Mitel MiContact Center Enterprise

OPEN APPLICATIONS SERVER PLAY MESSAGES USER GUIDE

Release 9.3

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TRADEMARKS

Open Application Server Play Messages – User Guide
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INTRODUCTION

The Play, Collect Digits and Recognize services, invoked by the OAS API functions etpPlay( ), etpCollectDigits( ), and etpRecognize( ), initiate the playing of a pre-configured message—a play message that consists of a sequence of media objects. Play Messages are grouped in Play Message Lists. It is possible to configure play message lists, as well as create, modify, and delete each play message and its contained media objects when configuring OAS. Refer to the document OAS Software Configuration for details on how to configure Play Messages in OAS.

This document handles definition and usage of play messages:

- Play Message Lists for both tenanted and non-tenanted systems.
- Media objects, both system and tenant media objects
- Media containers, both system and tenant containers
- Special characters that can be used in the play message

PLAY MESSAGE LISTS

In OAS several Play Message Lists can be configured, including one Common Play list. In a tenanted system, play messages can be configured for each tenant. Each Play Message List contains a number of play messages. Each message has a unique identification number between 1 and 65,535 within the Play Message List. However, those identification numbers do not have to be unique across the different lists.

When a call arrives at an OAS Basic Virtual Device (BVD) the application may request Media Resources to be allocated to that call. When resources are allocated, a parameter passed to OAS in the request is Resources

Characteristics. OAS will search through the Language Library database for a language library whose identification number matches the requested one. This Language Library will become the active language library for that call.

Each Language Library contains the name of a Play Message List. If a Language Library does not have a particular Play Message List associated with it, OAS associates the Common Play Message List with that Language Library.

When a Language Library becomes active for a call, the Play Message List that is associated with it becomes the active Play Message List for that call until the call clears or resources are reallocated with a different Language Library (also called Resources Characteristics).

When a Play service is requested from OAS with a non-zero message ID, OAS will search for that message ID in the active Play Message List. If one is found, OAS will play that message. If that message ID was not configured in the active Play Message List, OAS will play the message with the same ID from the Common Play List. If the Common Play List does not contain a message with that ID, then OAS returns an error.

MEDIA OBJECTS

A play message consists of a list of up to 20 static or dynamic media objects. Media objects are files containing recorded sound (SoundMediaObjects) or text that can be played using the TTS engine (TTSMediaObjects). Media objects are the storage medium used by the Media Server to store:

- Coded audio prompts and messages
- Text (for TTS prompts and messages)

See Figure 1 on page 5 for an example of a play message that comprises a list of static (value) and dynamic (parameter) media objects. The play message is viewed using the Media Objects tab in the Play Messages dialog box, which is described in the document OAS Software Configuration.

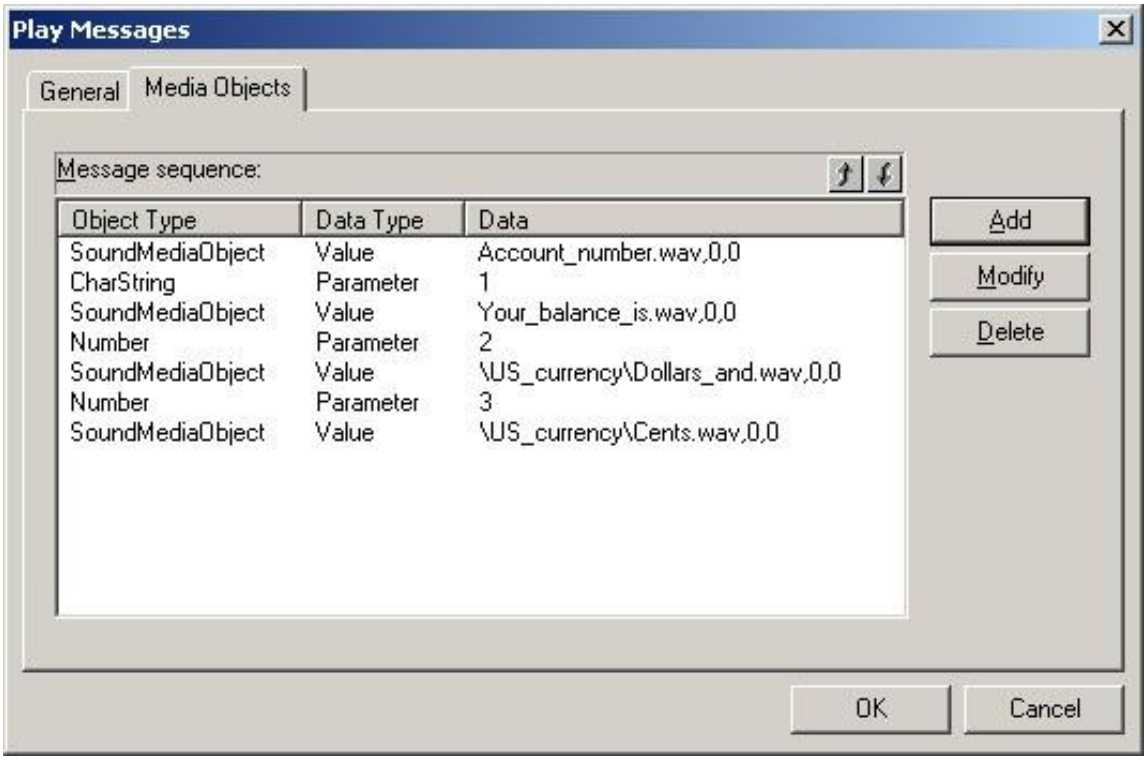

Figure 1 Play Messages dialog box

As shown in Figure 1 on page 5, each media object entry contains information about Object Type, Data Type, and Data. Each of these parameters is described in detail in the following section.

MEDIA OBJECTS TYPES

Media Objects can be either sound objects or Text To Speech (TTS) objects. Sound objects and TTS objects cannot be mixed within the same message.

SOUND OBJECTS

A list of available sound object types, and a description of each type, is provided in Table 1 on page 6.

Table 1 Sound objects

OBJECT TYPE	DESCRIPTION
CharString	Character string of up to 50 characters to be spelled character by character. The character string may consist of 0-9, a-z, and A-Z. Other special characters are allowed under special conditions as described in Playing Special Characters later in this section.
DateDM	Day/month (dd/mm).
DateDMY	Day/month/year (dd/mm/yyyy).
DateMD	Month/day (mm/dd). (Valid for English languages only.)
DateMDY	Month/day/year (mm/dd/yyyy). (Valid for English languages only.)
Duration	Time duration in hours, minutes, and seconds (00:00:00 to 99:59:59).
Number	Format n[,g] Where: n is a positive, negative, or unsigned number up to 15 digits in length (a number between -999999999999999 and +999999999999999). g is the optional gender of the item being counted. Values for g are: 0 for feminine (for instance, Spanish una) 1 for masculine (for instance, Spanish uno) 2 for neutral/other (for instance, Spanish un) If the gender is not specified in the request, neutral gender is assumed. For languages in which numbers have no gender, such as English, the gender parameter is ignored. For example: In Spanish, the number 21 or 21,2 will play as “Veinte un,” while 21,0 will play as “Veinte una,” and 21,1 will play as ”Veinte uno.”
SoundMediaObject	Pre-recorded sound file. The application specifies the name of the sound media object to play, the offset in milliseconds from the beginning of the media object from which to begin play, and the duration in milliseconds of play within the media object. See Section 5.1 on page 13 for full and relative paths specifications for media objects and containers. For example: If the root container is: \\<HOSTNAME>\root_container and the default container is set to: \VoiceMail\ a message with a sound media object specified as user\message (that is, relative path) will be translated by the system to: \\HOSTNAME>\root_container \VoiceMail\user\message. A message with a sound media object specified as \Welcome (that is, full path) will be translated by the system to: \\<HOSTNAME>\root_container

OBJECT TYPE	DESCRIPTION
	\Welcome.
Notes: A SoundMediaObject may be specified optionally in the following format: sound_media_object_name ,offset,duration Where: sound_media_obje ct_name is the name of the SoundMediaObject offset is the offset in milliseconds from the beginning of the media object from which the play function is to start (0 offset means start play from the beginning of the file) duration is the amount of time in milliseconds to play from that file(0 duration means play from the offset until the end of the file) The default container path is set via the etpSetDefaultContainerPath( ) service.	
Time12	Hour to minutes (0:00 to 23:59) spoken as 1:00 to 12:59 AM/PM (supported for the English language only).
Time24	Hour to minutes (0:00 to 23:59).

Note: In Cluster the root-container location is \\OASnetworkname\OASgro upname-File Share\root_container\

TEXT TO SPEECH OBJECTS

A list of available text to speech object types, and a description of each, is presented in Table 2 on page 10.

Table 2 Text to Speech objects

OBJECT TYPE	DESCRIPTION
TtsMediaObject	Specifies the name of and path to a text media object that contains the text file to be played via TTS. See Section 5.1 on page 13 for full and relative paths specifications for media objects and containers.
TtsString	A string passed as a parameter to be played via TTS. For example: “Today’s weather is sunny and warm.”

DATA TYPE AND DATA

The Data Type specifies the type of content in the Data field. When the entry in the Data Type field is Value, the Data field is either the name of a SoundMediaObject or a TtsMediaObject, or a Date, CharString, TtsString, and so on. When the entry in the Data Type field is Parameter, the Data field indicates the parameter sequence number of the media object. The parameter sequence number specifies the position of the media object in the play message service’s PlayList parameter. Each play message sequence can contain up to 20 parameters, with each parameter number ranging from one to 20. Parameter numbers can be in any order, do not need to be consecutive, and may be used more than once.

PLAY MESSAGE CONFIGURATION EXAMPLE

The play message shown in Figure 2 on page 11 is used as an example. Assume that the default media container has been set to \EnglishPrompts\.

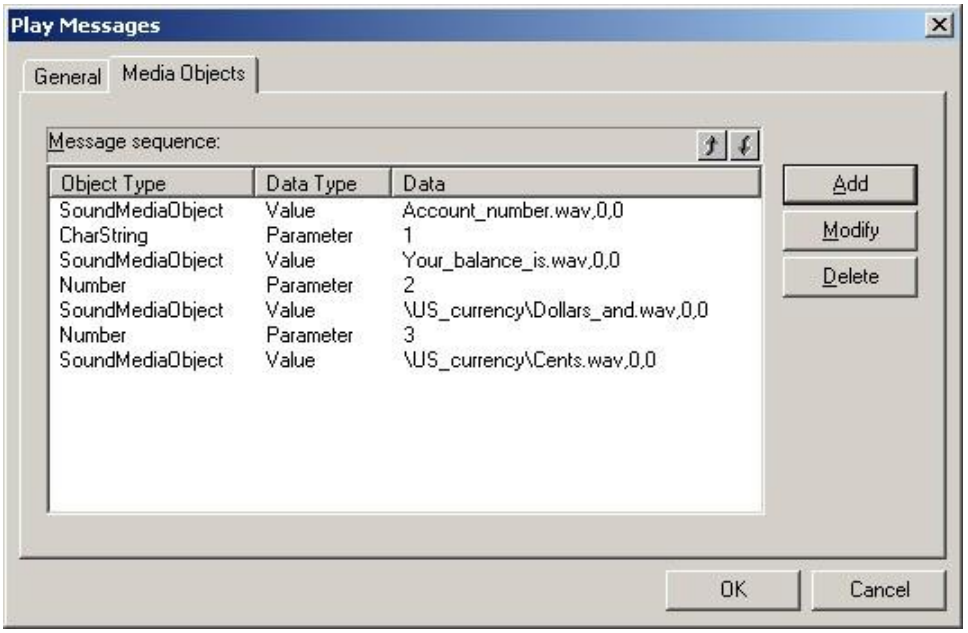

Figure 2 Play Message Example

When a play message (for example etpPlay( ) with a valid Message ID) request is made, the parameters in Table 3 on page 11 are passed.

Table 3 Play message parameters

PARAMETER	DESCRIPTION
messageId = 76	Play message ID.
PlayList= ABC456;123;78;	List of play objects to be played. The list consists of a character string.

This causes the following message to be played:

The sound stored in the media object: \\<HOSTNAME>\root_container\ EnglishPrompts\Account_number_is.wav,0,0 (0,0 means play the entire file.)

Note: This sound media object (Account_number_is.wav) is specified in the play message as a relative path (relative to the default media container \EnglishPrompts\, which in turn is relative to the root container path \\<HOSTNAME>\root_container).

1. The character string passed as the first element of the PlayList (ABC456) as “A B C four five six.”
2. The sound stored in the media object: \\<HOSTNAME>\root_container\EnglishPrompts\Your_balance_is.wav,0,0 (0,0 means play the entire file)

Note: This sound media object (Your_balance_is.wav) is specified in the play message as a relative path (relative to the default media container \EnglishPrompts\, which in turn is relative to the root container path \\<HOSTNAME>\root_container)

3. The number passed as the second element of the playList (123) is “one hundred twenty three.”
4. The sound stored in the media object \\<HOSTNAME>\root_container\\US_currency\Dollars_and.wav,0,0 (0,0 means play the entire file)

Note: This sound media object (\US_currency\Dollars_and.wav) is specified in the play message as a full path (relative to the root container path \\<HOSTNAME>\root_container)

5. The number passed in the third element of playList (78) as “seventy eight.”
6. The sound stored in the media object: \\<HOSTNAME>\root_container\US_currency\Cents.wav,0,0 (0,0 means play the entire file)

Note: This sound media object (\US_currency\Cents.wav) is specified in the play message as a full path (relative to the root container path \\<HOSTNAME>\root_container)

MEDIA CONTAINERS

Media objects are stored in media containers located in a Media Server. OAS 6.0 supports two types of containers, system and tenant.

MEDIA CONTAINERS STRUCTURE

The structure of media objects and media containers is equivalent to files and directories in a file system. Unlike the previous versions of OAS, the media objects and media containers in OAS 6.0 reside on a network share point. During a complete OAS installation, the user is prompted to select a container folder. The container can either be a folder on the local host or a network share point. If the folder is a local one then installation will create a share point as a 'root_container' for this folder. This container is deemed to be the system container for OAS 6.0. Also, some common user specific media objects can reside under this container. When a stand-alone media server is installed, the installation will update the registry to point to the root container share point as received from OCS configuration. The structure for this system container is as below.

\\<hostname>\root_container

In a multi-tenanted system, each tenant has its own media container. A tenant can access the media objects either from its own container or from the system container. Tenants cannot access the media objects from another tenant's container. The container structure for a tenant 'A' with tenant id 1 is as below.

\\<hostname>\root_container\tenant\1

To prepare for future support of operating systems other than Microsoft Windows, and in order to be backward compatible with previous versions of OAS, OAS 6.0 supports the following characters as delimiters between directory names and file names:

Table 4

CHARACTER	DESCRIPTION
'\'	backslash
'/'	slash
':'	colon

Even though the backslash is used in this guide for path specifications, any one of the above delimiters can be used.

When a media object (Sound or TTS) is passed as an argument to a function, it is specified as a full path or relative to the default media container path. This default path is requested by the client application in the Set Default Container Path service or the System default Media Container path "\".

Note: In the following examples, the media container designated within the brackets [ ] is optional.

FULL PATH

Full path media objects start with a directory delimiter. The following format applies when full path is used:

\[Container1\ Container2\...\]MediaObjectName[,Offset,Dur ation]

\[Container1\ Container2\...\]TtsObjectName

RELATIVE PATH

Relative path media objects do not start with a directory delimiter. When relative path is used, the default container path is prepended to the beginning of the media object. The following format applies when relative path is used:

[Container1\ Container2\...\]MediaObjectName[,Offset,Dur ation]

[Container1\ Container2\...\]TtsObjectName

Note: Important This is opposite to the way Play Messages are configured in previous releases of OAS.

EXAMPLES

Following are two examples where media objects must be located on a Media Server host in order to be accessed (played) by a Play Message:

- Example 1: If the root container path is defined during the OAS installation as: \\<HOSTNAME>\root_container\ and a full path media object was specified in a play message as:
  \UserContainer\Welcome.wav
  then, the system will play the following file when the play message is invoked:
  \\<HOSTNAME>\root_container\Tenant\1\UserContainer\Welcom e.wav.
- Example 2: If a play message referred to a relative path file, for example :
  User_1\Message_1.wav
  and the default media container was set to:
  \VoiceMail\Messages\
  then, the system will play the following when the play message is invoked:
  \\<HOSTNAME>\root_container\VoiceMail\Messages\ User_1\Message_1.wav

When the System concatenates the root container path with a fully specified media object or with a default container path and a relative media object, it concatenates those strings without checking for delimiters. This gives more flexibility to the power user for defining complex media objects and container structures.

The following rules should be followed for simple media objects and container structures:

1. Root container path must not end with the directory delimiter.
2. Default container path must start and end with the directory delimiter.
3. Fully specified media object must start with the directory delimiter.
4. Relatively specified media object must not start with the directory delimiter.

MEDIA OBJECTS FORMATS

OAS supports both sound media objects and TTS media objects. TTS media objects are plain text files in any of the languages supported by the OAS TTS service. Sound media objects are coded audio prompts and messages.

OAS supports a number of different coding algorithms and file formats as shown in the following table:

Table 5

SOUND CODING FORMAT	FILE EXTENSION
G.711 µ-Law PCM (8-bit) 8 KHz (64 Kbps)	8K_MULAW or WAV
G.711 A-Law PCM (8-bit) 8 KHz (64Kbps)	8K_ALAW or WAV

For example:

A WAV-type Welcome media object recorded in µ-law PCM 64Kbps should be named Welcome.WAV.

Note: See list below for restrictions

- Different WAV formats can be mixed in one Play request.

System Prompts supplied by OAS are recorded in G.711 A-Law PCM (8-bit) 8KHz (64 Kbps) in WAV format. Therefore, it is recommended that custom prompts are recorded in the same format in order to be mixed with system prompts (dates, time of day, and so on.)

PLAYING SPECIAL CHARACTERS

Character String objects may contain the following characters:

1. A-Z, a-z, 0-9. These characters are installed with OAS for the supported languages.
2. Any special characters, such as * - + ê Ê ö Ö, and so on, as long as a recorded sound file exists in the media objects container for that language, and the file name is in the format Cnnn.wav, where nnn is the ASCII value representing this character. For example, to play the character Ä, a recorded file containing the sound of that character must be contained in the appropriate Media Container, and the file name must be C196.wav.
3. A sound media object name also can be inserted in the character string between < and >. For example, to play a telephone number, the character string for that telephone number can be “555<pause.wav>1234” where pause.wav is the name of a sound media object containing a short pause (silence).

Sound media objects that are used to play the characters must be recorded in G.711 A-Law PCM (8-bit) 8KHz (64 Kbps) in WAV format. For example, to play the sound ‘A’ or ‘a’ in US English, a file with the name ‘A.WAV’, must exist in the US English directory (file names are case insensitive).

Note: Because of the format adopted for inserting a sound media object name within a character string, the only way to play characters < and > is to insert their respective sound media object names within the string (such as “xxx<left_angle.wav>yyy<right_angle.wav>, where sound media objects left_angle.wav and right_angle.wav are recorded and stored in the appropriate media container.

Note: When playing special characters contained in a text file, the text file must be saved as a UTF-8 file. If Notepad is used to edit the text file then select Save As from the File menu and select UTF-8 as Encoding when saving the file. This is only necessary if the text file contains non-ANSI characters.

HOW TO USE PLAY MESSAGES

Play Messages must first be configured then used during Play Service Requests.

SETUP

The following example shows a typical way for configuring and using Play Messages:

1. Add one or more Play Message Lists using the OAS Configuration tool (refer to document OAS Software Configuration for details on how to configure a Play Message List in OAS). If a play message list is created for a specific tenant then you should assign this list to the particular tenant. See Figure 3 on page 19 for a play message list WALLY_MSG assigned to tenant WALLY.

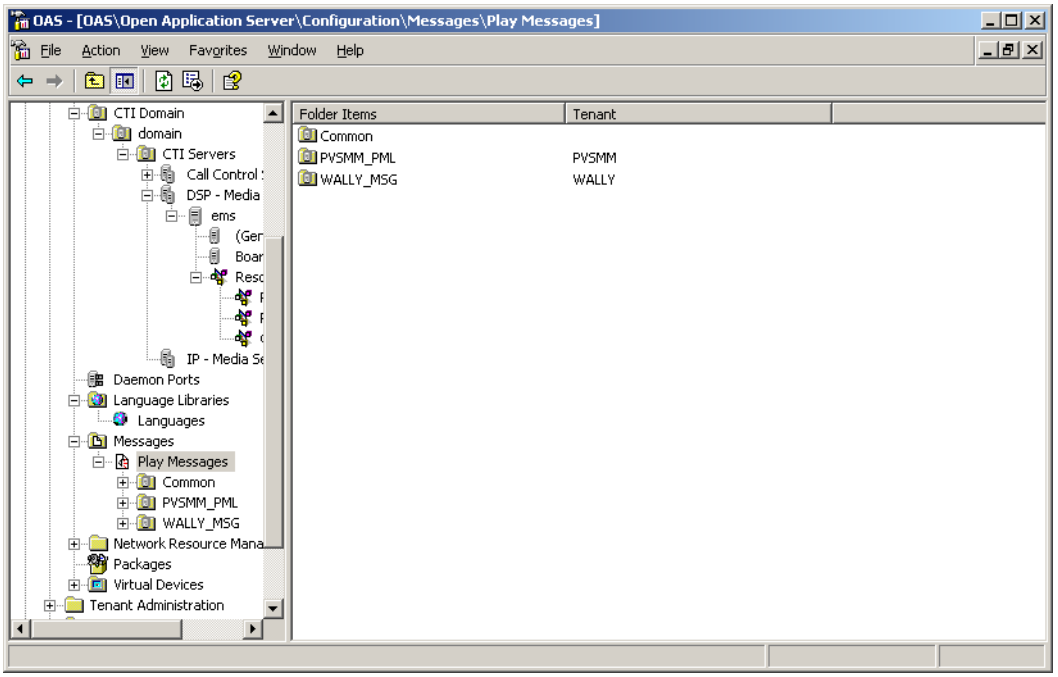

Figure 3

2. Add a number of Play Messages to one or more of the Play Message Lists.

See Figure 4 on page 20 for the Common Play List and two additional lists (VM_English and VM_Swedish), as well as a number of play messages configured in the VM_English Play Message List.

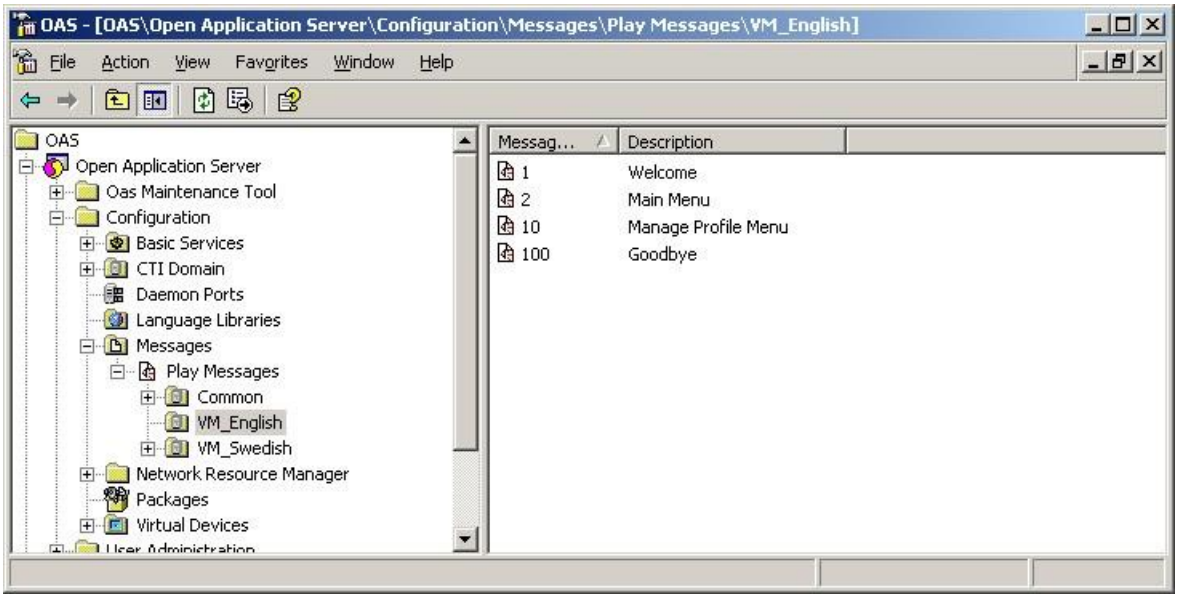

Figure 4 Play Message Lists

3. Select Language Libraries in the left pane of the OAS configuration tool, see Figure 5 on page 20.

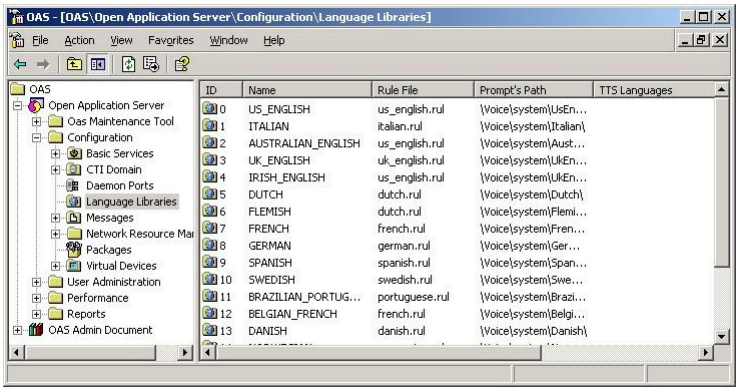

Figure 5 Language Libraries

4. Double click on one of the existing Language Libraries to select a Play Message list for the pull down controls under the Play Messages heading. By default the list is assigned to the system. Hence, the drop-down list of the play messages will only list the system play message lists and not the ones that are assigned to tenants. However, a language may first be assigned to a tenant selecting from the tenant drop-down list. Now, the drop-down list for play list will show both the system specific and Tenant specific play messages lists.

5. You can add a Language Library, either for tenant or for system and then define all needed information for the new Language Library. The ID, Name, Rule File and Prompt's path are mandatory fields. While assigning play message list to this language id, the same procedure as in previous step applies, see Figure 6 on page 21

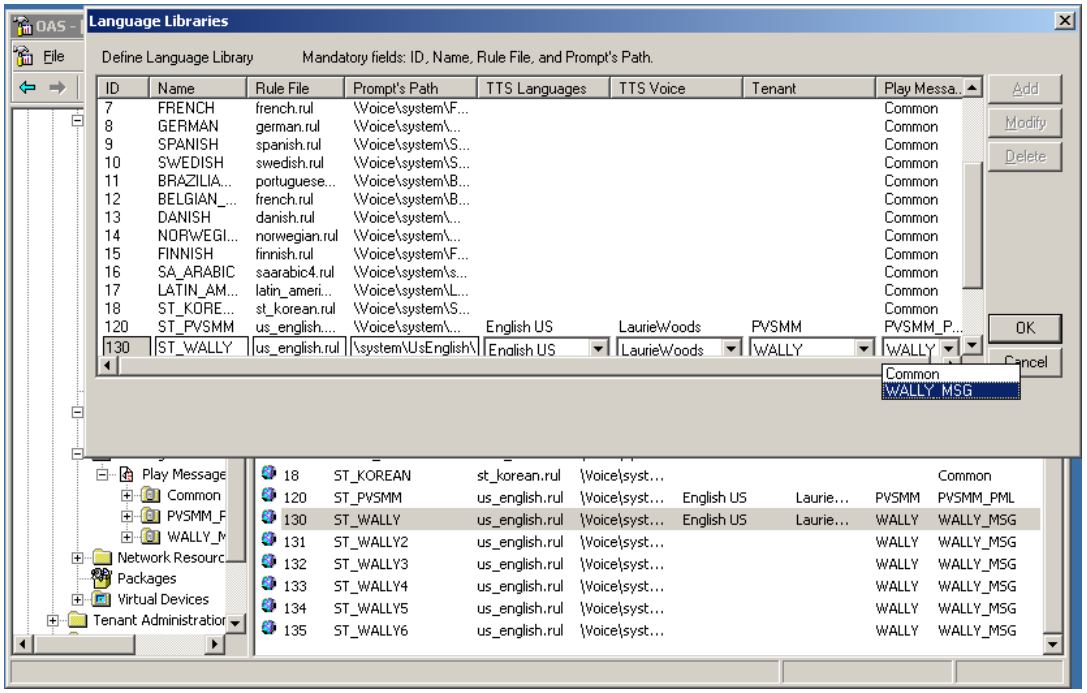

Figure 6

Note: When a new language is added, the Nuance watcher service has to be restarted manually by the user:

- Check the services are running by browsing http://localhost:7080.
- Stop and start the media server to establish connection with the Nuance service.
- Play the language from the client application

PLAY MESSAGE USAGE

The following is an example of how to use a Play Message WALLY_MSG for a tenant WALLY. The same logic applies for the system messages as well.

Call OAS (at a BVD assigned to the tenant WALLY)

1. Request Resource Allocation with Resources Characteristics = 130. This will make the ST_WALLY Language Library (id number 130) the Active Language Library (See Figure above). This will also make Play Message List "WALLY_MSG" the active Play Message List for that call (since this is the Play Message List associated with Language Library 130.
2. The media server needs to have required resources allocated and assigned to the tenant WALLY in order to play the message ids with proper resource allocation, see Figure 7 on page 23. When the resources are allocated successfully, answer the call then request a Play service with message ID that is defined under WALLY_MSG or the common play message list.

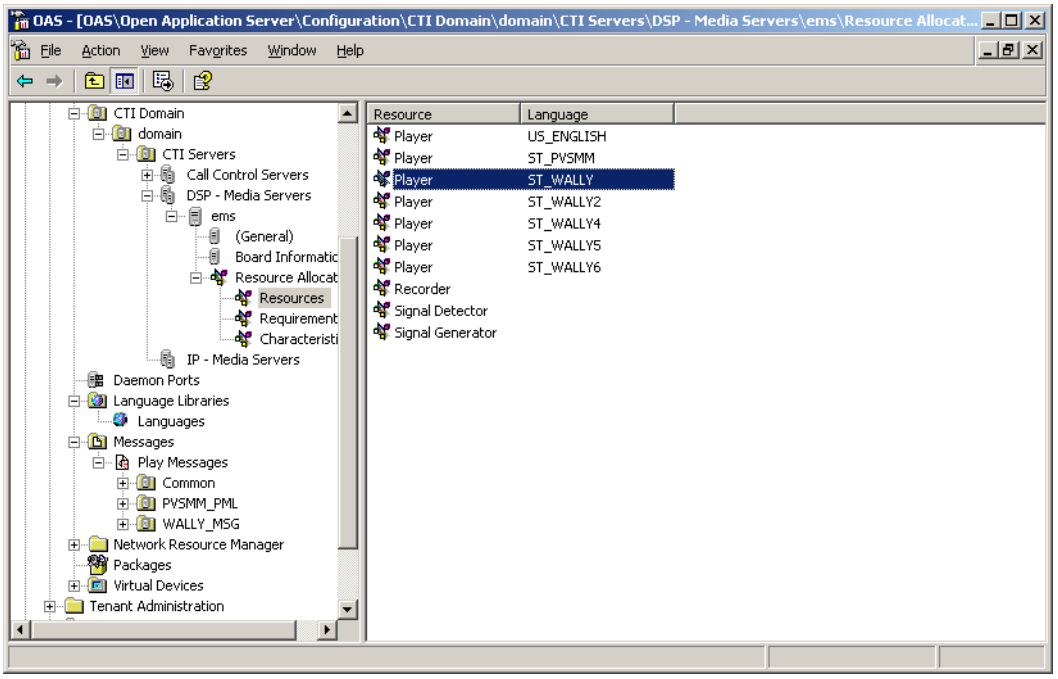

Figure 7

3. OAS will play the message (for example, Welcome) since this is the message ID requested, and the message is configured in the active Play Message List or common list.

Note: If the active Play Messages list did not contain the requested message (say, id = 1) then OAS will play message ID = 1 from the Common Play Message List if a message with ID = 1 was configured in that list. Otherwise the Play request will fail.