

# RT-Voice PRO

*Hearing is understanding*



Documentation

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<https://www.crosstales.com>

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**Thank you for buying our asset "RT-Voice PRO"!**

If you have any questions about this asset, send us an email at [rtvoice@crosstales.com](mailto:rtvoice@crosstales.com). Please don't forget to rate it or write a little review – it would be very much appreciated.

## 1. Overview

Did you ever want to make a game for people with **visual impairments** or **reading difficulties**? Or want your players to **not have to read too much**? Or would you listen to just the dialogues in your game **without consulting a voice-actor** in early stages of development? Then RT-Voice is your **time-saving** solution to do so!

RT-Voice uses TTS-voices already integrated in your system to pronounce any written text at runtime.

All of this happens without intermediate steps: the transformation effects **instantaneously** – and, if needed, **simultaneously**!

## 2. Features

### 2.1. Convert text to voice

- **Instant conversion** from text to speech - generated **during runtime!**
- **Side effect:** the continuous audio generation **saves a lot of memory**
- **No need for voice actors** during the testing phase of your game
- Filter voices by **name**, **culture** and/or **gender**
- **Several voices at once** are possible (e.g. for scenes in a public place, where many people are talking at the same time)
- **Fine tuning** for your voices with **speed**, **pitch** and **volume**
- Support for [SSML](#) and [EmotionML](#)
- **Current word**, **visemes** and **phomenes** on Windows and iOS - including **marker functions**
- Generated audio **can be stored** in files reusable within Unity
- **1-infinite synchronized speakers** for a single AudioSource
- Simple **sequence** and **dialogue system**
- **No** performance drops
- Components to speak UI-elements, like **Text** and **InputField**
- Enables access to more than **1'000 voices**

### 2.2. Documentation & control

- **Test** all **voices** within the **editor**
- Powerful [API](#) for **maximum control**
- Detailed **demo scenes**
- Comprehensive [documentation](#) and **support**
- Full **source code** (including libraries)

### 2.3. Compatibility

- Supports **all build platforms**
- **Native providers** for **Windows**, **macOS**, **Android**, **iOS** and **XBox**
- Compatible with:
  - [AWS Polly](#)
  - [Azure \(Bing Speech\)](#)
  - [MaryTTS](#)
  - [eSpeak](#) and [eSpeak-NG](#)
  - [Klattersynth](#)
  - [WebGL Speech Synthesis](#)
  - [Google Cloud Speech](#)
- Works with **Windows**, **Mac** and **Linux editors**
- Compatible with **Unity 2019.4 – 2023**
- Supports **AR** and **VR**
- **C# delegates** and **Unity events**
- Works with [Online Check](#)
- [PlayMaker](#) actions

## 2.4. Integrations

- [Adventure Creator](#)
- [Amplitude](#)
- [Cinema Director](#)
- [Dialogue System for Unity](#)
- [Google Cloud Speech](#)
- [Klattersynth](#)
- [LipSync](#)
- [Localized Dialogs & Cutscenes \(LDC\)](#)
- [Naninovel](#)
- [NPC Chat](#)
- [Online Check](#)
- [PlayMaker](#)
- [Quest System Pro](#)
- [SALSA](#)
- [SLATE](#)
- [Volumetric Audio](#)
- [WebGL Speech Synthesis](#)

## 2.5. Platform-specific features and limitations

### 2.5.1. Overview

Provider	Offline	SSML	Audio files	Words
Windows	yes	yes	yes	yes
macOS	yes	no	yes	no
Android	yes	yes <sup>1</sup>	yes	no
iOS	yes	no	no	yes
WSA (UWP) / XBox	yes	yes	yes	no
MaryTTS	no <sup>2</sup>	yes	yes	no
eSpeak	yes	yes	yes	no
AWS Polly	no	yes	yes	no
<a href="#">Klattersynth</a>	yes	no	no	no
SAPI Unity	yes	yes	no	no
<a href="#">WebGL Speech Synthesis</a>	no	no	no	no
Azure (Bing Speech)	no	yes	yes	no
<a href="#">Google Cloud Speech</a>	no	yes	yes	no

### 2.5.2. Windows

- Native rate is internally limited to 20 logarithmic distributed steps
- .NET 4.0 or higher must be installed
- Minimum Windows version: 7
- Maximal number of characters per speech: 32'000 (>35min)

**Important note:** not all SAPI-voices support SSML! If you experience a wrong voice speaking your text, the selected voice is most likely not SSML-compatible. In this case, remove all SSML-tags from your text and let RTV speak again or you could enable *Auto Clear Tags* on the Speaker-component.

### 2.5.3. macOS

- Native pitch has no effect
- Native volume has no effect
- Minimum macOS version: 10.6
- Maximal number of characters per speech: 256'000 (>4h 45min)

<sup>1</sup> Since Android M (API level 23)

<sup>2</sup> Standalone: MaryTTS could be bundled with the app installer and run locally



#### 2.5.4. Android

- Only one native voice at the time (can be solved by generating audio)
- Volume has no effect for generated audio (can be adjusted via AudioSource)
- Minimum Android version: 4.0.3 (API 15) – SSML needs 6.0 (API 23) and higher
- Maximal number of characters per speech: 3'999 (>5min)

#### 2.5.5. iOS

- Only one active native voice at the time
- Current word but no phonemes and visemes
- Minimum iOS-version: 9.0
- Maximal number of characters per speech: n/a

#### 2.5.6. WSA (UWP) / Xbox

- No native audio (only generated audio files)
- Minimum SDK-version: 10.0
- Maximal number of characters per speech: 64'000 (>1h 15min)

#### 2.5.7. MaryTTS

- Platforms: all
- Support for RAWMARYXML, SSML and EmotionML
- No native audio (only generated audio files)
- Minimum MaryTTS-version: 5.0
- Maximal number of characters per speech: depends on the server request size, but 8'000 (>10min) is realistic. Higher numbers can lead to timeouts.

#### 2.5.8. eSpeak

- Platforms: Windows, macOS, Linux and Android
- Minimum eSpeak version: 1.4.0
- Maximal number of characters per speech: 32'000 (>30min)

**Important note:** eSpeak must be installed on the target machine; see chapter 7.

### 2.5.9. AWS Polly

- Platforms: all except WebGL
- No native audio (only generated audio files)
- Maximal number of characters per speech: depends on the maximal request size, but 16'000 (>20min) is realistic. Higher numbers can lead to timeouts.

### 2.5.10. Klattersynth

- Platforms: all
- Unity AssetStore: <https://assetstore.unity.com/packages/slug/95453>
- Maximal number of characters per speech: 2'150 (>3min)

### 2.5.11. SAPI Unity

- Platforms: Windows standalone (IL2CPP)
- Only one active native voice at the time
- Native rate is internally limited to 20 logarithmic distributed steps
- Maximal number of characters per speech: 256'000 (>4h 45min)

### 2.5.12. WebGL Speech Synthesis

- Platforms: WebGL and Standalone
- Unity AssetStore: <https://assetstore.unity.com/packages/slug/81861>
- Maximal number of characters per speech: 32'000 (>30min)

### 2.5.13. Azure (Bing Speech)

- Platforms: all except WebGL
- No native audio (only generated audio)
- Maximal number of characters per speech: depends on the maximal request size, but 16'000 (>20min) is realistic. Higher numbers can lead to timeouts.

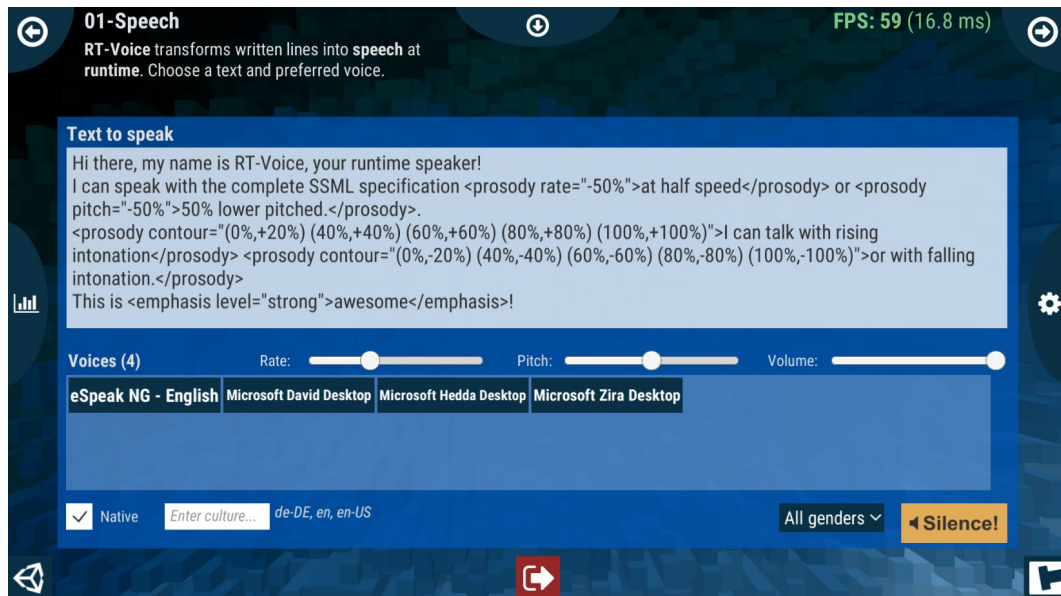
### 2.5.14. Google Cloud Speech

- Platforms: all
- Unity AssetStore: <https://assetstore.unity.com/packages/slug/115170>
- Maximal number of characters per speech: depends on the maximal request size, but 16'000 (>20min) is realistic. Higher numbers can lead to timeouts.

## 3. Demonstration

The asset comes with many demo scenes to show the main usage.

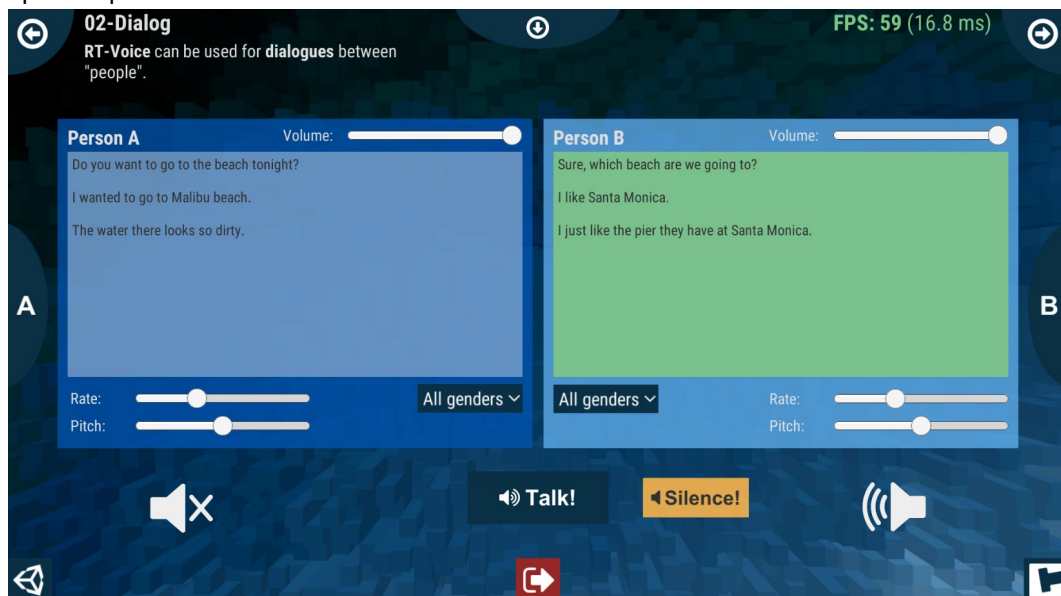
### 3.1. Speech



This demo scene shows how to transform written lines into speech. Choose the preferred voice.

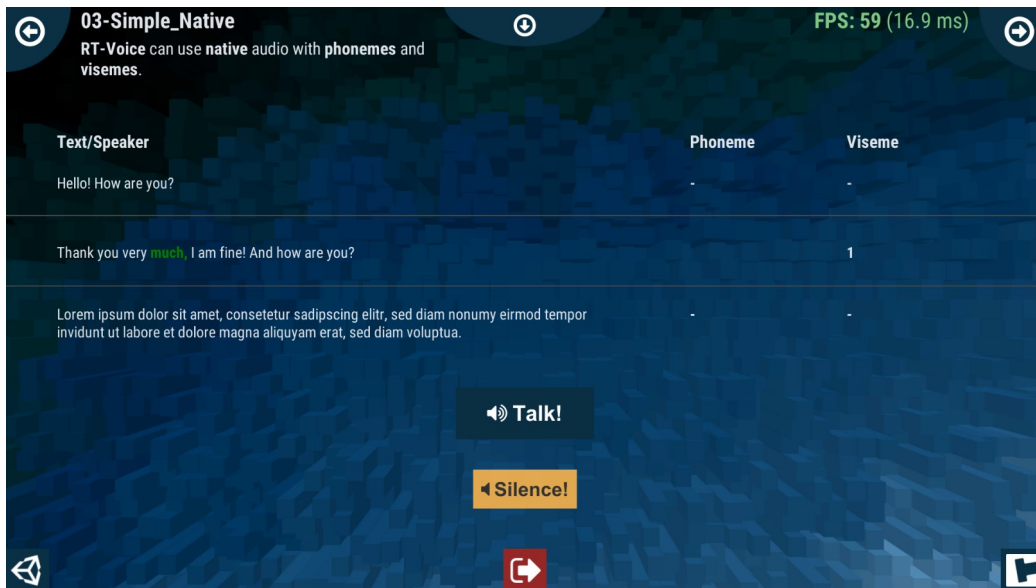
### 3.2. Dialog

In this demo scene acts out a dialogue between two "people". Choose a different voice for both participants.



### 3.3. SimpleNative

The "SimpleNative" scene shows the easiest way for native audio.



### 3.4. Simple

The "Simple" scene shows the easiest and recommended way for most purposes with generated audio.



### 3.5. 3DAudio

This scene demonstrates 3D positioned and looped audio.

Needs the [Unity Standard Assets](#)-package.

### 3.6. Loudspeakers

This scene demonstrates 3D positioned loudspeakers with only one audio origin (looped).

Needs the [Unity Standard Assets](#)-package.

### 3.7. SendMessage

This scene shows the usage of Unity's "SendMessage".

### 3.8. Sequencer

This scene shows the usage of our simple sequencer.

### 3.9. Exact and Exact\_Native

These two scenes are showing how to build applications with exact timing between audio and animations (e.g. lip sync).

### 3.10. SpeechText

This scene shows how to speak or store generated audio (see the result inside the folder "\_generatedAudio").

### 3.11. SpeechText

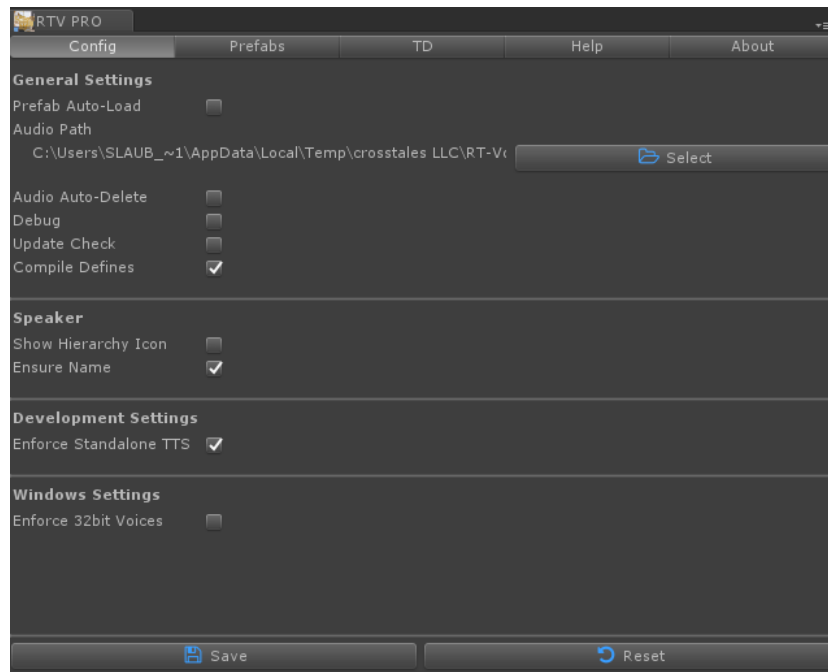
This scene shows how to speak text files with a voice (e.g. random dialogues of NPCs).

### 3.12. AudioFileGenerator

This scene shows how-to generate audio files from text files.

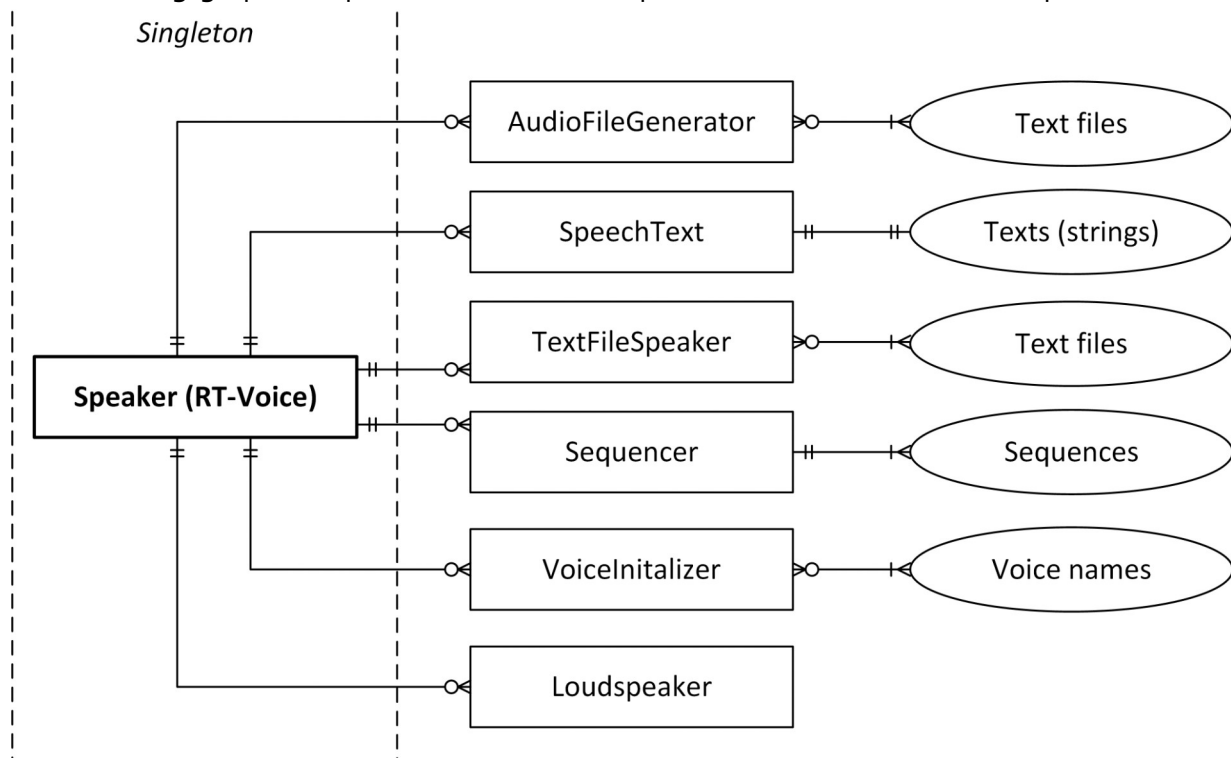
## 4. Setup

RT-Voice has global settings under "Edit\Preferences..." and under "Tools\RTVoice PRO\ Configuration...":



### 4.1. Schema

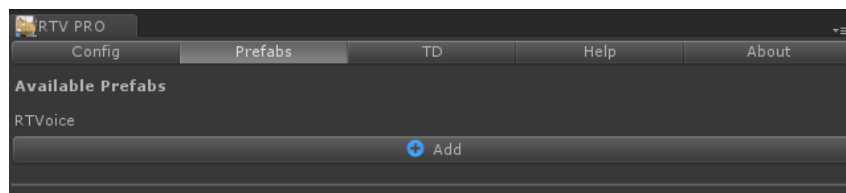
The following graphic explains the relationships between all relevant components:



## 4.2. Add RT-Voice

There are four ways to add RT-Voice to the project:

1. Add the prefab **RTVoice** from Assets/Plugins/crosstales/RTVoice/Resources/Prefabs to the scene
2. Or go to *Tools => RTVoice PRO => Prefabs => RTVoice*
3. Right-click in the *hierarchy-window => RTVoice PRO => RTVoice*
4. Add it from the Prefabs-tab:



## 4.3. Other components

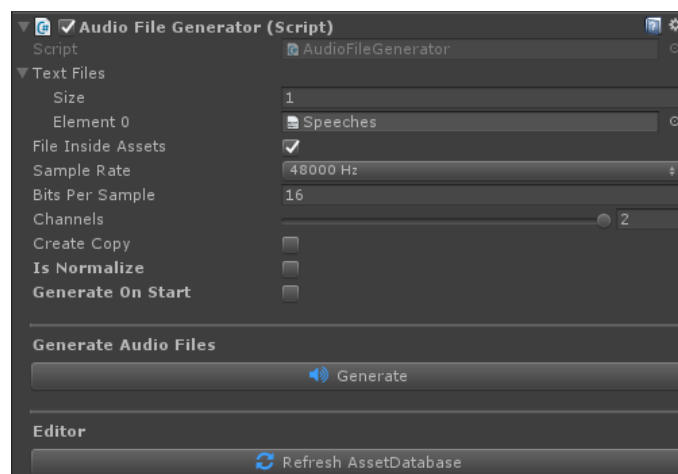
The other components can be added in the same way as "RTVoice".

### 4.3.1. AudioFileGenerator

This scene generates audio files from text files with lines like:

`#Text;Output file (without extension);Voice name;Rate;Pitch;Volume`

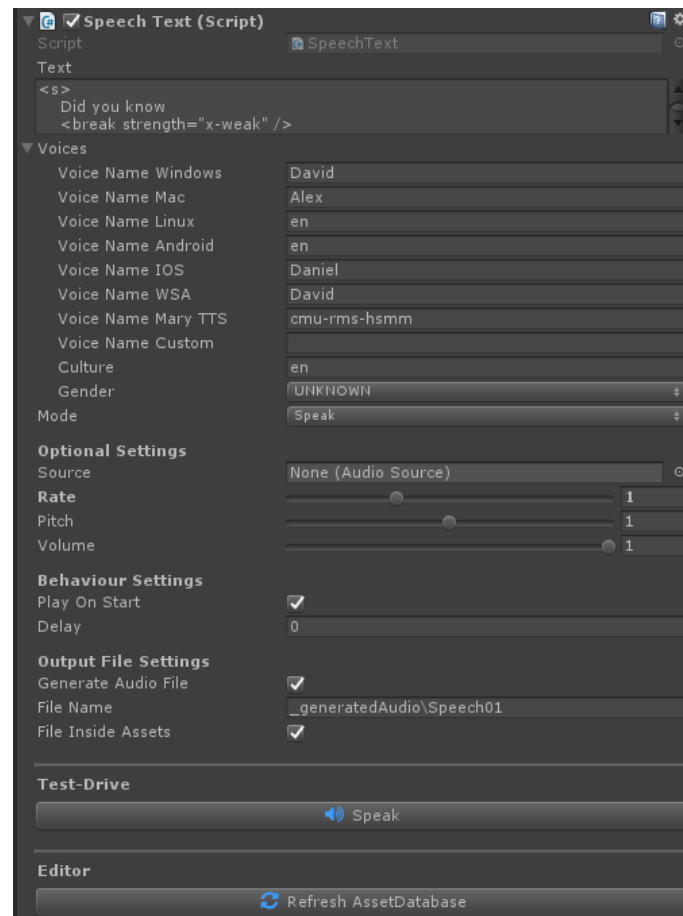
`This is a test speech;Speeches\Mary01;cmu-slt-hsmm;1.2;0.85;0.95`





### 4.3.2. SpeechText

Allows to speak and store generated audio.



### 4.3.3. Sequencer

Simple sequencer for dialogues.

### 4.3.4. Loudspeaker

Loudspeaker for an AudioSource.

This is useful to use a speech on multiple locations in the game.

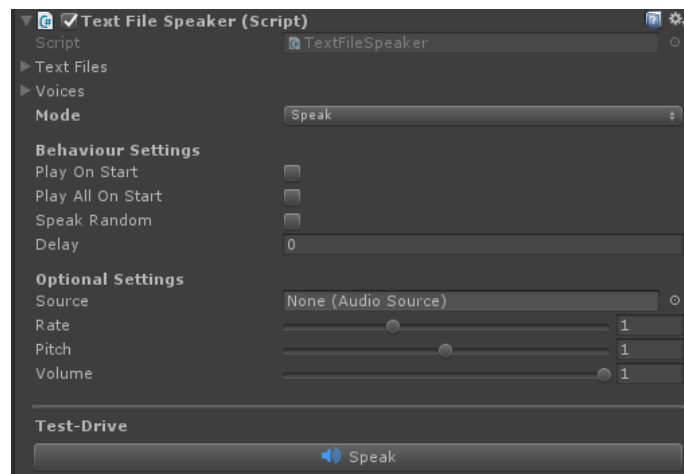
### 4.3.5. VoiceInitializer

This component allows to initialize voices to provide lag-free speeches. It's especially useful for Android.

**Add it together with RT-Voice to the first scene (e.g. splash screen).**

#### 4.3.6. TextFileSpeaker

Allows to speak text files.



#### 4.3.7. Paralanguage

Paralanguage allows to use sounds inside a speech:



It works like this: add 1-n audio clips (names without spaces). Then add text and fill in the desired clips with the # as pre- and postfix.

#### 4.3.8. GlobalCache

Caches speeches with a given voice to save time and performance (and bandwidth if an online provider is used).

It also allows to persist the generated speeches if the application is closed and re-uses them for the next run.

#### 4.3.9. PlatformProvider

This component allows to use a specific provider per platform, e.g. MaryTTS for WebGL

### 4.4. Differences between standard and native mode

In the **standard** mode the TTS-system of the OS will **convert** text to an **audio** file and return it to **Unity** as an "**AudioSource**" for further use (like changing the volume, pitch etc.).

On the other hand, the **native** mode **delegates** the speech-task **entirely** to the underlying TTS-system (outside of Unity). It offers less **control** but it uses slightly **less performance**.

We clearly **recommend** using the **standard** mode.

### 4.5. Speaker.cs vs. LiveSpeaker.cs

"Speaker.cs" is the main class of RT-Voice and presents the API via methods.

"LiveSpeaker.cs" on the other hand is a wrapper for "Speaker.cs" and presents the API as normal C#-instance via public methods. The main usage of "LiveSpeaker.cs" is as a receiver for "SendMessage"-calls.

## 4.6. MaryTTS

MaryTTS is an open-source TTS with a server, client and many voices.

It enables TTS under all Unity platforms.

Customize everything by yourself, just follow their guides:

<http://mary.dfki.de/>

To enable MaryTTS, simply check "MaryTTS" in the RTVoice-component and configure the URL and port.

### 4.6.1. Important

The default server in RT-Voice is the test server from MaryTTS.

**Never release** a product with the **default configuration** and install your own server (local/remote)!

### 4.6.2. Account for our MaryTTS-service

We offer a service for MaryTTS. It's currently free and in early beta-stage, this means it could be sometimes slow or unavailable.

If you're interested in getting a test account, [contact us](#).

### 4.6.3. Installation guide

We created a guide which should help installing a MaryTTS-server with HTTPS (needed for the WebGL-platform).

It can be found under "Assets/crosstales/RTVoice/Documentation/MaryTTS.pdf".

## 5. API

The asset contains various classes and methods. The most important are explained here. Make sure to **include** the **name space** in the relevant source files:

```
using Crosstales.RTVoice;
```

### 5.1. Speaker

The "Speaker.cs" is a singleton and contains the following important methods.

#### 5.1.1. Speak

Speaks a text with a given voice and optional AudioSource.

For example:

```
//Immediately speak "hello world" with the first available voice  
Speaker.Instance.Speak("hello world", audioSource);
```

```
//Immediately speak "hello world" with the first English voice (if available  
else it uses the first voice on the OS)  
Speaker.Instance.Speak("hello world", audioSource,  
Speaker.Instance.VoiceForCulture("en"));
```

```
// Prepare speak "hello world" with the first available voice (without  
AudioSource.Play() - this is up to you). With this technique, all audio texts  
of a scene can be created in advance and the AudioSource can be modified in  
various ways  
Speaker.Instance.Speak("hello world", audioSource, null, false);
```

#### 5.1.2. SpeakNative

Speaks a text with a given voice.

For example:

```
//Speak "hello world" with the first available voice  
Speaker.Instance.SpeakNative("hello world");
```

```
//Speak "hello world" with the first English voice (if available else it uses  
the first voice on the OS)
```

```
Speaker.Instance.SpeakNative("hello world",  
Speaker.Instance.VoiceForCulture("en"));
```

### 5.1.3. Silence

Silence all active TTS-voices.

Example:

```
//silence all voices  
Speaker.Instance.Silence();
```

### 5.1.4. Voices

```
List<Voice> Voices
```

Returns all available voices (alphabetically ordered by 'Name').

### 5.1.5. VoicesForGender

```
List<Voice> VoicesForGender(Model.Enum.Gender gender, string culture)
```

Returns all available voices for a given gender and optional culture (alphabetically ordered by 'Name').

### 5.1.6. VoiceForGender

```
Voice VoiceForGender(Model.Enum.Gender gender, string culture, int index,  
string fallbackCulture)
```

Returns a voice for the given gender and optional culture/index/fallbackCulture.

### 5.1.7. VoicesForCulture

```
List<Voice> VoicesForCulture(string culture)
```

Returns all available voices for a given culture (alphabetically ordered by 'Name').

### 5.1.8. VoiceForCulture

`voice voiceForCulture(string culture, int index, string fallbackCulture)`

Returns a voice for the given culture and optional index/fallbackCulture.

### 5.1.9. VoiceForName

`Voice voiceForName(string name)`

Returns the voice for the given name or null if not found.

### 5.1.10. Cultures

`List<string> cultures`

Returns all available cultures (alphabetically ordered by 'Culture').

## 5.2. Callbacks

There are various callbacks available. Subscribe them in the "Start"-method and unsubscribe in "OnDestroy".

### 5.2.1. Voices ready

```
VoicesReady();
```

```
VoicesReady OnVoicesReady;
```

Triggered as soon as the voices of a provider are ready to use.

### 5.2.2. Speak start and complete

```
SpeakStart(wrapper wrapper);
```

```
SpeakStart OnSpeakStart;
```

Triggered whenever a speak is started.

```
SpeakComplete(wrapper wrapper);
```

```
SpeakComplete OnSpeakComplete;
```

Triggered whenever a native speak is completed.

### 5.2.1. Current word (native, Windows and iOS only)

```
SpeakCurrentWord(wrapper wrapper, string[] speechTextArray, int wordIndex);
```

```
SpeakCurrentWord OnSpeakCurrentWord;
```

Triggered whenever a new word is spoken (native, Windows and iOS only).

### 5.2.2. Current phoneme (native, Windows only)

```
SpeakCurrentPhoneme(wrapper wrapper, string phoneme);
```

```
SpeakCurrentPhoneme OnSpeakCurrentPhoneme;
```

Triggered whenever a new phoneme is spoken (native mode, Windows only).

### 5.2.3. Current viseme (native, Windows only)

```
SpeakCurrentViseme(wrapper wrapper, string viseme);
```

```
SpeakCurrentViseme OnSpeakCurrentViseme;
```

Triggered whenever a new viseme is spoken (native mode, Windows only).



#### 5.2.4. Speak audio generation start and complete

`SpeakAudioGenerationStart(wrapper wrapper);`

`SpeakAudioGenerationStart` **`OnSpeakAudioGenerationStart`**;

Triggered whenever a speak audio generation is started.

`SpeakAudioGenerationComplete(wrapper wrapper);`

`SpeakAudioGenerationComplete` **`OnSpeakAudioGenerationComplete`**;

Triggered whenever a speak audio generation is completed.

#### 5.2.5. Provider change

`ProviderChange(string provider);`

`ProviderChange` **`OnProviderChange`**;

Triggered whenever a provider changes (e.g. from Windows to MaryTTS).

#### 5.2.6. Errors

`ErrorInfo(string info);`

`ErrorInfo` **`OnErrorInfo`**;

Triggered whenever an error occurs.

### 5.2.7. Example

Wait until all voices are ready. Then speak the text and get informed when it starts and completes:

```
using UnityEngine;
using Crosstales.RTVoice;
using Crosstales.RTVoice.Model;

public class SimpleExample : MonoBehaviour {
    public void OnEnable() {
        // Subscribe event listeners
        Speaker.Instance.OnVoicesReady += voicesReady;
        Speaker.Instance.OnSpeakStart += speakStart;
        Speaker.Instance.OnSpeakComplete += speakComplete;
    }

    public void OnDisable() {
        // Unsubscribe event listeners
        Speaker.Instance.OnVoicesReady -= voicesReady;
        Speaker.Instance.OnSpeakStart -= speakStart;
        Speaker.Instance.OnSpeakComplete -= speakComplete;
    }

    private void voicesReady() {
        Debug.Log("Voices are ready!");
        Speaker.Instance.SpeakNative("Hello world!");
    }

    private void speakStart(wrapper wrapper) {
        Debug.Log("speakStart: " + wrapper);
    }

    private void speakComplete(wrapper wrapper) {
        Debug.LogWarning("speakComplete: " + wrapper);
    }
}
```

## 5.3. Complete API

For more details, please see the [RTVoice-api.pdf](#)

## 6. Additional voices

RT-Voice works great with third-party voices (e.g. [Cereproc](#)).

### 6.1. Windows

All SAPI5-compatible voices are supported. Microsoft also provides a wide range of voices for different languages:

<https://support.microsoft.com/en-us/topic/how-to-download-text-to-speech-languages-for-windows-10-d5a6b612-b3ae-423f-afa5-4f6caf1ec5d3?ui=en-us&rs=en-us&ad=us>

There are many free and commercial voices available. Here is a site with more than 36 free voices in 13 languages:

<https://zero2000.com/free-text-to-speech-natural-voices.html>

### 6.2. macOS

Apple delivers many voices for different languages. To add or customize them, follow the tutorial below:

<http://osxdaily.com/2011/07/25/how-to-add-new-voices-to-mac-os-x/>

### 6.3. Android

The default engine on Android is normally the one from Google: *com.google.android.tts*

Follow the link to add various voices on an Android phone:

<http://hyperionics.com/TtsSetup/eng/TtsInfo.html>

### 6.4. iOS

Follow the link to change the quality of the installed voices:

<https://support.apple.com/en-us/HT202362>

### 6.5. WSA (UWP) / XBox

See 6.1.

## 6.6. MaryTTS

<http://mary.dfki.de/>

## 6.7. eSpeak

<http://espeak.sourceforge.net/languages.html>

# 7. Setup eSpeak

eSpeak and esSpeak-NG are open-source TTS solutions that work under Windows, macOS, Linux and Android.

To take advantage of it, please install it on the PC.

## 7.1. Windows

[http://sourceforge.net/projects/espeak/files/espeak/espeak-1.48/setup\\_espeak-1.48.04.exe](http://sourceforge.net/projects/espeak/files/espeak/espeak-1.48/setup_espeak-1.48.04.exe)

## 7.1. macOS

<http://sourceforge.net/projects/espeak/files/espeak/espeak-1.45/espeak-1.45.04-OSX.zip>

## 7.2. Linux

```
sudo apt-get install espeak
```

## 7.3. eSpeak-NG

<https://github.com/espeak-ng/espeak-ng#binaries>

## 8. Third-party support (PlayMaker etc.)

RT-Voice supports various products from other companies. Please import the desired packages from "Assets/Plugins/crosstales/RTVoice/3rd party".

## 9. Verify installation

Check if RT-Voice is installed:

```
#if CT_RTV
    Debug.Log("RTV installed: " + Util.Constants.ASSET_VERSION);
#else
    Debug.LogWarning("RTV NOT installed!");
#endif
```

## 10. Upgrade to new version

Follow this steps to upgrade the version of "RT-Voice PRO":

1. Update "RT-Voice PRO" to the latest version from the "Unity AssetStore"
2. Inside the project in Unity, go to menu "File" => "New Scene"
3. Delete the "Assets/Plugins/crosstales/RTVoice" folder from the Project-view
4. Import the latest version downloaded from the "Unity AssetStore"

## 11. Important notes

### 11.1. Oculus Quest 2

The Oculus Quest 2 is runs technically on Android, but has no TTS engine installed:

<https://forums.oculusvr.com/developer/discussion/78403/oculus-quest-text-to-speech>

Pre-generate the speeches or use an online solution instead.

## 12. Problems, improvements etc.

If you encounter any problems with this asset, just [send us an email](#) with a problem description and the invoice number and we will try to solve it

## 13. Release notes

See "VERSIONS.txt" under "Assets/crosstales/RTVoice/Documentation" or online:

<https://crosstales.com/media/data/assets/rtvoice/VERSIONS.txt>

## 14. Credits

The icons are based on [Font Awesome](#).

## 15. Contact and further information





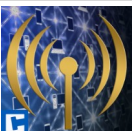
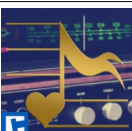
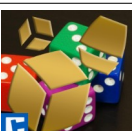
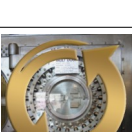
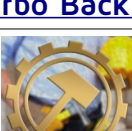
**crosstales** LLC

Schanzeneggstrasse 1

CH-8002 Zürich

Homepage:	<a href="https://www.crosstales.com/en/portfolio/rtvoice/">https://www.crosstales.com/en/portfolio/rtvoice/</a>
Email:	<a href="mailto:rtvoice@crosstales.com">rtvoice@crosstales.com</a>
AssetStore:	<a href="https://assetstore.unity.com/lists/crosstales-42213">https://assetstore.unity.com/lists/crosstales-42213</a>
Forum:	<a href="https://forum.unity.com/threads/rt-voice-run-time-text-to-speech-solution.340046/">https://forum.unity.com/threads/rt-voice-run-time-text-to-speech-solution.340046/</a>
Documentation:	<a href="https://www.crosstales.com/media/data/assets/rtvoice/RTVoice-doc.pdf">https://www.crosstales.com/media/data/assets/rtvoice/RTVoice-doc.pdf</a>
API:	<a href="https://www.crosstales.com/en/assets/rtvoice/api/">https://www.crosstales.com/en/assets/rtvoice/api/</a>
WebGL-Demo:	<a href="https://www.crosstales.com/media/data/assets/rtvoice/webgl/">https://www.crosstales.com/media/data/assets/rtvoice/webgl/</a>
Windows-Demo:	<a href="https://drive.google.com/file/d/11BFDLbj9vmyrfltXeS_d9zK3oM9h8TaS/view?usp=sharing">https://drive.google.com/file/d/11BFDLbj9vmyrfltXeS_d9zK3oM9h8TaS/view?usp=sharing</a>
Mac-Demo:	<a href="https://drive.google.com/file/d/11A7u7g7Cs63Bu7lv7ER9KFTVCU9oWAaT/view?usp=sharing">https://drive.google.com/file/d/11A7u7g7Cs63Bu7lv7ER9KFTVCU9oWAaT/view?usp=sharing</a>
Linux-Demo:	<a href="https://drive.google.com/file/d/1XViADtStr8NXKHPMejXQ6iY4C2U_Bh3o/view?usp=sharing">https://drive.google.com/file/d/1XViADtStr8NXKHPMejXQ6iY4C2U_Bh3o/view?usp=sharing</a>
Android-Demo:	<a href="https://drive.google.com/file/d/11FUbfuvSAAT5JgdolUKZO1sCPkTAFYJG/view?usp=sharing">https://drive.google.com/file/d/11FUbfuvSAAT5JgdolUKZO1sCPkTAFYJG/view?usp=sharing</a>

## 16. Our other assets

 <p><a href="#">3D Skybox</a></p>	<p>Those beautiful packages contain professional 8k, HDR, stereoscopic 360° real-world skyboxes for your projects.</p>
 <p><a href="#">Bad Word Filter</a></p>	<p>The "Bad Word Filter" (aka profanity or obscenity filter) is exactly what the title suggests: a tool to filter swearwords and other "bad sentences".</p>
 <p><a href="#">DJ</a></p>	<p>DJ is a player for external music-files. It allows a user to play his own sound inside any Unity-app. It can also read ID3-tags.</p>
 <p><a href="#">File Browser</a></p>	<p>File Browser is a wrapper for native file dialogs on Windows, macOS, Linux and UWP (WSA).</p>
 <p><a href="#">Online Check</a></p>	<p>You need a reliable solution to check for <b>Internet availability</b>? Here it is!</p>
 <p><a href="#">Radio</a></p>	<p>Radio allows implementing free music from Internet radio stations into your project..</p>
 <p><a href="#">True Random</a></p>	<p>True Random can generate "true random" numbers for you and your application. The randomness comes from atmospheric noise, which for many purposes is better than the pseudo-random number algorithms typically used in computer programs.</p>
 <p><a href="#">Turbo Backup</a></p>	<p>Turbo Backup is the fastest and safest way to backup your Unity project. It only stores the difference between the last backup, this makes it incredible fast.</p>
 <p><a href="#">Turbo Builder</a></p>	<p>Turbo Builder creates builds for multiple platforms in one click. It works together with <a href="#">Turbo Switch</a> to offer an incredible fast build pipeline.</p>





[Turbo Switch](#)

Turbo Switch is a Unity editor extension to reduce the time for assets to import during platform switches. We measured speed improvements up to 100x faster than the built-in switch in Unity.

## 17. Appendix

### 17.1. Voices

The voices of all available providers ordered by language.

Please see chapter 6 on how-to add additional voices.

#### 17.1.1. Windows

Windows 10 (64bit, tested: 28.04.2020)

Number of voices: 24 (but can easily be extended with additional voices)

Name	Gender	Language
Microsoft Server Speech Text to Speech Voice (ca-ES, Herenā)	FEMALE	ca-ES
Microsoft Server Speech Text to Speech Voice (da-DK, Helle)	FEMALE	da-DK
Microsoft Hedda Desktop	FEMALE	de-DE
Microsoft Server Speech Text to Speech Voice (en-AU, Hayley)	FEMALE	en-AU
Microsoft Server Speech Text to Speech Voice (en-CA, Heather)	FEMALE	en-CA
Microsoft Server Speech Text to Speech Voice (en-IN, Heera)	FEMALE	en-IN
Microsoft Server Speech Text to Speech Voice (en-US, Helen)	FEMALE	en-US
Microsoft Server Speech Text to Speech Voice (en-US, ZiraPro)	FEMALE	en-US
Microsoft Zira Desktop	FEMALE	en-US
Microsoft Server Speech Text to Speech Voice (es-ES, Helena)	FEMALE	es-ES
Microsoft Server Speech Text to Speech Voice (es-MX, Hilda)	FEMALE	es-MX
Microsoft Server Speech Text to Speech Voice (fi-FI, Heidi)	FEMALE	fi-FI
Microsoft Server Speech Text to Speech Voice (fr-CA, Harmonie)	FEMALE	fr-CA
Microsoft Server Speech Text to Speech Voice (fr-FR, Hortense)	FEMALE	fr-FR
Microsoft Server Speech Text to Speech Voice (it-IT, Lucia)	FEMALE	it-IT
Microsoft Server Speech Text to Speech Voice (ja-JP, Haruka)	FEMALE	ja-JP
Microsoft Server Speech Text to Speech Voice (ko-KR, Hyeonja)	FEMALE	ko-KR

Heami)		
Microsoft Server Speech Text to Speech Voice (nb-NO, Hulda)	FEMALE	nb-NO
Microsoft Server Speech Text to Speech Voice (nl-NL, Hanna)	FEMALE	nl-NL
Microsoft Server Speech Text to Speech Voice (pl-PL, Paulina)	FEMALE	pl-PL
Microsoft Server Speech Text to Speech Voice (pt-BR, Heloisa)	FEMALE	pt-BR
Microsoft Server Speech Text to Speech Voice (pt-PT, Helia)	FEMALE	pt-PT
Microsoft Server Speech Text to Speech Voice (ru-RU, Elena)	FEMALE	ru-RU
Microsoft Server Speech Text to Speech Voice (sv-SE, Hedvig)	FEMALE	sv-SE

**17.1.2. macOS**

Version 10.15.3 (tested: 28.04.2020)

Number of voices: 46

<b>Name</b>	<b>Gender</b>	<b>Language</b>
Maged	MALE	ar-SA
Zuzana	FEMALE	cs-CZ
Sara	FEMALE	da-DK
Anna	FEMALE	de-DE
Melina	FEMALE	el-GR
Karen	FEMALE	en-AU
Daniel	MALE	en-GB
Moirā	FEMALE	en-IE
Rishi	UNKNOWN	en-IN
Veena	FEMALE	en-IN
Fiona	FEMALE	en-scotland
Fred	MALE	en-US
Samantha	FEMALE	en-US
Victoria	FEMALE	en-US
Tessa	FEMALE	en-ZA
Diego	MALE	es-AR
Jorge	MALE	es-ES
Monica	FEMALE	es-ES
Juan	MALE	es-MX
Paulina	FEMALE	es-MX
Satu	FEMALE	fi-FI
Amelie	FEMALE	fr-CA
Thomas	MALE	fr-FR
Carmit	FEMALE	he-IL
Lekha	FEMALE	hi-IN
Mariska	FEMALE	hu-HU
Damayanti	FEMALE	id-ID
Luca	MALE	it-IT
Kyoko	FEMALE	ja-JP
Yuna	FEMALE	ko-KR
Nora	FEMALE	nb-NO
Ellen	FEMALE	nl-BE
Xander	MALE	nl-NL
Zosia	FEMALE	pl-PL
Luciana	FEMALE	pt-BR
Joana	FEMALE	pt-PT
Ioana	FEMALE	ro-RO
Milena	FEMALE	ru-RU
Yuri	MALE	ru-RU
Laura	FEMALE	sk-SK

Alva	FEMALE	sv-SE
Kanya	FEMALE	th-TH
Yelda	FEMALE	tr-TR
Ting-Ting	FEMALE	zh-CN
Sin-ji	FEMALE	zh-HK
Mei-Jia	FEMALE	zh-TW

**17.1.3.Android**

Version 11 (Google TTS, tested: 27.08.2021)

Number of voices: 227

<b>Name</b>	<b>Gender</b>	<b>Language</b>
ar-language	FEMALE	ar
ar-xa-x-arc-local	FEMALE	ar
ar-xa-x-ard-local	MALE	ar
ar-xa-x-are-local	MALE	ar
ar-xa-x-arz-local	FEMALE	ar
bn-BD-language	MALE	bn-BD
bn-bd-x-ban-local	MALE	bn-BD
bn-IN-language	FEMALE	bn-IN
bn-in-x-bin-local	MALE	bn-IN
bn-in-x-bnf-local	FEMALE	bn-IN
bn-in-x-bnm-local	MALE	bn-IN
bn-in-x-bnx-local	FEMALE	bn-IN
bs	FEMALE	bs
ca	FEMALE	ca
cmn-cn-x-ccc-local	FEMALE	zh-CN
cmn-cn-x-ccd-local	MALE	zh-CN
cmn-cn-x-cce-local	MALE	zh-CN
cmn-cn-x-ssa-local	FEMALE	zh-CN
cmn-tw-x-ctc-local	FEMALE	zh-TW
cmn-tw-x-ctd-local	MALE	zh-TW
cmn-tw-x-cte-local	MALE	zh-TW
cs-CZ-language	FEMALE	cs-CZ
cs-cz-x-jfs-local	FEMALE	cs-CZ
cy	FEMALE	cy
da-DK-language	FEMALE	da-DK
da-dk-x-kfm-local	FEMALE	da-DK
da-dk-x-nmm-local	MALE	da-DK
da-dk-x-sfp-local	FEMALE	da-DK
da-dk-x-vfb-local	FEMALE	da-DK
de-DE-language	FEMALE	de-DE
de-de-x-deb-local	MALE	de-DE
de-de-x-deg-local	MALE	de-DE
de-de-x-nfh-local	FEMALE	de-DE
el-GR-language	FEMALE	el-GR
el-gr-x-vfz-local	FEMALE	el-GR
en-AU-language	FEMALE	en-AU
en-au-x-afh-local	FEMALE	en-AU
en-au-x-aua-local	FEMALE	en-AU
en-au-x-aub-local	MALE	en-AU
en-au-x-auc-local	FEMALE	en-AU

en-au-x-aud-local	MALE	en-AU
en-GB-language	FEMALE	en-GB
en-gb-x-fis-local	FEMALE	en-GB
en-gb-x-gba-local	FEMALE	en-GB
en-gb-x-gbb-local	MALE	en-GB
en-gb-x-gbc-local	FEMALE	en-GB
en-gb-x-gbd-local	MALE	en-GB
en-gb-x-gbg-local	FEMALE	en-GB
en-gb-x-rjs-local	MALE	en-GB
en-IN-language	FEMALE	en-IN
en-in-x-ahp-local	FEMALE	en-IN
en-in-x-cxx-local	FEMALE	en-IN
en-in-x-ena-local	FEMALE	en-IN
en-in-x-enc-local	FEMALE	en-IN
en-in-x-end-local	MALE	en-IN
en-in-x-ene-local	MALE	en-IN
en-NG-language	FEMALE	en-NG
en-ng-x-tfn-local	FEMALE	en-NG
en-US-language	FEMALE	en-US
en-us-x-iob-local	FEMALE	en-US
en-us-x-iog-local	FEMALE	en-US
en-us-x-iol-local	MALE	en-US
en-us-x-iom-local	MALE	en-US
en-us-x-sfg-local	FEMALE	en-US
en-us-x-tpc-local	FEMALE	en-US
en-us-x-tpd-local	MALE	en-US
en-us-x-tpf-local	FEMALE	en-US
es-ES-language	FEMALE	es-ES
es-es-x-eea-local	FEMALE	es-ES
es-es-x-eec-local	FEMALE	es-ES
es-es-x-eed-local	MALE	es-ES
es-es-x-eee-local	FEMALE	es-ES
es-es-x-eef-local	MALE	es-ES
es-US-language	FEMALE	es-US
es-us-x-esc-local	FEMALE	es-US
es-us-x-esd-local	MALE	es-US
es-us-x-esf-local	MALE	es-US
et-EE-language	MALE	et-EE
et-ee-x-tms-local	MALE	et-EE
fi-FI-language	FEMALE	fi-FI
fi-fi-x-afi-local	FEMALE	fi-FI
fil-PH-language	FEMALE	fil-PH
fil-ph-x-cfc-local	FEMALE	fil-PH
fil-ph-x-fic-local	FEMALE	fil-PH
fil-ph-x-fid-local	MALE	fil-PH
fil-ph-x-fie-local	MALE	fil-PH
fr-CA-language	FEMALE	fr-CA

fr-ca-x-caa-local	FEMALE	fr-CA
fr-ca-x-cab-local	MALE	fr-CA
fr-ca-x-cac-local	FEMALE	fr-CA
fr-ca-x-cad-local	MALE	fr-CA
fr-FR-language	FEMALE	fr-FR
fr-fr-x-frā-local	FEMALE	fr-FR
fr-fr-x-frb-local	MALE	fr-FR
fr-fr-x-frc-local	FEMALE	fr-FR
fr-fr-x-frd-local	MALE	fr-FR
fr-fr-x-vlf-local	FEMALE	fr-FR
gu-IN-language	FEMALE	gu-IN
gu-in-x-guf-local	FEMALE	gu-IN
gu-in-x-gum-local	MALE	gu-IN
hi-IN-language	FEMALE	hi-IN
hi-in-x-cfn-local	FEMALE	hi-IN
hi-in-x-hia-local	FEMALE	hi-IN
hi-in-x-hic-local	FEMALE	hi-IN
hi-in-x-hid-local	MALE	hi-IN
hi-in-x-hie-local	MALE	hi-IN
hr	FEMALE	hr
hu-HU-language	FEMALE	hu-HU
hu-hu-x-kfl-local	FEMALE	hu-HU
id-ID-language	FEMALE	in-ID
id-id-x-dfz-local	FEMALE	in-ID
id-id-x-idc-local	FEMALE	in-ID
id-id-x-idd-local	MALE	in-ID
id-id-x-ide-local	MALE	in-ID
it-IT-language	FEMALE	it-IT
it-it-x-itb-local	FEMALE	it-IT
it-it-x-itc-local	MALE	it-IT
it-it-x-itd-local	MALE	it-IT
it-it-x-kda-local	FEMALE	it-IT
jā-JP-language	FEMALE	jā-JP
jā-jp-x-htm-local	FEMALE	jā-JP
jā-jp-x-jāb-local	FEMALE	jā-JP
jā-jp-x-jāc-local	MALE	jā-JP
jā-jp-x-jād-local	MALE	jā-JP
jv-ID-language	FEMALE	jv-ID
jv-id-x-jvf-local	FEMALE	jv-ID
km-KH-language	FEMALE	km-KH
km-kh-x-khm-local	FEMALE	km-KH
kn-IN-language	FEMALE	kn-IN
kn-in-x-knf-local	FEMALE	kn-IN
kn-in-x-knm-local	MALE	kn-IN
ko-KR-language	FEMALE	ko-KR
ko-kr-x-ism-local	FEMALE	ko-KR
ko-kr-x-kob-local	FEMALE	ko-KR



ko-kr-x-koc-local	MALE	ko-KR
ko-kr-x-kod-local	MALE	ko-KR
ku	FEMALE	ku
la	FEMALE	la
ml-IN-language	FEMALE	ml-IN
ml-in-x-mlf-local	FEMALE	ml-IN
ml-in-x-mlm-local	MALE	ml-IN
mr-IN-language	FEMALE	mr-IN
mr-in-x-mrf-local	FEMALE	mr-IN
ms-MY-language	FEMALE	ms-MY
ms-my-x-msc-local	FEMALE	ms-MY
ms-my-x-msd-local	MALE	ms-MY
ms-my-x-mse-local	FEMALE	ms-MY
ms-my-x-msg-local	MALE	ms-MY
nb-NO-language	FEMALE	nb-NO
nb-no-x-cfl-local	FEMALE	nb-NO
nb-no-x-cmj-local	MALE	nb-NO
nb-no-x-rfj-local	FEMALE	nb-NO
nb-no-x-tfs-local	FEMALE	nb-NO
nb-no-x-tmg-local	MALE	nb-NO
ne-NP-language	FEMALE	ne-NP
ne-np-x-nep-local	FEMALE	ne-NP
nl-NL-language	FEMALE	nl-NL
nl-nl-x-bmh-local	MALE	nl-NL
nl-nl-x-dma-local	MALE	nl-NL
nl-nl-x-lfc-local	FEMALE	nl-NL
nl-nl-x-tfb-local	FEMALE	nl-NL
nl-nl-x-yfr-local	FEMALE	nl-NL
pl-PL-language	FEMALE	pl-PL
pl-pl-x-afb-local	FEMALE	pl-PL
pl-pl-x-bmg-local	MALE	pl-PL
pl-pl-x-jmk-local	MALE	pl-PL
pl-pl-x-oda-local	FEMALE	pl-PL
pl-pl-x-zfg-local	FEMALE	pl-PL
pt-BR-language	FEMALE	pt-BR
pt-br-x-afs-local	FEMALE	pt-BR
pt-PT-language	FEMALE	pt-PT
pt-pt-x-jfb-local	FEMALE	pt-PT
pt-pt-x-jmn-local	MALE	pt-PT
pt-pt-x-pmj-local	MALE	pt-PT
pt-pt-x-sfs-local	FEMALE	pt-PT
ro-RO-language	FEMALE	ro-RO
ro-ro-x-vfv-local	FEMALE	ro-RO
ru-RU-language	FEMALE	ru-RU
ru-ru-x-dfc-local	FEMALE	ru-RU
ru-ru-x-ruc-local	FEMALE	ru-RU
ru-ru-x-rud-local	MALE	ru-RU

ru-ru-x-rue-local	FEMALE	ru-RU
ru-ru-x-ruf-local	MALE	ru-RU
si-LK-language	FEMALE	si-LK
si-lk-x-sin-local	FEMALE	si-LK
sk-SK-language	FEMALE	sk-SK
sk-sk-x-sfk-local	FEMALE	sk-SK
sq	FEMALE	sq
sr	FEMALE	sr
su-ID-language	FEMALE	su-ID
su-id-x-suf-local	FEMALE	su-ID
sv-SE-language	FEMALE	sv-SE
sv-se-x-lfs-local	FEMALE	sv-SE
sw	FEMALE	sw
ta-IN-language	FEMALE	ta-IN
ta-in-x-taf-local	FEMALE	ta-IN
ta-in-x-tag-local	MALE	ta-IN
te-IN-language	FEMALE	te-IN
te-in-x-tef-local	FEMALE	te-IN
te-in-x-tem-local	MALE	te-IN
th-TH-language	FEMALE	th-TH
th-th-x-mol-local	FEMALE	th-TH
tr-TR-language	FEMALE	tr-TR
tr-tr-x-amā-local	MALE	tr-TR
tr-tr-x-cfs-local	FEMALE	tr-TR
tr-tr-x-efu-local	FEMALE	tr-TR
tr-tr-x-mfm-local	FEMALE	tr-TR
tr-tr-x-tmc-local	MALE	tr-TR
uk-UA-language	FEMALE	uk-UA
uk-ua-x-hfd-local	FEMALE	uk-UA
ur-PK-language	FEMALE	ur-PK
ur-pk-x-cfn-local	FEMALE	ur-PK
ur-pk-x-urm-local	MALE	ur-PK
vi-VN-language	FEMALE	vi-VN
vi-vn-x-gft-local	FEMALE	vi-VN
vi-vn-x-vic-local	FEMALE	vi-VN
vi-vn-x-vid-local	MALE	vi-VN
vi-vn-x-vie-local	FEMALE	vi-VN
vi-vn-x-vif-local	MALE	vi-VN
yue-HK-language	FEMALE	yue-HK
yue-hk-x-jar-local	FEMALE	yue-HK
yue-hk-x-yuc-local	FEMALE	yue-HK
yue-hk-x-yud-local	MALE	yue-HK
yue-hk-x-yue-local	FEMALE	yue-HK
yue-hk-x-yuf-local	MALE	yue-HK
zh-CN-language	FEMALE	zh-CN
zh-TW-language	FEMALE	zh-TW

**17.1.4.iOS**

Version 13.3.1 (tested: 28.04.2020)

Number of voices: 52

<b>Name</b>	<b>Gender</b>	<b>Language</b>
Maged	MALE	ar-SA
Zuzana	FEMALE	cs-CZ
Sara	FEMALE	da-DK
Anna	FEMALE	de-DE
Helena	FEMALE	de-DE
Martin	MALE	de-DE
Melina	FEMALE	el-GR
Catherine	FEMALE	en-AU
Gordon	MALE	en-AU
Karen	FEMALE	en-AU
Arthur	MALE	en-GB
Daniel	MALE	en-GB
Martha	FEMALE	en-GB
Moirá	FEMALE	en-IE
Rishi	UNKNOWN	en-IN
Fred	MALE	en-US
Nicky	FEMALE	en-US
Samantha	FEMALE	en-US
Tessa	FEMALE	en-ZA
Mónica	FEMALE	es-ES
Paulina	FEMALE	es-MX
Satu	FEMALE	fi-FI
Amélie	FEMALE	fr-CA
Daniel	MALE	fr-FR
Marie	FEMALE	fr-FR
Thomas	MALE	fr-FR
Carmit	FEMALE	he-IL
Lekha	FEMALE	hi-IN
Mariska	FEMALE	hu-HU
Damayanti	FEMALE	id-ID
Alice	FEMALE	it-IT
Hattori	MALE	ja-JP
Kyoko	FEMALE	ja-JP
O-ren	FEMALE	ja-JP
Yuna	FEMALE	ko-KR
Ellen	FEMALE	nl-BE
Xander	MALE	nl-NL
Nora	FEMALE	no-NO
Zosia	FEMALE	pl-PL
Luciana	FEMALE	pt-BR

Joana	FEMALE	pt-PT
Ioana	FEMALE	ro-RO
Milena	FEMALE	ru-RU
Laura	FEMALE	sk-SK
Alva	FEMALE	sv-SE
Kanya	FEMALE	th-TH
Yelda	FEMALE	tr-TR
Li-mu	FEMALE	zh-CN
Tian-Tian	UNKNOWN	zh-CN
Yu-shu	FEMALE	zh-CN
Sin-Ji	FEMALE	zh-HK
Mei-Jia	FEMALE	zh-TW

#### **17.1.5.WSA (UWP) / XBox**

Depends on the installed voices.

**17.1.6. MaryTTS**

Version 5.2 (tested: 27.08.2021)

Number of voices: 32

<b>Name</b>	<b>Gender</b>	<b>Language</b>
bits1	FEMALE	de
bits1-hsmm	FEMALE	de
bits2	MALE	de
bits3	MALE	de
bits3-hsmm	MALE	de
bits4	FEMALE	de
dfki-pavoque-neutral	MALE	de
dfki-pavoque-neutral-hsmm	MALE	de
dfki-obadiah	MALE	en-GB
dfki-obadiah-hsmm	MALE	en-GB
dfki-poppy	FEMALE	en-GB
dfki-poppy-hsmm	FEMALE	en-GB
dfki-prudence	FEMALE	en-GB
dfki-prudence-hsmm	FEMALE	en-GB
dfki-spike	MALE	en-GB
dfki-spike-hsmm	MALE	en-GB
cmu-bdl	MALE	en-US
cmu-bdl-hsmm	MALE	en-US
cmu-rms	MALE	en-US
cmu-rms-hsmm	MALE	en-US
cmu-slt	FEMALE	en-US
cmu-slt-hsmm	FEMALE	en-US
enst-camille	FEMALE	fr
enst-camille-hsmm	FEMALE	fr
enst-dennys-hsmm	MALE	fr
upmc-jessica	FEMALE	fr
upmc-jessica-hsmm	FEMALE	fr
upmc-pierre	MALE	fr
upmc-pierre-hsmm	MALE	fr
istc-lucia-hsmm	FEMALE	it
dfki-ot	MALE	tr
dfki-ot-hsmm	MALE	tr

**17.1.7. eSpeak**

Version 1.48.03 (tested: 27.08.2021)

Number of voices: 83

<b>Name</b>	<b>Gender</b>	<b>Language</b>
amharic-test	UNKNOWN	am
aragonese	MALE	an
assamese-test	UNKNOWN	as
azerbaijani-test	UNKNOWN	az
bulgarian	UNKNOWN	bg
bengali-test	MALE	bn
bosnian	MALE	bs
catalan	MALE	ca
czech	MALE	cs
welsh	MALE	cy
danish	MALE	da
german	MALE	de
greek	MALE	el
default	MALE	en
english	MALE	en-gb
en-scottish	MALE	en-sc
english-north	MALE	en-uk-north
english_rp	MALE	en-uk-rp
english_wmids	MALE	en-uk-wmids
english-us	MALE	en-us
en-westindies	MALE	en-wi
esperanto	MALE	eo
spanish	MALE	es
spanish-latin-am	MALE	es-la
estonian	UNKNOWN	et
basque-test	UNKNOWN	eu
persian	UNKNOWN	fa
persian-pinglish	UNKNOWN	fa-pin
finnish	MALE	fi
french-Belgium	MALE	fr-be
french	MALE	fr-fr
irish-gaelge	UNKNOWN	ga
scottish-gaelic-test	UNKNOWN	gd
greek-ancient	MALE	grc
gujarati-test	UNKNOWN	gu
hindi	MALE	hi
croatian	MALE	hr
hungarian	MALE	hu
armenian	MALE	hy
armenian-west	MALE	hy-west

indonesian	MALE	id
icelandic	MALE	is
italian	MALE	it
lojban	UNKNOWN	jbo
georgian	UNKNOWN	ka
greenlandic	UNKNOWN	kl
kannada	UNKNOWN	kn
korean-test	MALE	ko
kurdish	MALE	ku
latin	MALE	la
lingua_franca_nova	MALE	lfn
lithuanian	MALE	lt
latvian	MALE	lv
macedonian	MALE	mk
malayalam	MALE	ml
malay	MALE	ms
nahuatl-classical	MALE	nci
nepali	MALE	ne
dutch	MALE	nl
norwegian	MALE	no
oriya-test	UNKNOWN	or
punjabi	UNKNOWN	pa
papiamentto-test	UNKNOWN	pap
polish	MALE	pl
brazil	MALE	pt-br
portugal	MALE	pt-pt
romanian	MALE	ro
russian	MALE	ru
sinhala-test	UNKNOWN	si
slovak	MALE	sk
slovenian-test	UNKNOWN	sl
serbian	MALE	sr
swedish	MALE	sv
swahili-test	MALE	sw
tamil	MALE	ta
telugu-test	UNKNOWN	te
turkish	MALE	tr
urdu-test	UNKNOWN	ur
vietnam	MALE	vi
vietnam_hue	MALE	vi-hue
vietnam_sgn	MALE	vi-sgn
Mandarin	MALE	zh
cantonese	MALE	zh-yue

**17.1.8. AWS Polly**

Tested: 27.08.2021

Number of voices: 63

<b>Name</b>	<b>Gender</b>	<b>Language</b>
Zeina	FEMALE	ar
Gwyneth	FEMALE	cy-GB
Mads	MALE	da-DK
Naja	FEMALE	da-DK
Hans	MALE	de-DE
Marlene	FEMALE	de-DE
Vicki	FEMALE	de-DE
Nicole	FEMALE	en-AU
Olivia*	FEMALE	en-AU
Russell	MALE	en-AU
Amy	FEMALE	en-GB
Brian	MALE	en-GB
Emma	FEMALE	en-GB
Geraint	MALE	En-GB-WLS
Aditi	FEMALE	en-IN
Raveena	FEMALE	en-IN
Ivy	FEMALE	en-US
Joanna	FEMALE	en-US
Joey	MALE	en-US
Justin	MALE	en-US
Kendra	FEMALE	en-US
Kevin*	MALE	en-US
Kimberly	FEMALE	en-US
Matthew	MALE	en-US
Salli	FEMALE	en-US
Conchita	FEMALE	es-ES
Enrique	MALE	es-ES
Lucia	FEMALE	es-ES
Mia	FEMALE	es-MX
Lupe	FEMALE	es-US
Miguel	MALE	es-US
Penelope	FEMALE	es-US
Chantal	FEMALE	fr-CA
Gabrielle*	FEMALE	fr-CA
Celine	FEMALE	fr-FR
Lea	FEMALE	fr-FR
Mathieu	MALE	fr-FR
Dora	FEMALE	is-IS
Karl	MALE	is-IS
Bianca	FEMALE	it-IT



Carla	FEMALE	it-IT
Giorgio	MALE	it-IT
Mizuki	FEMALE	ja-JP
Takumi	MALE	ja-JP
Seoyeon	FEMALE	ko-KR
Lotte	FEMALE	nl-NL
Ruben	MALE	nl-NL
Liv	FEMALE	no-NO
Ewa	FEMALE	pl-PL
Jacek	MALE	pl-PL
Jan	MALE	pl-PL
Maja	FEMALE	pl-PL
Camila	FEMALE	pt-BR
Ricardo	MALE	pt-BR
Vitoria	FEMALE	pt-BR
Cristiano	MALE	pt-PT
Ines	FEMALE	pt-PT
Carmen	FEMALE	ro-RO
Maxim	MALE	ru-RU
Tatyana	FEMALE	ru-RU
Astrid	FEMALE	sv-SE
Filiz	FEMALE	tr-TR
Zhiyu	FEMALE	zh

\* = only available as neural voice

**17.1.9. Klattersynth**

Unlimited variations of voices can be created.

**17.1.10. SAPI Unity**

Has the same voices as in chapter 17.1.1.

**17.1.11. WebGL Speech Synthesis**

Google Chrome 81.0.4044.122 (tested: 28.04.2020)

Number of voices: 17

<b>Name</b>	<b>Gender</b>	<b>Language</b>
Google UK English Female	FEMALE	en-GB
Google UK English Male	MALE	en-GB
Google US English	UNKNOWN	en-US
Google español	UNKNOWN	es-ES
Google español de Estados Unidos	UNKNOWN	es-US
Google français	UNKNOWN	fr-FR
Google हिन्दी	UNKNOWN	hi-IN
Google italiano	UNKNOWN	it-IT
Google 日本語	UNKNOWN	ja-JP
Google 한국의	UNKNOWN	ko-KR
Google Nederlands	UNKNOWN	nl-NL
Google polski	UNKNOWN	pl-PL
Google português do Brasil	UNKNOWN	pt-BR
Google русский	UNKNOWN	ru-RU
Google 普通话 (中国大陆)	UNKNOWN	zh-CN
Google 粵語 (香港)	UNKNOWN	zh-HK
Google 國語 (臺灣)	UNKNOWN	zh-TW

**17.1.12. Azure**

Tested: 17.09.2021

Number of voices: 260

<b>Name</b>	<b>Gender</b>	<b>Language</b>
Hoda	FEMALE	ar-EG
SalmaNeural	FEMALE	ar-EG
ShakirNeural	MALE	ar-EG
HamedNeural	MALE	ar-SA
Naayf	MALE	ar-SA
ZariyahNeural	FEMALE	ar-SA
BorislavNeural	MALE	bg-BG
Ivan	MALE	bg-BG
KalinaNeural	FEMALE	bg-BG
AlbaNeural	FEMALE	ca-ES
EnricNeural	MALE	ca-ES
HerenaRUS	FEMALE	ca-ES
JoanaNeural	FEMALE	ca-ES
AntoninNeural	MALE	cs-CZ
Jakub	MALE	cs-CZ
VlastaNeural	FEMALE	cs-CZ
AledNeural	MALE	cy-GB
NiaNeural	FEMALE	cy-GB
ChristelNeural	FEMALE	da-DK
HelleRUS	FEMALE	da-DK
JeppeNeural	MALE	da-DK
IngridNeural	FEMALE	de-AT
JonasNeural	MALE	de-AT
Michael	MALE	de-AT
JanNeural	MALE	de-CH
Karsten	MALE	de-CH
LeniNeural	FEMALE	de-CH
ConradNeural	MALE	de-DE
Hedda	FEMALE	de-DE
HeddaRUS	FEMALE	de-DE
KatjaNeural	FEMALE	de-DE
Stefan-Apollo	MALE	de-DE
AthinaNeural	FEMALE	el-GR
NestorasNeural	MALE	el-GR
Stefanos	MALE	el-GR
Catherine	FEMALE	en-AU
HayleyRUS	FEMALE	en-AU
NatashaNeural	FEMALE	en-AU
WilliamNeural	MALE	en-AU
ClaraNeural	FEMALE	en-CA

HeatherRUS	FEMALE	en-CA
LiamNeural	MALE	en-CA
Linda	FEMALE	en-CA
George-Apollo	MALE	en-GB
HazelRUS	FEMALE	en-GB
LibbyNeural	FEMALE	en-GB
RyanNeural	MALE	en-GB
SoniaNeural	FEMALE	en-GB
Susan-Apollo	FEMALE	en-GB
SamNeural	MALE	en-HK
YanNeural	FEMALE	en-HK
ConnorNeural	MALE	en-IE
EmilyNeural	FEMALE	en-IE
Sean	MALE	en-IE
Heera-Apollo	FEMALE	en-IN
NeerjaNeural	FEMALE	en-IN
PrabhatNeural	MALE	en-IN
PriyaRUS	FEMALE	en-IN
Ravi-Apollo	MALE	en-IN
MitchellNeural	MALE	en-NZ
MollyNeural	FEMALE	en-NZ
JamesNeural	MALE	en-PH
RosaNeural	FEMALE	en-PH
LunaNeural	FEMALE	en-SG
WayneNeural	MALE	en-SG
AmberNeural	FEMALE	en-US
AnaNeural	FEMALE	en-US
AriaNeural	FEMALE	en-US
AshleyNeural	FEMALE	en-US
BenjaminRUS	MALE	en-US
BrandonNeural	MALE	en-US
ChristopherNeural	MALE	en-US
CoraNeural	FEMALE	en-US
ElizabethNeural	FEMALE	en-US
EricNeural	MALE	en-US
Guy24kRUS	MALE	en-US
GuyNeural	MALE	en-US
JacobNeural	MALE	en-US
JennyMultilingualNeural	FEMALE	en-US
JennyNeural	FEMALE	en-US
Jessa24kRUS	FEMALE	en-US
JessaRUS	FEMALE	en-US
MichelleNeural	FEMALE	en-US
MonicaNeural	FEMALE	en-US
SaraNeural	FEMALE	en-US
ZiraRUS	FEMALE	en-US
LeahNeural	FEMALE	en-ZA

LukeNeural	MALE	en-ZA
ElenaNeural	FEMALE	es-AR
TomasNeural	MALE	es-AR
GonzaloNeural	MALE	es-CO
SalomeNeural	FEMALE	es-CO
AlvaroNeural	MALE	es-ES
ElviraNeural	FEMALE	es-ES
HelenaRUS	FEMALE	es-ES
Laura-Apollo	FEMALE	es-ES
Pablo-Apollo	MALE	es-ES
DaliaNeural	FEMALE	es-MX
HildaRUS	FEMALE	es-MX
JorgeNeural	MALE	es-MX
Raul-Apollo	MALE	es-MX
AlonsoNeural	MALE	es-US
PalomaNeural	FEMALE	es-US
AnuNeural	FEMALE	et-EE
KertNeural	MALE	et-EE
HarriNeural	MALE	fi-FI
HeidiRUS	FEMALE	fi-FI
NooraNeural	FEMALE	fi-FI
SelmaNeural	FEMALE	fi-FI
CharlineNeural	FEMALE	fr-BE
GerardNeural	MALE	fr-BE
AntoineNeural	MALE	fr-CA
Caroline	FEMALE	fr-CA
HarmonieRUS	FEMALE	fr-CA
JeanNeural	MALE	fr-CA
SylvieNeural	FEMALE	fr-CA
ArianeNeural	FEMALE	fr-CH
FabriceNeural	MALE	fr-CH
Guillaume	MALE	fr-CH
DeniseNeural	FEMALE	fr-FR
HenriNeural	MALE	fr-FR
HortenseRUS	FEMALE	fr-FR
Julie-Apollo	FEMALE	fr-FR
Paul-Apollo	MALE	fr-FR
ColmNeural	MALE	ga-IE
OrlaNeural	FEMALE	ga-IE
DhwaniNeural	FEMALE	gu-IN
NiranjanaNeural	MALE	gu-IN
Asaf	MALE	he-IL
AvriNeural	MALE	he-IL
HilaNeural	FEMALE	he-IL
Hemant	MALE	hi-IN
Kalpana	FEMALE	hi-IN
Kalpana-Apollo	FEMALE	hi-IN

MadhurNeural	MALE	hi-IN
SwaraNeural	FEMALE	hi-IN
GabrijelaNeural	FEMALE	hr-HR
Matej	MALE	hr-HR
SreckoNeural	MALE	hr-HR
NoemiNeural	FEMALE	hu-HU
Szabolcs	MALE	hu-HU
TamasNeural	MALE	hu-HU
Andika	MALE	id-ID
ArdiNeural	MALE	id-ID
GadisNeural	FEMALE	id-ID
Cosimo-Apollo	MALE	it-IT
DiegoNeural	MALE	it-IT
ElsaNeural	FEMALE	it-IT
IsabellaNeural	FEMALE	it-IT
LuciaRUS	FEMALE	it-IT
Ayumi-Apollo	FEMALE	ja-JP
HarukaRUS	FEMALE	ja-JP
Ichiro-Apollo	MALE	ja-JP
KeitaNeural	MALE	ja-JP
NanamiNeural	FEMALE	ja-JP
HeamiRUS	FEMALE	ko-KR
InJoonNeural	MALE	ko-KR
SunHiNeural	FEMALE	ko-KR
LeonasNeural	MALE	lt-LT
OnaNeural	FEMALE	lt-LT
EveritaNeural	FEMALE	lv-LV
NilsNeural	MALE	lv-LV
AarohiNeural	FEMALE	mr-IN
ManoharNeural	MALE	mr-IN
OsmanNeural	MALE	ms-MY
Rizwan	MALE	ms-MY
YasminNeural	FEMALE	ms-MY
GraceNeural	FEMALE	mt-MT
JosephNeural	MALE	mt-MT
FinnNeural	MALE	nb-NO
HuldaRUS	FEMALE	nb-NO
IselinNeural	FEMALE	nb-NO
PernilleNeural	FEMALE	nb-NO
ArnaudNeural	MALE	nl-BE
DenaNeural	FEMALE	nl-BE
ColetteNeural	FEMALE	nl-NL
FennaNeural	FEMALE	nl-NL
HannaRUS	FEMALE	nl-NL
MaartenNeural	MALE	nl-NL
AgnieszkaNeural	FEMALE	pl-PL
MarekNeural	MALE	pl-PL

PaulinaRUS	FEMALE	pl-PL
ZofiaNeural	FEMALE	pl-PL
AntonioNeural	MALE	pt-BR
Daniel-Apollo	MALE	pt-BR
FranciscaNeural	FEMALE	pt-BR
HeloisaRUS	FEMALE	pt-BR
DuarteNeural	MALE	pt-PT
FernandaNeural	FEMALE	pt-PT
HeliaRUS	FEMALE	pt-PT
RaquelNeural	FEMALE	pt-PT
AlinaNeural	FEMALE	ro-RO
Andrei	MALE	ro-RO
EmilNeural	MALE	ro-RO
DariyaNeural	FEMALE	ru-RU
DmitryNeural	MALE	ru-RU
EkaterinaRUS	FEMALE	ru-RU
Irina-Apollo	FEMALE	ru-RU
Pavel-Apollo	MALE	ru-RU
SvetlanaNeural	FEMALE	ru-RU
Filip	MALE	sk-SK
LukasNeural	MALE	sk-SK
ViktoriaNeural	FEMALE	sk-SK
Lado	MALE	sl-SI
PetraNeural	FEMALE	sl-SI
RokNeural	MALE	sl-SI
HedvigRUS	FEMALE	sv-SE
HilleviNeural	FEMALE	sv-SE
MattiasNeural	MALE	sv-SE
SofieNeural	FEMALE	sv-SE
RafikiNeural	MALE	sw-KE
ZuriNeural	FEMALE	sw-KE
PallaviNeural	FEMALE	ta-IN
Valluvar	MALE	ta-IN
ValluvarNeural	MALE	ta-IN
Chitra	FEMALE	te-IN
MohanNeural	MALE	te-IN
ShrutiNeural	FEMALE	te-IN
AcharaNeural	FEMALE	th-TH
NiwatNeural	MALE	th-TH
Pattara	MALE	th-TH
PremwadeeNeural	FEMALE	th-TH
AhmetNeural	MALE	tr-TR
EmelNeural	FEMALE	tr-TR
SedaRUS	FEMALE	tr-TR
OstapNeural	MALE	uk-UA
PolinaNeural	FEMALE	uk-UA
AsadNeural	MALE	ur-PK



UzmaNeural	FEMALE	ur-PK
An	MALE	vi-VN
HoaiMyNeural	FEMALE	vi-VN
NamMinhNeural	MALE	vi-VN
HuihuiRUS	FEMALE	zh-CN
Kangkang-Apollo	MALE	zh-CN
XiaochenNeural	FEMALE	zh-CN
XiaohanNeural	FEMALE	zh-CN
XiaomoNeural	FEMALE	zh-CN
XiaoqiuNeural	FEMALE	zh-CN
XiaoruiNeural	FEMALE	zh-CN
XiaoshuangNeural	FEMALE	zh-CN
XiaoxiaoNeural	FEMALE	zh-CN
XiaoxuanNeural	FEMALE	zh-CN
XiaoyanNeural	FEMALE	zh-CN
XiaoyouNeural	FEMALE	zh-CN
Yaoyao-Apollo	FEMALE	zh-CN
YunxiNeural	MALE	zh-CN
YunyangNeural	MALE	zh-CN
YunyeNeural	MALE	zh-CN
Danny-Apollo	MALE	zh-HK
HiuGaiNeural	FEMALE	zh-HK
HiuMaanNeural	FEMALE	zh-HK
Tracy-Apollo	FEMALE	zh-HK
TracyRUS	FEMALE	zh-HK
WanLungNeural	MALE	zh-HK
HanHanRUS	FEMALE	zh-TW
HsiaoChenNeural	FEMALE	zh-TW
HsiaoYuNeural	FEMALE	zh-TW
Yating-Apollo	FEMALE	zh-TW
YunJheNeural	MALE	zh-TW
Zhiwei-Apollo	MALE	zh-TW

**17.1.13. Google Cloud Speech**

Tested: 27.08.2021

Number of voices: 305

<b>Name</b>	<b>Gender</b>	<b>Language</b>
af-ZA-Standard-A	FEMALE	af-ZA
ar-XA-Standard-A	FEMALE	ar-XA
ar-XA-Standard-B	MALE	ar-XA
ar-XA-Standard-C	MALE	ar-XA
ar-XA-Standard-D	FEMALE	ar-XA
ar-XA-Wavenet-A	FEMALE	ar-XA
ar-XA-Wavenet-B	MALE	ar-XA
ar-XA-Wavenet-C	MALE	ar-XA
ar-XA-Wavenet-D	FEMALE	ar-XA
bg-bg-Standard-A	FEMALE	bg-BG
bn-IN-Standard-A	FEMALE	bn-IN
bn-IN-Standard-B	MALE	bn-IN
bn-IN-Wavenet-A	FEMALE	bn-IN
bn-IN-Wavenet-B	MALE	bn-IN
ca-es-Standard-A	FEMALE	ca-ES
cmn-CN-Standard-A	FEMALE	cmn-CN
cmn-CN-Standard-B	MALE	cmn-CN
cmn-CN-Standard-C	MALE	cmn-CN
cmn-CN-Standard-D	FEMALE	cmn-CN
cmn-CN-Wavenet-A	FEMALE	cmn-CN
cmn-CN-Wavenet-B	MALE	cmn-CN
cmn-CN-Wavenet-C	MALE	cmn-CN
cmn-CN-Wavenet-D	FEMALE	cmn-CN
cmn-TW-Standard-A	FEMALE	cmn-TW
cmn-TW-Standard-B	MALE	cmn-TW
cmn-TW-Standard-C	MALE	cmn-TW
cmn-TW-Wavenet-A	FEMALE	cmn-TW
cmn-TW-Wavenet-B	MALE	cmn-TW
cmn-TW-Wavenet-C	MALE	cmn-TW
cs-CZ-Standard-A	FEMALE	cs-CZ
cs-CZ-Wavenet-A	FEMALE	cs-CZ
da-DK-Standard-A	FEMALE	da-DK
da-DK-Standard-C	MALE	da-DK
da-DK-Standard-D	FEMALE	da-DK
da-DK-Standard-E	FEMALE	da-DK
da-DK-Wavenet-A	FEMALE	da-DK
da-DK-Wavenet-C	MALE	da-DK
da-DK-Wavenet-D	FEMALE	da-DK
da-DK-Wavenet-E	FEMALE	da-DK
de-DE-Standard-A	FEMALE	de-DE

de-DE-Standard-B	MALE	de-DE
de-DE-Standard-C	FEMALE	de-DE
de-DE-Standard-D	MALE	de-DE
de-DE-Standard-E	MALE	de-DE
de-DE-Standard-F	FEMALE	de-DE
de-DE-Wavenet-A	FEMALE	de-DE
de-DE-Wavenet-B	MALE	de-DE
de-DE-Wavenet-C	FEMALE	de-DE
de-DE-Wavenet-D	MALE	de-DE
de-DE-Wavenet-E	MALE	de-DE
de-DE-Wavenet-F	FEMALE	de-DE
el-GR-Standard-A	FEMALE	el-GR
el-GR-Wavenet-A	FEMALE	el-GR
en-AU-Standard-A	FEMALE	en-AU
en-AU-Standard-B	MALE	en-AU
en-AU-Standard-C	FEMALE	en-AU
en-AU-Standard-D	MALE	en-AU
en-AU-Wavenet-A	FEMALE	en-AU
en-AU-Wavenet-B	MALE	en-AU
en-AU-Wavenet-C	FEMALE	en-AU
en-AU-Wavenet-D	MALE	en-AU
en-GB-Standard-A	FEMALE	en-GB
en-GB-Standard-B	MALE	en-GB
en-GB-Standard-C	FEMALE	en-GB
en-GB-Standard-D	MALE	en-GB
en-GB-Standard-F	FEMALE	en-GB
en-GB-Wavenet-A	FEMALE	en-GB
en-GB-Wavenet-B	MALE	en-GB
en-GB-Wavenet-C	FEMALE	en-GB
en-GB-Wavenet-D	MALE	en-GB
en-GB-Wavenet-F	FEMALE	en-GB
en-IN-Standard-A	FEMALE	en-IN
en-IN-Standard-B	MALE	en-IN
en-IN-Standard-C	MALE	en-IN
en-IN-Standard-D	FEMALE	en-IN
en-IN-Wavenet-A	FEMALE	en-IN
en-IN-Wavenet-B	MALE	en-IN
en-IN-Wavenet-C	MALE	en-IN
en-IN-Wavenet-D	FEMALE	en-IN
en-US-Standard-A	MALE	en-US
en-US-Standard-B	MALE	en-US
en-US-Standard-C	FEMALE	en-US
en-US-Standard-D	MALE	en-US
en-US-Standard-E	FEMALE	en-US
en-US-Standard-F	FEMALE	en-US
en-US-Standard-G	FEMALE	en-US
en-US-Standard-H	FEMALE	en-US

en-US-Standard-I	MALE	en-US
en-US-Standard-J	MALE	en-US
en-US-Wavenet-A	MALE	en-US
en-US-Wavenet-B	MALE	en-US
en-US-Wavenet-C	FEMALE	en-US
en-US-Wavenet-D	MALE	en-US
en-US-Wavenet-E	FEMALE	en-US
en-US-Wavenet-F	FEMALE	en-US
en-US-Wavenet-G	FEMALE	en-US
en-US-Wavenet-H	FEMALE	en-US
en-US-Wavenet-I	MALE	en-US
en-US-Wavenet-J	MALE	en-US
es-ES-Standard-A	FEMALE	es-ES
es-ES-Standard-B	MALE	es-ES
es-ES-Standard-C	FEMALE	es-ES
es-ES-Standard-D	FEMALE	es-ES
es-ES-Wavenet-B	MALE	es-ES
es-ES-Wavenet-C	FEMALE	es-ES
es-ES-Wavenet-D	FEMALE	es-ES
es-US-Standard-A	FEMALE	es-US
es-US-Standard-B	MALE	es-US
es-US-Standard-C	MALE	es-US
es-US-Wavenet-A	FEMALE	es-US
es-US-Wavenet-B	MALE	es-US
es-US-Wavenet-C	MALE	es-US
fi-FI-Standard-A	FEMALE	fi-FI
fi-FI-Wavenet-A	FEMALE	fi-FI
fil-PH-Standard-A	FEMALE	fil-PH
fil-PH-Standard-B	FEMALE	fil-PH
fil-PH-Standard-C	MALE	fil-PH
fil-PH-Standard-D	MALE	fil-PH
fil-PH-Wavenet-A	FEMALE	fil-PH
fil-PH-Wavenet-B	FEMALE	fil-PH
fil-PH-Wavenet-C	MALE	fil-PH
fil-PH-Wavenet-D	MALE	fil-PH
fr-CA-Standard-A	FEMALE	fr-CA
fr-CA-Standard-B	MALE	fr-CA
fr-CA-Standard-C	FEMALE	fr-CA
fr-CA-Standard-D	MALE	fr-CA
fr-CA-Wavenet-A	FEMALE	fr-CA
fr-CA-Wavenet-B	MALE	fr-CA
fr-CA-Wavenet-C	FEMALE	fr-CA
fr-CA-Wavenet-D	MALE	fr-CA
fr-FR-Standard-A	FEMALE	fr-FR
fr-FR-Standard-B	MALE	fr-FR
fr-FR-Standard-C	FEMALE	fr-FR
fr-FR-Standard-D	MALE	fr-FR

fr-FR-Standard-E	FEMALE	fr-FR
fr-FR-Wavenet-A	FEMALE	fr-FR
fr-FR-Wavenet-B	MALE	fr-FR
fr-FR-Wavenet-C	FEMALE	fr-FR
fr-FR-Wavenet-D	MALE	fr-FR
fr-FR-Wavenet-E	FEMALE	fr-FR
gu-IN-Standard-A	FEMALE	gu-IN
gu-IN-Standard-B	MALE	gu-IN
gu-IN-Wavenet-A	FEMALE	gu-IN
gu-IN-Wavenet-B	MALE	gu-IN
hi-IN-Standard-A	FEMALE	hi-IN
hi-IN-Standard-B	MALE	hi-IN
hi-IN-Standard-C	MALE	hi-IN
hi-IN-Standard-D	FEMALE	hi-IN
hi-IN-Wavenet-A	FEMALE	hi-IN
hi-IN-Wavenet-B	MALE	hi-IN
hi-IN-Wavenet-C	MALE	hi-IN
hi-IN-Wavenet-D	FEMALE	hi-IN
hu-HU-Standard-A	FEMALE	hu-HU
hu-HU-Wavenet-A	FEMALE	hu-HU
id-ID-Standard-A	FEMALE	id-ID
id-ID-Standard-B	MALE	id-ID
id-ID-Standard-C	MALE	id-ID
id-ID-Standard-D	FEMALE	id-ID
id-ID-Wavenet-A	FEMALE	id-ID
id-ID-Wavenet-B	MALE	id-ID
id-ID-Wavenet-C	MALE	id-ID
id-ID-Wavenet-D	FEMALE	id-ID
is-is-Standard-A	FEMALE	is-IS
it-IT-Standard-A	FEMALE	it-IT
it-IT-Standard-B	FEMALE	it-IT
it-IT-Standard-C	MALE	it-IT
it-IT-Standard-D	MALE	it-IT
it-IT-Wavenet-A	FEMALE	it-IT
it-IT-Wavenet-B	FEMALE	it-IT
it-IT-Wavenet-C	MALE	it-IT
it-IT-Wavenet-D	MALE	it-IT
jā-JP-Standard-A	FEMALE	jā-JP
jā-JP-Standard-B	FEMALE	jā-JP
jā-JP-Standard-C	MALE	jā-JP
jā-JP-Standard-D	MALE	jā-JP
jā-JP-Wavenet-A	FEMALE	jā-JP
jā-JP-Wavenet-B	FEMALE	jā-JP
jā-JP-Wavenet-C	MALE	jā-JP
jā-JP-Wavenet-D	MALE	jā-JP
kn-IN-Standard-A	FEMALE	kn-IN
kn-IN-Standard-B	MALE	kn-IN

kn-IN-Wavenet-A	FEMALE	kn-IN
kn-IN-Wavenet-B	MALE	kn-IN
ko-KR-Standard-A	FEMALE	ko-KR
ko-KR-Standard-B	FEMALE	ko-KR
ko-KR-Standard-C	MALE	ko-KR
ko-KR-Standard-D	MALE	ko-KR
ko-KR-Wavenet-A	FEMALE	ko-KR
ko-KR-Wavenet-B	FEMALE	ko-KR
ko-KR-Wavenet-C	MALE	ko-KR
ko-KR-Wavenet-D	MALE	ko-KR
lv-lv-Standard-A	MALE	lv-LV
ml-IN-Standard-A	FEMALE	ml-IN
ml-IN-Standard-B	MALE	ml-IN
ml-IN-Wavenet-A	FEMALE	ml-IN
ml-IN-Wavenet-B	MALE	ml-IN
ms-MY-Standard-A	FEMALE	ms-MY
ms-MY-Standard-B	MALE	ms-MY
ms-MY-Standard-C	FEMALE	ms-MY
ms-MY-Standard-D	MALE	ms-MY
ms-MY-Wavenet-A	FEMALE	ms-MY
ms-MY-Wavenet-B	MALE	ms-MY
ms-MY-Wavenet-C	FEMALE	ms-MY
ms-MY-Wavenet-D	MALE	ms-MY
nb-NO-Standard-A	FEMALE	nb-NO
nb-NO-Standard-B	MALE	nb-NO
nb-NO-Standard-C	FEMALE	nb-NO
nb-NO-Standard-D	MALE	nb-NO
nb-no-Standard-E	FEMALE	nb-NO
nb-no-Standard-E	FEMALE	nb-NO
nb-NO-Wavenet-A	FEMALE	nb-NO
nb-NO-Wavenet-B	MALE	nb-NO
nb-NO-Wavenet-C	FEMALE	nb-NO
nb-NO-Wavenet-D	MALE	nb-NO
nb-no-Wavenet-E	FEMALE	nb-NO
nl-BE-Standard-A	FEMALE	nl-BE
nl-BE-Standard-B	MALE	nl-BE
nl-BE-Wavenet-A	FEMALE	nl-BE
nl-BE-Wavenet-B	MALE	nl-BE
nl-NL-Standard-A	FEMALE	nl-NL
nl-NL-Standard-B	MALE	nl-NL
nl-NL-Standard-C	MALE	nl-NL
nl-NL-Standard-D	FEMALE	nl-NL
nl-NL-Standard-E	FEMALE	nl-NL
nl-NL-Wavenet-A	FEMALE	nl-NL
nl-NL-Wavenet-B	MALE	nl-NL
nl-NL-Wavenet-C	MALE	nl-NL
nl-NL-Wavenet-D	FEMALE	nl-NL

nl-NL-Wavenet-E	FEMALE	nl-NL
pā-IN-Standard-A	FEMALE	pā-IN
pā-IN-Standard-B	MALE	pā-IN
pā-IN-Standard-C	FEMALE	pā-IN
pā-IN-Standard-D	MALE	pā-IN
pā-IN-Wavenet-A	FEMALE	pā-IN
pā-IN-Wavenet-B	MALE	pā-IN
pā-IN-Wavenet-C	FEMALE	pā-IN
pā-IN-Wavenet-D	MALE	pā-IN
pl-PL-Standard-A	FEMALE	pl-PL
pl-PL-Standard-B	MALE	pl-PL
pl-PL-Standard-C	MALE	pl-PL
pl-PL-Standard-D	FEMALE	pl-PL
pl-PL-Standard-E	FEMALE	pl-PL
pl-PL-Wavenet-A	FEMALE	pl-PL
pl-PL-Wavenet-B	MALE	pl-PL
pl-PL-Wavenet-C	MALE	pl-PL
pl-PL-Wavenet-D	FEMALE	pl-PL
pl-PL-Wavenet-E	FEMALE	pl-PL
pt-BR-Standard-A	FEMALE	pt-BR
pt-BR-Wavenet-A	FEMALE	pt-BR
pt-PT-Standard-A	FEMALE	pt-PT
pt-PT-Standard-B	MALE	pt-PT
pt-PT-Standard-C	MALE	pt-PT
pt-PT-Standard-D	FEMALE	pt-PT
pt-PT-Wavenet-A	FEMALE	pt-PT
pt-PT-Wavenet-B	MALE	pt-PT
pt-PT-Wavenet-C	MALE	pt-PT
pt-PT-Wavenet-D	FEMALE	pt-PT
ro-RO-Standard-A	FEMALE	ro-RO
ro-RO-Wavenet-A	FEMALE	ro-RO
ru-RU-Standard-A	FEMALE	ru-RU
ru-RU-Standard-B	MALE	ru-RU
ru-RU-Standard-C	FEMALE	ru-RU
ru-RU-Standard-D	MALE	ru-RU
ru-RU-Standard-E	FEMALE	ru-RU
ru-RU-Wavenet-A	FEMALE	ru-RU
ru-RU-Wavenet-B	MALE	ru-RU
ru-RU-Wavenet-C	FEMALE	ru-RU
ru-RU-Wavenet-D	MALE	ru-RU
ru-RU-Wavenet-E	FEMALE	ru-RU
sk-SK-Standard-A	FEMALE	sk-SK
sk-SK-Wavenet-A	FEMALE	sk-SK
sr-rs-Standard-A	FEMALE	sr-RS
sv-SE-Standard-A	FEMALE	sv-SE
sv-SE-Wavenet-A	FEMALE	sv-SE
tā-IN-Standard-A	FEMALE	tā-IN

tə-IN-Standard-B	MALE	tə-IN
tə-IN-Wavenet-A	FEMALE	tə-IN
tə-IN-Wavenet-B	MALE	tə-IN
te-IN-Standard-A	FEMALE	te-IN
te-IN-Standard-B	MALE	te-IN
th-TH-Standard-A	FEMALE	th-TH
tr-TR-Standard-A	FEMALE	tr-TR
tr-TR-Standard-B	MALE	tr-TR
tr-TR-Standard-C	FEMALE	tr-TR
tr-TR-Standard-D	FEMALE	tr-TR
tr-TR-Standard-E	MALE	tr-TR
tr-TR-Wavenet-A	FEMALE	tr-TR
tr-TR-Wavenet-B	MALE	tr-TR
tr-TR-Wavenet-C	FEMALE	tr-TR
tr-TR-Wavenet-D	FEMALE	tr-TR
tr-TR-Wavenet-E	MALE	tr-TR
uk-UA-Standard-A	FEMALE	uk-UA
uk-UA-Wavenet-A	FEMALE	uk-UA
vi-VN-Standard-A	FEMALE	vi-VN
vi-VN-Standard-B	MALE	vi-VN
vi-VN-Standard-C	FEMALE	vi-VN
vi-VN-Standard-D	MALE	vi-VN
vi-VN-Wavenet-A	FEMALE	vi-VN
vi-VN-Wavenet-B	MALE	vi-VN
vi-VN-Wavenet-C	FEMALE	vi-VN
vi-VN-Wavenet-D	MALE	vi-VN
yue-HK-Standard-A	FEMALE	yue-HK
yue-HK-Standard-B	MALE	yue-HK
yue-HK-Standard-C	FEMALE	yue-HK
yue-HK-Standard-D	MALE	yue-HK