

Verint Financial Compliance Capture (Verba)

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Speech Analytics Guide

The system offers speech transcription to allow searching in voice conversations. Refer to the corresponding guides to understand the capabilities, language support, limitations and license requirements for each.

- [Speech transcription](#)

The following table provides a brief overview of the options:

	Speech Transcription
Technology	Large Vocabulary Continuous Speech Recognition (LVCSR)
Languages	48 languages
Recognize persons, product, and company names with good accuracy	Yes, with limitations*
Trained for financial services	No
Storage requirement	Small, compressed text file
Recognition/Indexing time	Moderate
Search	Very Fast
View context	Yes
Text analytics	No
Requires 3rd party servers	No

* Might require phonetic boosting or language customization

Speech transcription

Overview

Speech transcription automatically creates a searchable, exportable full-text transcript of the audio portion of the recorded conversations. This allows users to identify, investigate and correct compliance and policy breaches.

- [Installing transcription](#)
- [Configuring and running transcription](#)
- [Exporting transcripts](#)
- [Searching and viewing transcripts](#)
- [Improving transcription accuracy](#)
- [Speechmatics](#)

Supported languages

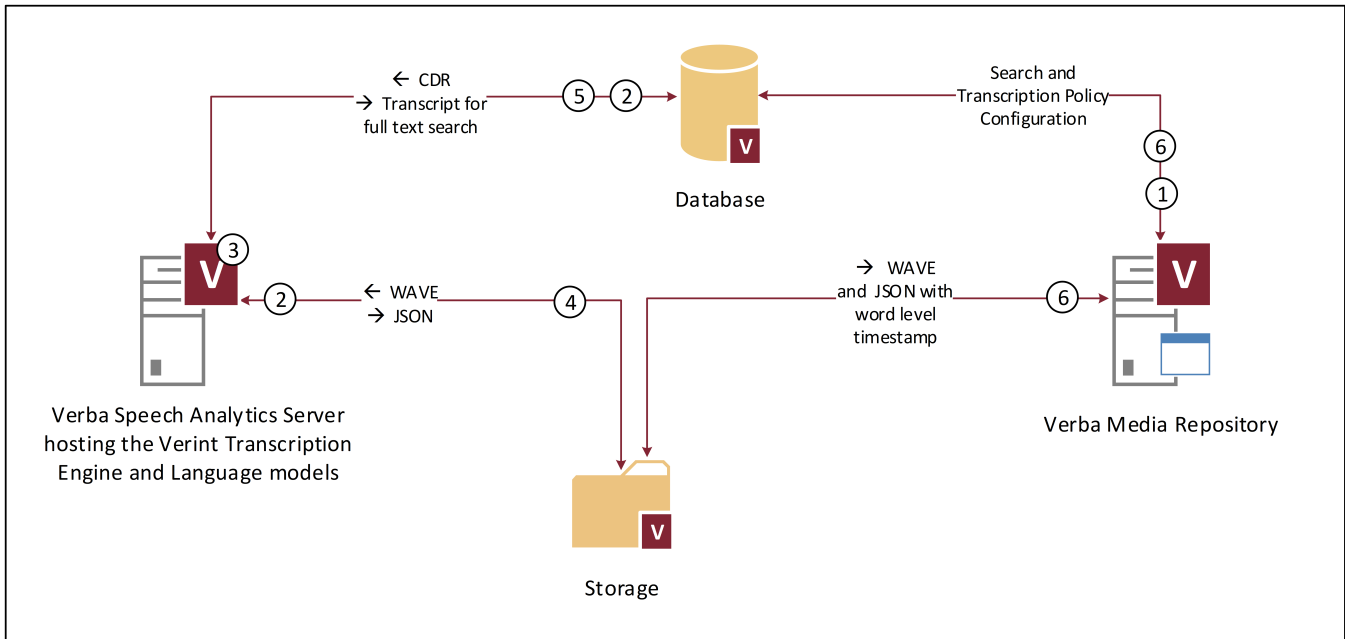
Currently, the Verint Speech Transcription Engine supports the following languages-accents:

Arabic-BH	Arabic-EG	Arabic (Gulf)
Arabic (Levantine)	Azeri	Bengali
Cantonese	Catalan	Czech
Danish	Dutch	English-AU
English-GB	English (Hong Kong)	English-IN
English-MY	English-ZA	English-SG
English-US	French-CA	French-FR
Georgian	German	Hebrew
Hindi	Indonesian	Italian
Japanese	Kannada	Kazakh
Korean	Malayalam	Mandarin
Polish	Portuguese-BR	Portuguese-PT
Russian	Slovak	Swedish
Spanish-SA	Spanish-SP	Tagalog
Tamil	Telugu	Thai
Turkish	Ukrainian	Urdo

Some languages may need additional LAC boosting, depending upon the industry and locale. For more information, please contact us.

Transcription process

The following figure provides an overview of the transcription process.



1. Administrator configures the data processor and the transcription data processing policy
2. The Verba Speech Analytics Service executes the transcription policy, retrieves the conversation record from the database and reads the related media file located on the storage target
3. The Verba Speech Analytics Service transcribes the calls using the configured language model in the policy
4. The Verba Speech Analytics Service stores the a JSON file with word level timestamp information on the storage
5. The Verba Speech Analytics Service stores the transcript for full text search in the database
6. During search, the Verba Media Repository Server uses the full text search index in the database. For playback, the system retrieves the media files and JSON file with word level timestamps.



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Installing transcription

Dimensioning the server

A recommended Stand-alone Verba Speech Analytics Server Configuration:

4GB RAM + 2GB / language model

2 vCPU + 1 vCPU for every 200 hours of calls transcribed in 24 hours, scaling up to 16 vCPUs

Individual results may vary due the talk time in recordings, the storage codec and the language model used.

Storage requirement

The transcription only works when the media is stored on SMB storages. If the media has to be stored on a WORM or non-SMB storage, the files should be hosted temporarily on SMB and moved to the final storage target after transcription.

Server Roles

The Verba Speech Analytics Service can be enabled on the following server roles:

- Speech Analytics Server
- Media Repository Server

Do not enable the service on any other server role. If the service is enabled on the Media Repository Server, the service has to be configured to limit the number of simultaneous transcription processes to 1 (Speech Analytics / Transcription / Task Processing Threads Count), this will use 1 core for transcription.

The service may be enabled on multiple servers, in this case, the system will automatically handle the load balancing between servers.

Installation

Step 1 - Copy the language model file, which is a .zip file, to *C:\Program Files\Verba\resources\transcription\eliza*

Step 2 - In the Verba Web Interface go to **System > Servers > Select your Server > Click on the Service Activation** tab.

Step 3 - Activate the **Verba Speech Analytics Service** by clicking on the  icon.

Step 4 - Go to **System > Servers > Select your Server > Click on the Service Activation** tab

Step 5 - Start the **Verba Speech Analytics Service** by clicking on the  icon.

For additional languages, only **Step 1** needs to be repeated for the additional languages. The service will detect the new language model within 30 minutes, or you can force the detection by restarting the service.

Creating a Data Processor

Step 1 - In the Verba Web Interface go to **Data > Data Processors**

Step 2 - In the top right corner click '**Add new Data Processor**'

Step 3 - Name the Data Processor

Step 4 - Select the Speech Transcription for Type

Step 5 - Select Verint for Engine

Step 6 - Click '**Save**' to save your Data Processor

Configuring and running transcription

This article contains a description of the Speech Transcription Data Management Policy configuration.

A Data Management policy configured with the Speech Transcription action is used for specifying the recorded conversations to be transcribed. Servers running the Verba Speech Analytics Service read the media file from an SMB storage, then store the recorded conversations on their local disk temporarily while transcribing. After the transcript is created, the media files will be discarded, and the transcript files are relocated to the media's storage location. Each policy you define can be set up for a different language/accent and a set of filters to determine which conversations should be transcribed. These filters are based on the metadata stored in the database for each conversation.

This is a good way to account for differences in languages used for conversations of different locations, groups etc.

Creating a Transcription Policy

Step 1 - Follow the generic policy creation steps described on the following page: [Data management policies](#)

Step 2 - Select **Speech Transcription** as the action

Step 3 - Select the **Data Processor**

Step 4 - Select the **Language** for the transcription

Step 5 - Select your filters to specify which conversations should be checked by this policy

Step 6 - Click on **Save**. The policy will run periodically,

ID*	<input type="text" value="10"/>
Name*	<input type="text" value="Corp Transcription NY site"/>
Enabled*	<input type="text" value="Yes"/> ▼
Priority*	<input type="text" value="30"/> <small>Higher priority policies are processed first when the 'older than' dates are equal.</small>
Action*	<input type="text" value="Speech Transcription"/> ▼
Data Processor*	<input type="text" value="Transcription - Verint (Speech Transcription / Eliza) -"/> ▼
Language	<input type="text" value="English (USA)"/> ▼

Assigning transcription user licenses

Transcription is licensed on a per user basis. You can assign these licenses to roles, by setting the **'Speech Analytics > Transcribe Conversations'** checkbox on the role configuration page, or you can assign the built-in Transcription User role. This option is used as the basis of speech search enabled user licensing, calls of users without this setting will not be transcribed.

Running and monitoring the transcription process

The transcription actions are executed by the Verba Speech Analytics Service on the servers where this service is enabled.

The transcription process can be monitored on the Dashboard with a [Background Tasks Widget](#) or in the list of background tasks in the Verba Web Interface at **System > Background Tasks**.

The [Log files](#) for the service can be found at (your application path might be different):

C:\Program Files\Verba\log\speech-analytics.log

Exporting transcripts

The system allows exporting transcripts in the following ways:

- Running a report
- Exporting
- Using the API

Report

Following the [Creating report](#) guide, you can create a **Users Speech Transcript Details** report containing the transcripts from the filtered conversations.

Export

You can use the [Export](#) feature to obtain the media files and the transcripts. The transcript file is a compressed file with **VTR** extension, containing a plain text file. The text file contains the following fields for each recognized word:

Field Name	Value	Example
word	the recognized word	hello
confidence	the confidence level	0.79000000
speaker	participant recognised	speaker1
time	time elapsed in seconds	189.35000000
duration	length of the word in seconds	0.50000000

API

It is possible to integrate an external application to retrieve a transcription file using the [HTTP Business API](#). The [Get Call Information](#) API call can return either a plain text file or the transcription format, depending on the call.

Searching and viewing transcripts

The screenshot displays the Verint Verba Collaboration Compliance Platform interface. At the top, there is a navigation bar with tabs for Conversations, Quality Management, Workflows, Reports, Users, Data, and System. The user is logged in as Verba Administrator.

The main area is titled "Conversations" and shows search results. On the left, there is a search sidebar with options for Basic Search Options, Advanced Search Options, and Metadata and Markers. The search criteria include "ticket" and "call".

The search results table shows two items found, displaying all items. The results are as follows:

Start Date	Start Time	Duration	From	From Info	To	To Info	Direction
Jul 31, 2018	1:53:16 PM	00:45:00	caller1@contoso.com		caller2@contoso.com		
...about she's well have a call i got a i've got a call ...well i've actually no really but we have some tickets							
Jul 31, 2018	1:53:11 PM	00:45:00	caller1@contoso.com		caller2@contoso.com		
... calling at&t for quality assurance purposes your call ...trouble press or say one this is at&t is trouble ticket							

Below the search results, there is a "Conversation View" section showing a waveform of the conversation. The waveform is paused at 00:01:14.694. Below the waveform, there is a playback control bar with buttons for play, pause, stop, and volume.

At the bottom, there is a "Markers" section with a list of markers and a "Transcription" section showing the transcript text. The transcript text is as follows:

```

Speaker2: number give me gave me what number did you
Speaker1: yeah i was he said
Speaker2: let me see two hundred five eight seven seven zero three zero
Speaker1: okay repeat that again i'm sorry
  
```

Full-text search

In the Verba Web Interface under **Conversations**, you can search for words or phrases mentioned in the transcribed conversations. The search results will be highlighted in the transcript and in a small window of context will be shown in the results as well. You can find more in the [Searching in IM conversations and voice transcripts](#) article.

Playback

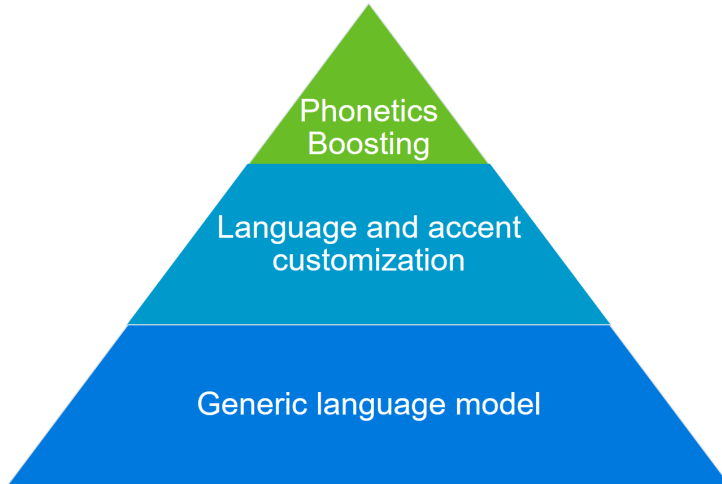
During the playback, the portion of the transcript corresponding to the currently played part of the media will be automatically highlighted. Clicking on a word on the transcription will jump the playback to the corresponding part of the media, and start the playback.

Automatic labeling rules

You can use the [Automatic labeling](#) to add labels based on transcripts. You can create an automatic labeling rule based on your current search by clicking on the **'Create labeling rule from these'** link. The text search query will be copied as filtering criteria to a newly created Label Rule. The filtering criteria for searching in IM conversations, SMS and voice transcripts is **Text Search**.

Improving transcription accuracy

This article is a guide on the possible ways of improving the recognition rate of the transcriptions. Speech transcription engine uses a language model that describes the spoken language acoustically and linguistically. There are two options for improving the generic language model, language and accent customization (LAC) and phonetic boosting.



Language and accent customization (LAC)

The language and accent customization is a professional service that focuses on the acoustic characteristics of the language model. It takes into consideration specific environmental and spoken elements, such as background noises, organization scripts or language patterns. For this process, it is necessary to collect audio.

Please contact us for further details.

Phonetic boosting

Add phrase wizard (page 2 of 3)

Phonetics Boosting

Specify the language model band that best suits the desired term/phrase usage.

luxury items

old
↓

Band Adjustment

- Unchanged Does not change the rate of this phrase
- Knockout (advanced only) Eliminates the phrase from transcription
- Low (advanced only) Advanced feature for suppressing a phrase
- Medium (**recommended**) Sets the phrase to a common level
- High (advanced only) Advanced feature for boosting a phrase

Impact of Changes

Impacting Phrases:	Impacted Phrases:								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Phrase</th> <th>Band</th> </tr> </thead> <tbody> <tr> <td>luxury</td> <td></td> </tr> <tr> <td>items</td> <td></td> </tr> </tbody> </table>	Phrase	Band	luxury		items		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Phrase</th> </tr> </thead> <tbody> <tr> <td> </td> </tr> </tbody> </table>	Phrase	
Phrase	Band								
luxury									
items									
Phrase									

Best Practice

1. Select the band that best suites the phrase's usage:
 - a. **Medium** is recommended in most cases. In case the existing band is higher, select **Unchanged** instead.
 - b. **Low, High and Knockout** are advanced features, and should not be used in regular scenarios.

< Back Next > Cancel Finish

Phonetic boosting is a fine tuning customization option for the linguistic characteristics. It helps to increase the recognition rate if the transcription system needs improvements with company-specific words. The following actions can be done:

- Expanding the language model vocabulary
Add terms and phrases that are unique to your business or to an ongoing campaign to boost their recognition by the Speech Engine.
- Boosting recognition of existing terms and phrases
The most common cause for poor recognition of a term or phrase is the fact that its probability is higher in your field. Changing the weight of an existing term or phrase increases its probability, changing its impact on the Speech Analytics results.
- Suppressing a competing phrase
An incorrect transcription of a term or phrase causes it to compete with the “correct” transcription. With Phonetics Boosting, you can suppress the incorrect phrase by decreasing its band probability.
- Supplementing pronunciations
If a term has several pronunciations, adding all the pronunciation variants boosts recognition

Please contact the support service for assistance in phonetic boosting.

Speechmatics

Speech transcription data processors allow transcribing the audio portion of the recorded conversations.

Creating a Speechmatics data processor

Follow the steps below to create a new Speechmatics data processor:

Step 1 - Open the Verba Web interface then select **Data / Data Processors** from the top menu

Step 2 - Click on the **Add New Data Processor** link on the top right

Step 3 - Complete the configuration according to the requirements in the following table

Configuration item	Description
Name	Name of the data processor. This name will identify this processor across the system.
Type	Select Speech Transcription
Engine	Select Speechmatics
API Root URL	URL of the Speechmatics API (on-prem server or cloud)
API User	Speechmatics APU user name
API Token	Speechmatics API token
Enable Speaker Diarization	Allows separating participants in conversations and produce a dialog like output

Step 4 - Click **Save** to save the settings