. Right-click **Aastra CMG Speech Attendant ASR grammar compiler** and select **Restart**.

   The CPU activity will decrease, wait until it has recovered.
4. Check the dynamic grammar log.

   For more information, see section 7.3.



4.2 ADDING CHARACTERS TO LANGUAGE TRANSLATION MAP

There are letters that exist in one alphabet, but not in others, for example the Swedish “ö” that has no direct equivalence in the English alphabet. A grammar for a language can only contain valid characters, so person names must be modified to suit the language in which the grammar is currently built. In addition to this, names can be mapped to nicknames, and departments and locations can append prepositions to the dynamic generated grammar.

This is defined using the `<charset>` and `<mapset>` elements in language specific XML files:

ELEMENT NAME	ATTRIBUTE NAME AND VALUE	DESCRIPTION
<mapset>	type="charmap” type="nicknamemap” type="location_map” type="department_map”	Used to map a foreign letter to a letter in a certain language Used to map a nick name to a real name Used to append prepositions to a location, for example, 'on' Used to append prepositions to departments, for example, ‘in’
<charset>	type="supported"	Used to define the letters allowed in a certain language

The language specific XML files are located in `<SpeechAttendant>\lang\data`. There is one file for each supported language, containing sets of values to, for example, replace character sequences in names to something adapted to the current language. See the following example for the eng.xml file:

```
<mapset type="charmap">
```

```
<equalsmap>

<pattern>æ</pattern>

<result>a</result>

</equalsmap>

<equalsmap>

<pattern>ø</pattern>

<result>o</result>

</equalsmap>

<equalsmap>

<pattern>@</pattern>

<result>at</result>

</equalsmap>

</mapset>
```

CMG Speech Attendant is pre-configured with the most common letters and their appropriate translation in different languages, but it is likely that there will be names containing characters that cannot be translated, especially in large organizations. Therefore, system administrators will probably at some point be modifying these files.

TROUBLESHOOTING 5

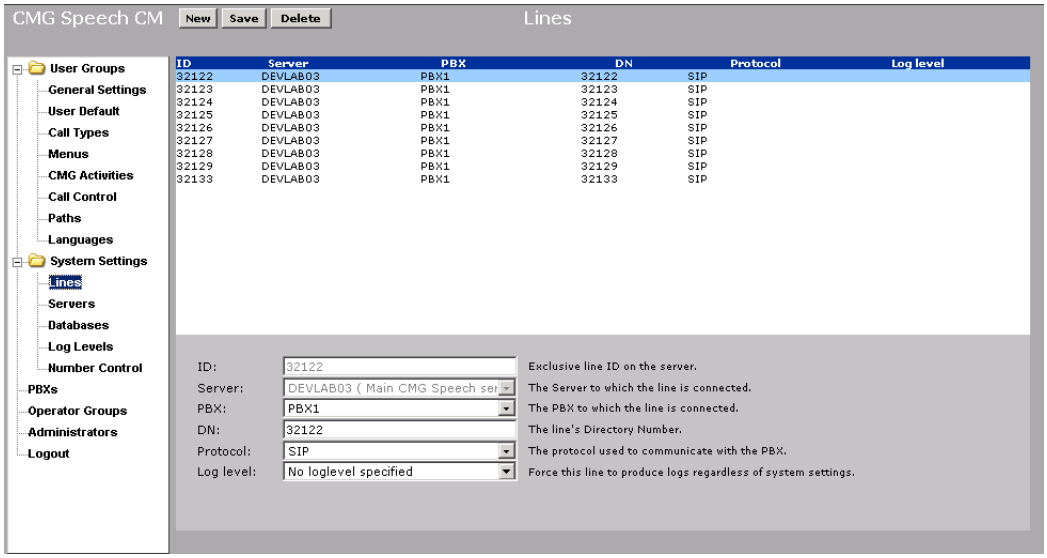
This chapter contains the following sections:

When CMG Speech Attendant receives a call, the application tries to find the user group associated with the CMG Speech Attendant access number. If no user group is found, or no line has been configured for the access number, the application will play a default error prompt, and then end the call. Do the following:

1. Check that there is a line for the access number:

   a. Use **CMG Speech CM** and browse to **System Settings -> Lines** in the left-hand menu.

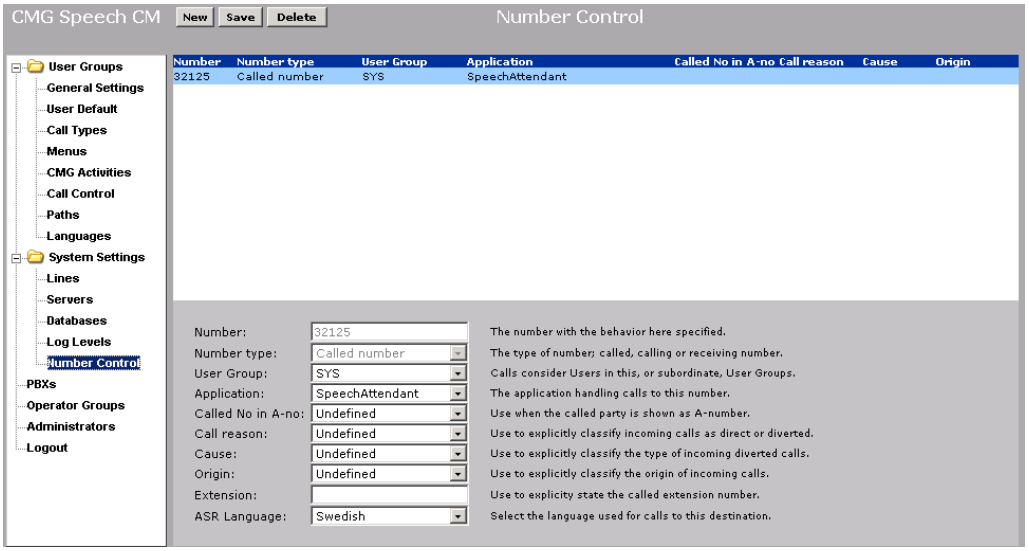
   b. Make sure there is a Line entry for the access number associated with the correct **PBX** and **protocol** (should have been done during installation).



2. Check that there is a number control entry for the CMG Speech Attendant access number:

a. Still in SCM, browse to System Settings -> Number Control

b. Make sure there is a number control entry with the SA access number as Called number, configured for application Speech Attendant, and an appointed User Group.



5.1 GRAMMAR GENERATION FAILS

Without existing grammars, CMG Speech Attendant does not work. Any failure to build grammars must be corrected before further troubleshooting can continue.

The ASR Grammar compiler is designed to only allow a certain set of characters, and omit any text with characters that are not supported. Therefore, you may see in the log that certain objects (e.g. locations, titles or departments or even persons) have been omitted from grammar due to invalid characters, but the grammar as such should NOT fail to be built.

If certain units are not included in the grammar because of invalid characters, you may replace those characters as described in section 4.2 and rebuild the dynamic grammar.

If the complete grammar generation fails, contact Mitel.

5.2 ONLY “WELCOME” IS PLAYED (GRAMMAR LOAD FAILS)

A complete grammar package is essential for CMG Speech Attendant. This comprises static grammar files, which are installed by the CMG Speech Attendant Grammar package on the ASR server, and dynamic grammars that are rebuilt regularly.

When CMG Speech Attendant receives a call, it determines a few basic facts – the User Group under which the call is handled, the calling User (if possible), which language should be used and which application should be launched (Name Dialer or Activity Manager). From this information, a grammar package is determined which CMG Speech Attendant will try to load.

If this load should fail, the application cannot continue. In this case, the system will play “Welcome” and then be silent. In this case, follow these steps:

1. First check which language CMG Speech Attendant tries to load. This is shown in the Nuance Speech Server logs on the ASR server. For the remaining steps, we assume this language is SVE (Swedish).
2. Make sure the dynamic grammars have been built for Swedish. Check the ASR Grammar compiler log on the CMG Speech Attendant Main server.
3. Make sure there are grammar files, suffixed by `.grxml`, that have been generated. They should exist in the `<CMGSpeechAtt>\bin\output\SVE` directory. If they do not exist, or if the grammar has not been built, rebuild the ASR grammar as described earlier.
4. Check the Grammar share on the ASR server. Here, too, there should be a directory named SVE.

    a. If there is no SVE directory, you must reinstall the CMG Speech Attendant Grammar pack on the ASR server (uninstall it and install it again, selecting the appropriate languages).
    b. If there is a SVE directory, but no `.grxml` files in it (only .gram files), this means that the dynamic grammar files have not yet been uploaded to the ASR server’s grammar share. This should be done by the ASR Grammar compiler service. If this service fails to upload the grammar files, it should be evident in the logs; if so, make sure that the Grammar share on the ASR server is shared to a certain windows account, and that the ASR Grammar compiler service is running under this account.

If all of this is OK but the grammar still fails to load, contact Mitel.

5.3 THE CALL IS NOT ANSWERED WITHIN SEVERAL SECONDS

When a call reaches CMG Speech Attendant, it will preload all grammar packages that will be used in the ASR server. This speeds up the recognition and definition of the grammars in all subsequent situations. On normal installations, this procedure is fast and takes no considerable time; you may notice a slight delay before the first call of the day is answered.

If the installation comprises very large, or very complex, grammars, the initial grammar load will take a very long time and in some cases proceed for too long so that the caller decides to hang up. If so, it is recommended to and tune and tweak the memory and cache settings of the Nuance software in ways recommended by Nuance, for example, enlarging the grammar cache.

If the problem persists, contact Mitel.

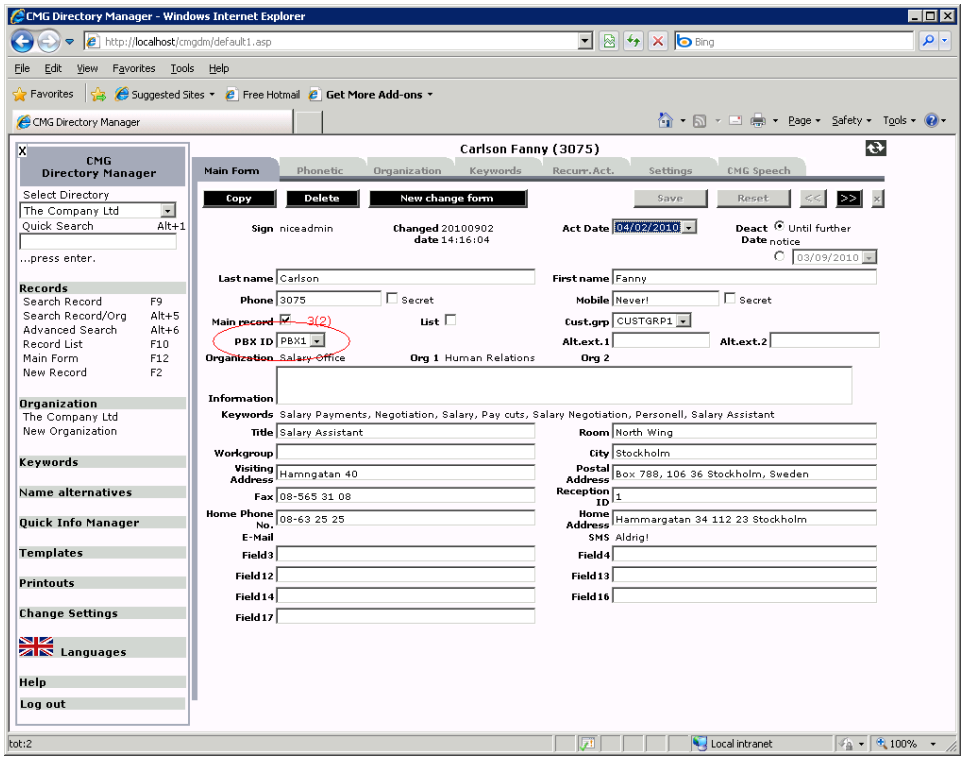
5.4 CMG SPEECH ATTENDANT FAILS TO RECOGNIZE A NAME

For CMG Speech Attendant to interpret a name correctly, the name uttered by the caller must exist in the speech recognition grammar. CMG Speech Attendant can only recognize names of users who have ASR enabled. All user groups have a default setting for this parameter, inherited by the user. The setting can be overridden for each user using **CMG DM.**

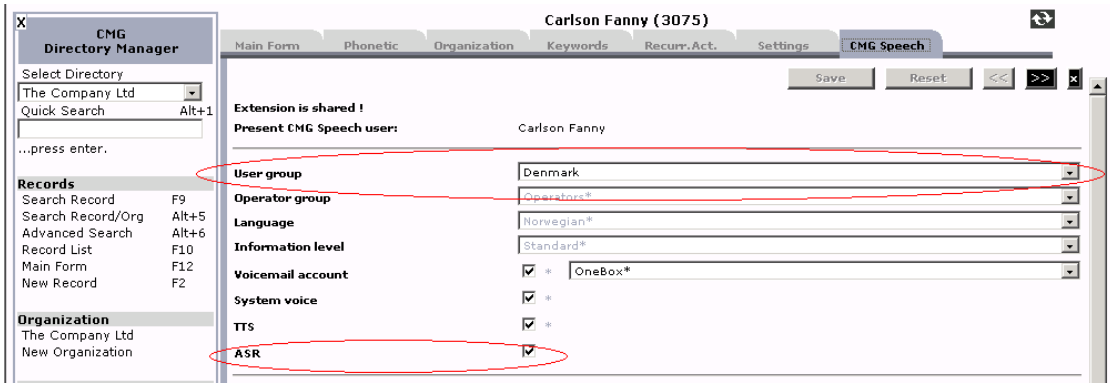
To check if a user is added to the CMG Speech Attendant directory, do the following:

1. Use **CMG Directory Manager**, log in and locate the user in question.

2. On the **Main Form,** make sure the user has a **PBX ID** configured. This is a requirement for the user to be considered by CMG Speech and CMG Speech Attendant software.



3. Click the CMG Speech tab.
4. Make sure the user has an appointed User Group and that the ASR check box is checked.



Note:

All changes to the contents of the ASR directory require the dynamic grammar to be rebuilt.

Even if all settings look correct, it is possible that the grammar builder cannot convert the person's name to a valid ASR expression in the current language. In this case, search the grammar builder log for entries containing the text **"excluded from grammar".**

Example: Using US English, a failed can be indicated by the following strings:

```
Excluded from grammar (ENU): pid <326>, fname 'Test 2' (=>''),
lname 'Kjellsson' (=>'kjellsson')

Attempt to convert grammar expression [sjûgren] => Unsupported
character in string: [û]
```

In the first example, the first name contains characters that are not valid letters ("2"). The name should probably be pronounced "test two". In the second example, an unsupported character has been detected. The solution is to add a valid character map for the language, as described in section 4.2.

Another way to understand why speech recognition failed is to use the CMG Speech Attendant Analyzer, a tool that is installed on the main server. For more information, see chapter 6.

5.5 MATCHES FOR SEVERAL PERSONS CAUSE CALLERS TO BE TRANSFERRED TO ATTENDANT

When there are several persons with the same name, CMG Speech Attendant will ask the caller to specify e.g. which department the requested person belongs to. Names with several matches are called ambiguous names and the process of finding the requested person from a list of possible matches is called *disambiguation.*

A requirement for disambiguation is that persons with ambiguous names belong to different departments or locations, or that they have a specified title (for example *'Doctor'*). If two or more persons have the same name and belong to the same department, and it is not possible to use disambiguation on locations or titles, the application will not be able to differ between the persons and the caller will be transferred to the operator.

CMG Speech Attendant supports disambiguation on departments, locations, and titles, whichever is possible.

Disambiguation on departments requires that the departments are speech enabled. This is done by adding organization names for voice controlled search for each department in question. This is done in the organization view in DM.

Disambiguation on locations requires that locations of people are entered in the Directory Manager **Main Form** in a dedicated field.

Disambiguation on title requires that titles for a user are entered in the DM Speech tab.

For more information see *Virtual Reception Installation and Configuration Guide [2] and CMG Directory Manager online documentation [3].*

5.6 NUANCE RESTART CAUSES A DELAY WHEN LOADING LARGE GRAMMARS

When the Nuance Speech server, or the machine where Nuance Recognizer is installed, is restarted Nuance Recognizer will not load the grammars. This will not happen until the first call has been placed, and might cause a delay before the call is answered due to that all grammar has to be loaded.

The time it takes to load the grammars depends on the size of the database (number of users in the system) and the number of supported languages (the more languages, the more grammar must be loaded).

If this problem occurs, it may help to tune the memory cache values for `server.cache.cacheEntryMaxSizeMB` and `server.cache.cacheTotalSizeMB` in `NSSserver.cfg`, or `swirec_memory_cache_size` in `baseline.xml`.

For more detailed information, see *Nuance Speech Server Installation and User's Guide [5].*

CMG SPEECH ATTENDANT ANALYZER 6

This chapter contains the following sections:

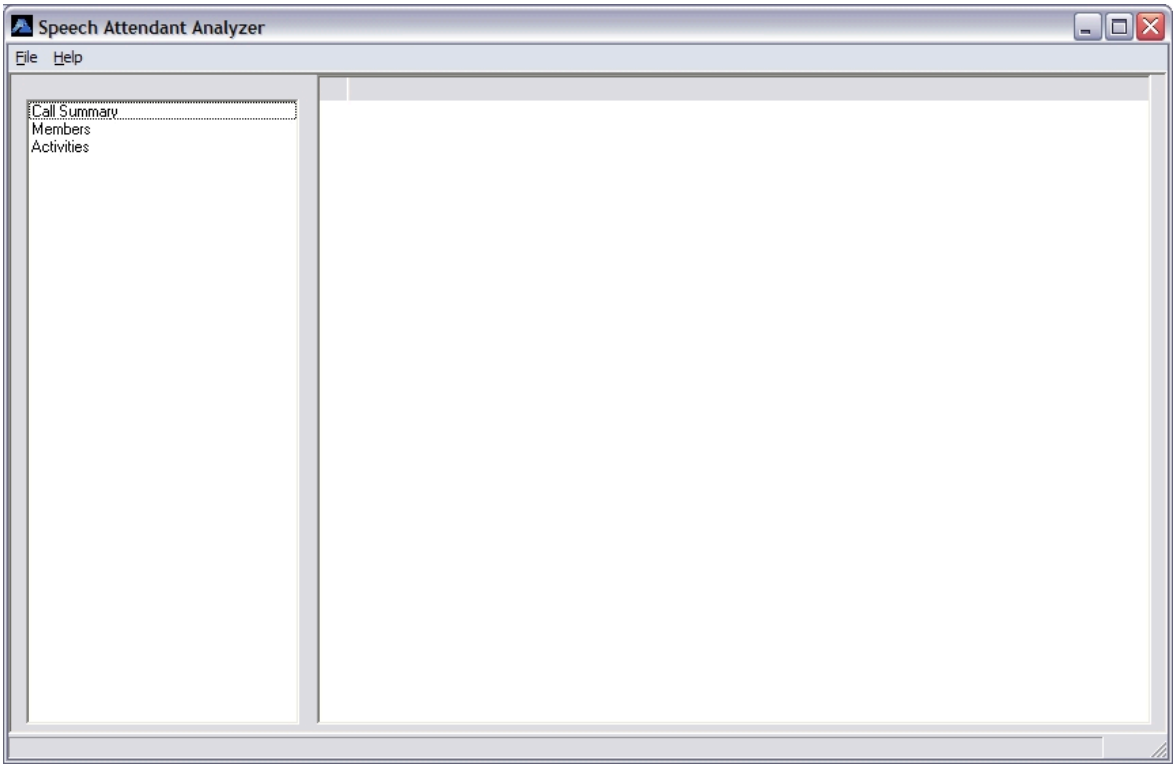
With CMG Speech Attendant Analyzer, the following can be done:

- Generate statistics on the CMG Speech Attendant system
- Listen to selected calls, which can be used as an input for ASR and tuning of prompts.

CMG Speech Attendant Analyzer is installed together with CMG Speech Attendant. There is no specific configuration for CMG Speech Attendant Analyzer. All configuration information (like, for example, database connection) is the same as for CMG Speech Attendant.

For more information see *Virtual Reception Installation and Configuration Guide [2].*

CMG Speech Attendant Analyzer does not generate any log information. The CMG Speech Attendant Analyzer is started from the installation folder. From the start page you can select to analyze call summary, members or activities:



6.1 SELECTING TIME RANGE FOR ANALYSIS

No matter if selecting to analyze **Call Summary, Members,** or **Activities,** you will be asked to select a time range.

Click one of the options, and then select a time range from the **Time Selection** dialog. Click **Use same time for all analysis** to have the same time range selected for all nodes.

Note:

All logging data is kept in a database table. Clean up of the database is done continuously. The clean up interval can be configured.

6.2 CALL SUMMARY

The node Call Summary displays overall information about the CMG Speech Attendant system.

To view call summary, do the following:

1. Click **Call Summary.**
2. Select **Time Range** if needed.

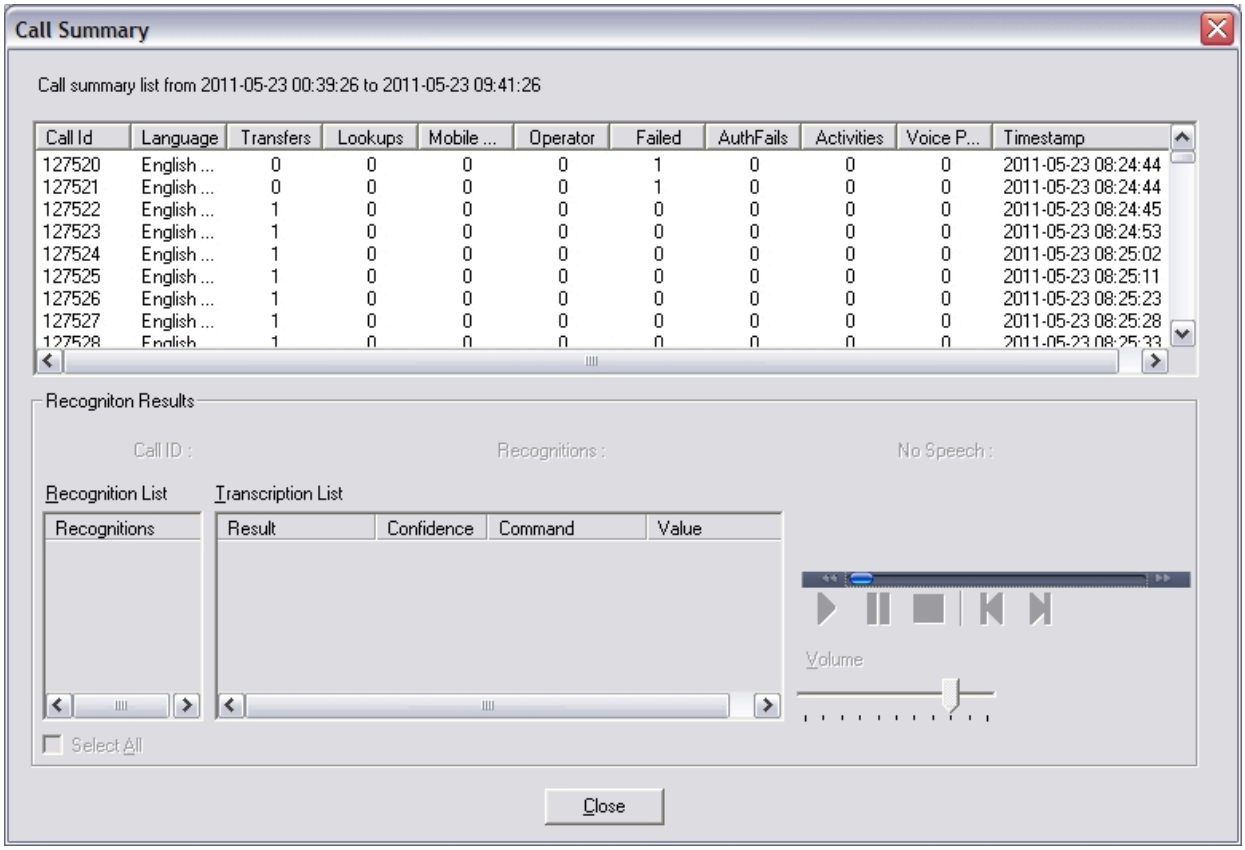
The selected call summary appears with its settings.

Table 1 Call Summary Settings

SETTINGS	Description
Total Calls	Total number of calls handled by CMG Speech Attendant during the selected time period
Operator Calls	Number of calls that went to operator
Operator on Error Calls	Currently not used
Failed Calls	Number of failed calls. A call is considered as failed if no recognition has succeeded, that is, CMG Speech Attendant has not been able to recognize anything. If CMG Speech Attendant has recognized something but the caller says “no” after a CMG Speech Attendant proposal, the call is not considered as failed.
Authentication Failed Calls	Currently not used.
Ringback Calls	Currently not used.

6.2.1 CALL LIST DETAILS

For any result in the call summary, detailed call list information can be viewed. Double-click on the call summary setting you wish to view details for, and a detailed call list appears. See the figure for an example of details for **Call Summary – Total Calls:**



Depending on the call summary setting selected, different details are displayed. From this window, it is possible to play and listen to a particular call.

Table 2 Call List for Total Calls

COLUMN NAMES	DESCRIPTION
Call ID	Contains the call ID.
Language	ASR language used in the call.

Transfers	Number of times that CMG Speech Attendant has recognized a “transfer request”. A transfer request is when a caller has asked for a transfer and a call can have several transfer requests. **Note**: This is **not** the number of times the caller was actually transferred to a user extension during the call.
Lookups	Number of user extension lookup that happened in the call.
Mobile lookups	Number of user mobile lookups that happened in the call.
Operator	Number of times that CMG Speech Attendant has recognized a “transfer request to operator”, that is, the caller has said 'operator'. **Note**: This is not the number of times the caller was actually transferred to an operator during the call.
Auth Fails	Currently not used.
Activities	Contains the call ID
Timestamp	ASR language used in the call.

Table 3 Call List for Operator Calls

COLUMN NAMES	DESCRIPTION

Call ID	Contains the call ID.
Language	ASR language used in the call.
Activity Count	The number of times CMG Speech Attendant has recognized a particular activity that took place in the call. For example, if the call list is being displayed for operator calls and the activity count is 1, it means that CMG Speech Attendant has recognized that the caller has said 'operator' once.
Timestamp	Time stamp when the call arrived to CMG Speech Attendant.

Table 4 Call List for Failed Calls

COLUMN NAMES	DESCRIPTION
Call ID	Contains the call ID.
Language	ASR language used in the call.
Timestamp	Time stamp when the call arrived to CMG Speech Attendant.

Table 5 Call List for Ring back calls

COLUMN NAMES	DESCRIPTION
Call ID	Contains the call ID.
Language	ASR language used in the call.
Activity Count	Number of times the ring back activity happened during the call.
Number	The number used for ring back.

Status	Shows if the ring back succeeded or not (Success/Fail).
Timestamp	Time stamp when the call arrived to CMG Speech Attendant.

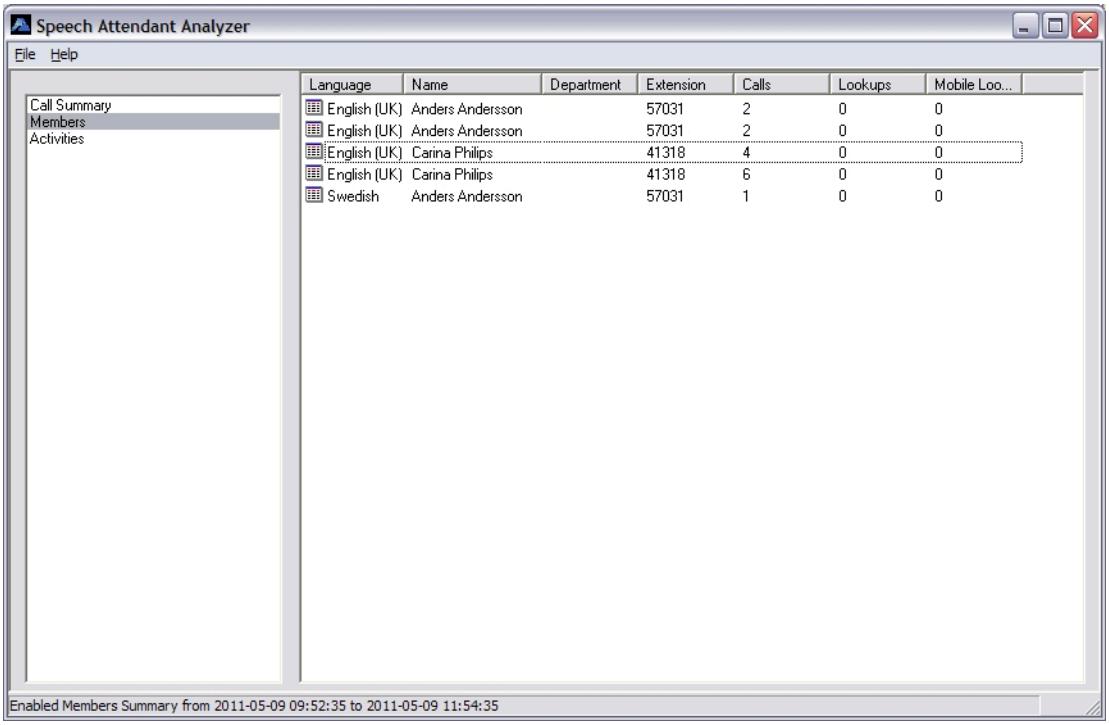
6.3 MEMBERS

The Members node contains a summary about all the members in the system that had any call activity (for example received call) during the selected time range.

To view **Members** summary, do the following:

1. Click **Members.**
2. Select **Time Range** if needed.

   The selected member summary appears.



See Table 6 for a description of the different columns for member entries.

Table 6 Members Summary Information

COLUMN NAMES	DESCRIPTION

Language	ASR language used in the call.
Name	Member’s name.
Department	Member’s department.
Extension	Member’s extension.
Calls	Number of calls received by the member in the selected time range.
Lookups	Number of times the member has performed extension lookups in the selected time range.
Mobile lookups	Number of times the member has performed Mobile number lookups in the selected time range.

6.3.1 Call List Details

For any result in the **Members Summary,** detailed call list information can be viewed. Double-click on the member call you wish to view details for, and a detailed call list appears. The call list for member calls shows the information listed in Table 7.

Table 7 Call List for Member Calls

COLUMN NAMES	DESCRIPTION
Call ID	Contains the call ID.

Received	Number of times that CMG Speech Attendant has recognized a “transfer request” to the particular member. A transfer request is when a caller has asked for a transfer and a call can have several transfer requests. **Note**: This is not the number of times a caller was actually transferred to this member during the call.
Lookups	Number of times the member has performed extension lookups in the selected time range.
Mobile lookups	Number of times the member has performed Mobile number lookups in the selected time range.
Timestamp	Timestamp when the call arrived to CMG Speech Attendant.
Cancels	Currently not used.

6.4 ACTIVITIES

The activities node displays a summary about the usage of activity reasons in the selected time period.

To view **Activities,** do the following:

1. Select **Activities.**
2. Select **Time Range** if needed.

The summary for all activities used in the selected time range appears.

For each entry, the items listed in *Table 8* are shown.

Table 8 Activities Information

COLUMN NAMES	DESCRIPTION
Language	ASR language used in the call
Name	Name of the activity
Accepted count	Number of times the activity was set by CMG Speech Attendant users during the selected time range.
Cancel count	Number of times the activity was cancelled by CMG Speech Attendant users during the selected time range.

6.4.1 CALL LIST DETALIS

For any result in the activities summary, detailed call list information can be viewed. Double-click on the activities you wish to view details for, and a detailed call list appears. The call list for activities shows the information listed in Table 9.

Table 9 Call List for Activity Calls

COLUMN NAMES	DESCRIPTION
Call ID	Contains the call ID
Accept Count	Number of times the activity was set (accepted) by the caller
Timestamp	Timestamp when the call arrived to CMG Speech Attendant

6.5 PLAYING BACK CALLS AND VIEWING RECOGNITION RESULTS

The Call List window allows calls to be selected and played back from the Recognition Results part of the window, see the following figure. See Table 10 for description of the controls in Recognition Results.

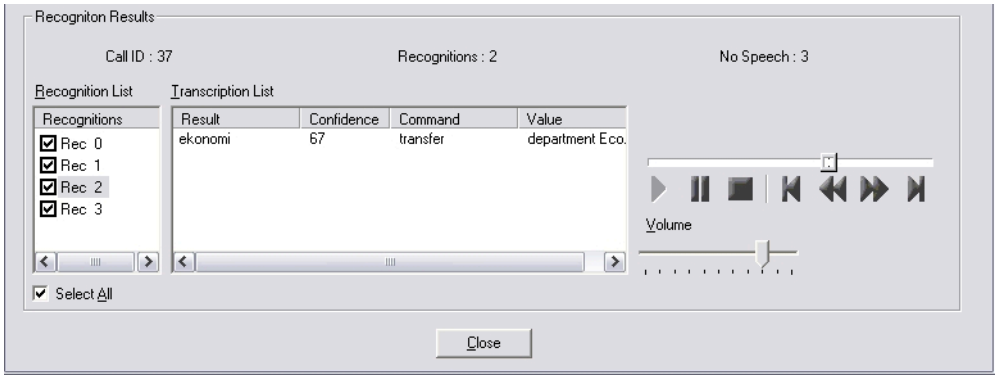


Table 10 Recognition Results Controls

CONTROLS	DESCRIPTION
Call ID	Call ID of the selected call
Recognitions	Number of recognition activities in the call where a recognition result was returned. **Note**: This does not necessarily mean that the recognitions results are correct.
No Speech	Number of times the caller did not speak anything during the call. In these cases there will be no recording as well as no recognition result.
Recognition List	Contains the list of recognition activities during the call that has been recorded.

Transcription List – Result	The **Result** column contains the recognition result. SPEECH_EARLY: If the Result column contains this value, it means that the user spoke too soon and that recognition could not be done. In this case a recording is done but there will be no recognition result. SPEECH_REJECTED: If the Result column contains this value, it means that the user spoke something not allowed by CMG Speech Attendant grammar. TOO_MUCH_SPEECH: If the Result column contains this value, it means that the user spoke for too long. **Note**: A single recognition activity can have multiple recognition results.
Select All	Allows all recognitions in the **Recognition List** to be selected or unselected. Only selected recognitions will be played back.
Media Player Control	For playing back the recognition segments. **Note**: Only recognitions that have been selected in the **Recognition List** will be played back.

During the playback the recognition results for each recognition activity that occurred during the call also gets displayed. In each call the recognition activity could happen multiple times.

For example:

CMG Speech Attendant: *“Who would you like to speak with?”*

User: “Jane Doe”

After this input has been given, CMG Speech Attendant tries to recognize what the user said. This is referred to as a recognition activity. It is possible that each recognition activity has a recording of what the caller says, and possibly also a recognition result. This is presented in the **Transcription List,** see *Table 11* for an explanation of what is presented.

Table 11 Transcription List

TRANSCRIPTION LIST ENTRIES	DESCRIPTION
Result	Represents the recognized text
Confidence	Confidence score for the recognized text. A high confidence value means that the CMG Speech Attendant system has more confidence that the result is correct.
Command	Command interpretation of the recognized text. *For example:* Call, Lookup, Mobile, and so on.
Value	Value interpretation of the recognized text. This is usually specific to the command. *For example:* If the command is “Call” then the value can be *“Jane Doe”* (that is, the person to call).

Note:

There can be multiple recognition results for the same recognition activity.

6.5.1 PLAYING BACK A CALL

To play back a call, do the following:

1. Select a call from the call list window.

2. Click **Play Call.**

   The **Recognition Results** section is populated according to the selected call, and the call starts playing.
3. While the call is being played, the **Recognition List** and the **Transcription List** change to reflect the corresponding results.

Note:

Scrolling through the **Recognition List** also changes the **Transcription List** correspondingly. To listen to some specified recognitions, make sure to only mark them as selected before you hit **Play.**

LOG FILES AND TRACING 7

This chapter contains the following sections:

CMG Speech Attendant is installed in a folder named `SpeechAttendant.` In this document it is assumed that the folder is located at `C:\Aastra\SpeechAttendant.`

It is also assumed that the CMG Speech Attendant log files are found in the `SpeechAttendant\logs` directory.

7.1 ACS LOGS

CMG Speech Attendant is based on the ACS platform for call control. This means that call events such as transfer attempts and results, SIP communication and so on are found in ACS logs.

The ACS platform consists of several components with separate logs. The components are usually installed in a directory under <Program Files>\Aastra, and the log files are stored in the Logs folder.

These are the possible installed components, their directory and the information displayed in the log:

- **Network Telephony Services (NeTS)**

  Directory: **TelephonyServices**

  Telephony information such as inbound calls, SIP communication with PBXs and Media Servers, transfer attempts and results, hung-up calls

- **QueueManager**

  Directory: **QueueManager**

  Attendant queue functionality synchronizing CMG Speech Attendant with other company attendants – controls a regular attendant call flow
- **MediaServer**

  Directory: **MediaServer**

  SIP media sessions with NeTS. Media operations, media processing, RTP streaming diagnostics, RTP ports, RTP streams, codec selections

For CMG Speech Attendant troubleshooting, the most important log of the ones above is the NeTS log.

7.1.1 NETWORK TELEPHONY SERVICES (NETS)

The NeTS log displays the following information:

- Call information
- SIP communication with for example call managers
- Transfer attempts and results

The recommended tool for reading ACS logs is the MItel Log Reader. For log files smaller than 2GB, Notepad++ is also useful.

The NeTS log contains information on all call events on the current server, meaning that simultaneous calls are mixed with each other. An individual call in the log is identified by an ActorID, and all logs associated to an **ActorID** are called a use case.

To find and follow a use case (that is, a call); search for the calling number and highlight the use case using tools available in the Mitel Log Reader tool. It is also possible to apply a filter on the use case to view only a single call of interest.

One log per day is created. If the system has very much traffic and the files get very large, it is good practice to divide them. For information on this, please refer to available ACS documentation.

7.2 CMG SPEECH ATTENDANT SERVER

The main CMG Speech Attendant log is named `netspeech.log` and resides in `<SpeechAttendant>\logs`. This log displays the following information:

- Speech Recognition results
- Dialog transitions

- Database interactions (fetching information on people and so on)

Find a call in the log by searching for an extension number or a name. Find the beginning of a call by searching for the string *"Fetching call configuration".* Each call is executed in a separate thread identified with the tag *[thrd_n].* This helps you filter out the current call in case of nested logging info.

When the log file has reached a predefined maximum size the file is rolled over; an indexed copy of the file is created and all subsequent logging data is written to a new file until the maximum size is reached again.

Default maximum size of the log file is 20 MB.

Default maximum number of log backup files is 5 (in total 100 MB of logging data).

7.3 CMG SPEECH ATTENDANT ASR GRAMMAR COMPILER

The grammar compiler log file is named `dgserver.log` and is found in `<SpeechAttendant>\logs`. In this log file you can find exactly what has been added to the speech recognition grammar. At the end of the log, a snapshot of the latest build results is presented, as shown in the figure:

```
DynamicGrammarServer compile - Empty list - nothing to compile
DynamicGrammarServer compile - Compile completed successfully
Starter compileAllCompanies - ************ COMPILATION RESULT ******************
Starter compileAllCompanies -
Starter compileAllCompanies - Successfully compiled [NOR Persons in UserGroup 1 - 8 entries]
Starter compileAllCompanies - Successfully compiled [NOR Departments in UserGroup 1 - empty list]
Starter compileAllCompanies - Successfully compiled [NOR Locations in UserGroup 1 - empty list]
Starter compileAllCompanies - Successfully compiled [DAN Persons in UserGroup 1 - 8 entries]
Starter compileAllCompanies - Successfully compiled [DAN Departments in UserGroup 1 - empty list]
Starter compileAllCompanies - Successfully compiled [DAN Locations in UserGroup 1 - empty list]
Starter compileAllCompanies - Failed compilations: none
Starter compileAllCompanies - Compile completed
Starter runScheduled - Scheduling method is time - sleeping until 0200
```

The log file is rolled over in the same manner as the `netspeech.log`.

Default maximum size of the log file is 20 MB.

Default maximum number of log backup files is 3 (in total 60 MB of logging data).

7.4 CALL SESSIONS LOG

Nuance can be configured to produce call session logs, with associated utterances attached as wave files, for each inbound call. These logs are useful for analyzing how a certain utterance was interpreted, and also for analyzing the utterance in itself.

The call session log files are found in `<Nuance>\Recognizer\data\callLogs`.

In each directory there is a log file and a couple of utterances, one file for each interpreted one. The contents of the log file are not described in detail in this document.

The following is shown in the log file:

- Which file has been played (which prompt was presented the caller).
- The result of the recognition (RECOGNITION if the caller spoke, NO_SPEECH_TIMEOUT if he was silent and so on).
- Plausible recognition results, in order of probability.

For more detailed information on the call session logs, see *Nuance Recognizer 9.0 Reference Guide [4].*

If CMG Speech Attendant has performance problems and a certain call where these problems can be pinpointed, provide your Mitel contact or partner with the following items together with information on the call (when it was placed, from who, and a description of the error):

- A call session log, complete with utterances.
- A dump of the dynamic grammar database from the time of failure (for example a backup).

7.5 CONVERTER LOG

The converter log service converts Nuance call logs to data, log files, and sound files that can be read by the CMG Speech Attendant Analyzer. CMG Speech Attendant Analyzer can then display relevant information to the user.

The location for converter logs is specified in the configuration file `(LogConverterService.exe.config).`

7.6 LOG OF MISSING TTS NAMES

During a normal call, CMG Speech Attendant will echo the name of the searched person. Sometimes CMG Speech Attendant is not able to do that. The reason can be that the searched person does not have TTS enabled in the language used in the call. If this is the case, the person's name and the language in which it cannot be presented is logged in a particular file `(SA_MissingNames_<YYYY-MM-DD>.log)` placed in `<CMGSpeechSrv>\logs.` Placed at this location, it will be cleaned up regularly by CMG Speech Server processes.

If these files appear, it indicates that some people cannot be presented by CMG Speech Attendant, and the system administrator should take a closer look to find the reason.

7.7 TTS SERVICE GENERATION LOG

If the name of a searched person is not echoed, the reason might be that a voice prompt cannot be played because it has not been generated. The CMGVoiceTTS.log file contains information about faults that may have occurred when generating voice prompts and is placed in `<CMGVoiceSrv>\logs`.

7.8 LOG OF ALL NAMES IN GRAMMAR

When CMG Speech Attendant compiles a grammar in a given language, it also creates a file (`SA_Person_<Lang>Gram_<UGroupID>.log`) where all accepted utterances are logged, and which ID in the CMG database they will lead to. This file is placed in `<CMGSpeechSrv>\logs`.

This file contains the results of the last grammar build, while previous results have been given names with dates at the end. At this location, it will be cleaned up regularly by CMG Speech Server processes.

7.9 EXCEPTION LOG

Errors and warnings detected by the system are logged in the file `exceptionlog.txt`. The format of this file differs from the system logs in that they are intended for developers and advanced support personnel.

Default size of this log file is 1 MB. This file is not rolled over so when the file reaches 1024 KB nothing more will be logged. Delete the file to capture more exception log traces.

7.10 MODIFYING LOGGING BEHAVIOR

This section describes how to modify certain aspects of the CMG Speech Attendant logs.

For information on modifying ACS logs, see available ACS documentation.

7.10.1 LOG LEVELS

The different log levels are:

- OFF
- FATAL

- ERROR
- WARN
- INFO
- DEBUG
- ALL
- Default level is DEBUG.

You can increase or decrease logging output for each application by adjusting the log level in the `<application>_logginig.ini` files found in the `SpeechAttendant \conf` directory.

To set the default log level to WARN in loggers A1 and A2 for all packages in a certain application, add the following line to the `<application>_logginig.ini` file:

```
log4j.rootLogger=WARN, A1, A2
```

It is also possible to set log levels for individual packages within an application. Relevant packages for each application are listed in the `<application>_logginig.ini` files.

To set log level INFO for package “foobar” in output A1 (for example file or console), add the following line to the `<application>_logginig.ini` file:

```
log4j.logger.com.netwisecorp.foobar=INFO, A1
```

7.10.2 LOG FILE SIZE

Default file size for CMG Speech Attendant Server and Grammar Compiler logs is 20 MB. This can be changed by editing the parameter `log4j.appender.A2.MaxFileSize` in the `<application>_logginig.ini` files.

Note:

The `dgserver.log` file might become very large if you have a large directory, several languages installed and a short recompilation interval.

7.10.3 NUMBER OF LOG FILE BACKUPS

The default number of backup log files is set to 5 for the CMG Speech Attendant Server and 3 for the Grammar Compiler. This means 100 MB versus 60 MB of logging history.

These settings can be changed by editing the parameter `log4j.appender.A2.MaxBackupIndex` in the `<application>_logginig.ini` files.

7.10.4 LOG FILE ROLLOVER STRATEGY

The log file rollover behavior can be changed to a daily rolling scheme by changing **appender A2** in the `<application>_logginig.ini` files. By changing the appender type to a daily rolling file appender the log file will be backed up at midnight with a timestamp extension and a new log will be created for subsequent logging. NB. This scheme does not allow you to set max size of log files or max number of backup files. Logging may therefore grow indefinitely.

CONFIGURATION FILES 8

This chapter contains the following sections:

The following are the three major configuration files for CMG Speech Attendant services:

- `netspeech.ini` for the CMG Speech Attendant server
- `dgserver.conf` for the ASR grammar compiler server
- `LogConverterService.exe.config` for the Log Converter service

The configuration files for the two first can be found in the `<SpeechAttendant>\conf` directory.

The `LogConverterService.exe.config` is found in `<SpeechAttendant>\bin \LogConverter,` adjacent to the LogConverter executable.

8.1 CMG SPEECH ATTENDANT SERVER CONFIGURATION

The CMG Speech Attendant server configuration file (`netspeech.ini`) is created at installation time and populated with default values. It contains the configuration parameters specified in the following tables.

Table 12 Parameters in section global

PARAMETER	DESCRIPTION	DEFAULT VALUE
missingPromptsPath	If the system detects that audio prompts are missing, it will create empty files under this directory, corresponding to the directory structure of missing prompts.	<InstallationDir>\logs \missingPrompts
exceptionLogPath	Defines the folder in which error log exceptionlog.txt is placed.	<InstallationDir>\logs

PARAMETER	DESCRIPTION	DEFAULT VALUE
numThreads	The number of call handling threads used by the application. This number must be equal to the number of Nuance ASR channel licenses used. You cannot force more application threads to run than this license allows, but you can choose a lesser number of threads.	Often 4
maxCallDuration	Maximum number of minutes allowed for a call. The application will terminate calls that exceed this limit. A value less than 1 disables this feature.	0
Log4jinifilepath	Defines the configuration file used for the logging subsystem.	<path to the netspeech_logginig.ini file>
supportedLanguages	Defines the languages currently supported by CMG Speech Attendant, that is, the ones installed.	List of language abbreviations for example ENU,SVE
languageDefinitionsPath	Folder on disk where language definition files are stored.	<Installdir>\lang\data

Table 13 Parameters in section sip

PARAMETER	DESCRIPTION	DEFAULT VALUE
localPort	This is the local port for the SIP stack, which could be either a single port or a range of ports, between >1024 to < 65535.	9987

Table 14 Parameters in section Database

PARAMETER	DESCRIPTION	DEFAULT VALUE
VoiceDBHost	Name of CMG Speech Database server. Configured at installation time.	<Name of DB server>
VoiceDBUser	Login name of the database user used to access the CMG Speech Configuration database. Configured during installation.	<name of DB login> usually *nice*
VoiceDBPassword	Password used by the db login above to access the CMG Speech database. Configured during installation.	<password>

Table 15 Parameters in section Telephony

PARAMETER	DESCRIPTION	DEFAULT VALUE
AttendantDomain	The TCA domain attached to the attendant user CMG Speech Attendant logs on as. Configured during installation.	For example 1
AttendantName	The CMG attendant name that CMG Speech Attendant acts as. Configured during installation.	For example “SpeechAttendant”

The parameters in 16 are Nuance specific. They are all indexed by an initial digit and all of them will not be discussed here. This document only describes the ones that are of importance to CMG Speech Attendant.

Table 16 Parameters in Section Nuance

PARAMETER	DESCRIPTION	DEFAULT VALUE
-prompt_path	Path where the CMG Speech Attendant system files are stored. Configured during installation.	<InstallDir>\lang \prompts\2345

-package	All grammar packages used by the application. Each installed language should have a package of its own. When more languages are installed, this list is increased.	configured during installation of language packages)
Client.recordDirectory	The directory where call session log files are placed.	
Behavior.calllog.AutoSession	Should be TRUE if call session logs are to be created.	TRUE

8.2 DYNAMIC GRAMMAR COMPILER CONFIGURATION

The CMG Speech Attendant ASR grammar compiler configuration file (`dgserver.ini`) is created by the CMG Speech Attendant installer with default values. The file contains configuration parameters specified in the following tables.

Table 17 Parameters in Section Global

PARAMETER	DESCRIPTION	DEFAULT VALUE
log4j_configfile	Defines the configuration file used for the logging subsystem	<path to the dgserver_logging.ini file>

Table 18 Parameters in Section Scheduling

PARAMETER	DESCRIPTION	DEFAULT VALUE
run_once_now	*True or False.* *True* means that when the ASR Grammar Compiler is restarted, it will first create all grammar files before running in scheduling mode to build the dynamic grammar.	False

run_periodically	*True or False.* *True* means the server will repeatedly (see scheduling_method) recompile the dynamic grammar. False means recompilation is only done when the service is restarted.	True
scheduling_method	Only considered if run_periodically is *True.* *Interval or Time.* Time means dynamic grammars are rebuilt each day at a given time. Interval means dynamic grammars are rebuilt when a certain time has passed since the last compilation	Time
scheduling_time	Only considered if scheduling_method is *Time.* Specifies the time of day when the dynamic grammar is rebuilt.	0200
scheduling_interval	Only considered if scheduling_method is *Interval.* Specifies the number of minutes that should pass between each grammar compilation.	60

Table 19 Parameters in Section Languages

PARAMETER	DESCRIPTION	DEFAULT VALUE
definitions_folder	The folder on disk where language definition files are kept. Configured at installation.	<Installation folder> \lang\data

Table 20 Parameters in Section Database

PARAMETER	DESCRIPTION	DEFAULT VALUE
VoiceDBHost	Name of CMG Speech Database server. Configured at installation.	<Name of DB server>
VoiceDBUser	Login name of the database user used to access the CMG Speech Configuration database. Configured during installation.	<name of DB login> usually *nice*
VoiceDBPassword	Password used by the db login above to access the CMG Speech database. Configured during installation.	<password>

8.3 LOG CONVERTER CONFIGURATION

The Mitel Log Converter configuration file (`LogConverterService.exe.config`) is created by the CMG Speech Attendant installer with default values. The file contains configuration parameters, the ones that can be modified by the user are specified in the following table.

Table 21

PARAMETE R	DESCRIPTION	DEFAULT VALUE
LogPath	Defines the folder in which the converter log is placed.	C:\temp\logs\
DaysToKeepLogs	Defines the number of days for logs to be kept.	20
<LogFilterLevel>	Defines the log level. Possible values: error, warning, info, trace, debug, debug1-debug10	debug3

TECHNICAL ASSISTANCE 9

Mitel provides *www.mitel.com* as a starting point for technical assistance regarding all products, including CMG Speech. From here, partners can obtain online documentation, FAQs, latest software updates and request further technical assistance.

References 10

[1] CMG Speech Configuration Manager - Administrators Guide

[2] Virtual reception Installation and Configuration Guide

[3] CMG DM - online documentation

[4] Nuance Recognizer 9.0 Reference Guide

[5] Nuance Speech Server Installation and User’s Guide