RT-Voice PRO

Hearing is understanding



Documentation

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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.

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 <u>SSML</u> and <u>EmotionML</u>
- 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 2018.4 2021.1
- Supports AR and VR
- C# delegates and Unity events
- Works with Online Check
- <u>PlayMaker</u> actions

2.4. Integrations

- Adventure Creator
- <u>Amplitude</u>
- <u>Cinema Director</u>
- <u>Dialogue System for Unity</u>
- Google Cloud Speech
- <u>Klattersynth</u>
- <u>LipSync</u>
- Localized Dialogs & Cutscenes (LDC)
- Naninovel
- NPC Chat
- Online Check
- PlayMaker
- Quest System Pro
- <u>SALSA</u>
- <u>SLATE</u>
- 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	yes	no
iOS	yes	no	no	yes
WSA (UWP) / XBox	yes	yes	yes	no
MaryTTS	no ¹	yes	yes	no
eSpeak	yes	yes	yes	no
AWS Polly	no	yes	yes	no
<u>Klattersynth</u>	yes	no	no	no
SAPI Unity	yes	yes	no	no
WebGL Speech Synthesis	no	no	no	no
Azure (Bing Speech)	no	yes	yes	no
Google Cloud Speech	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)
- 1 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

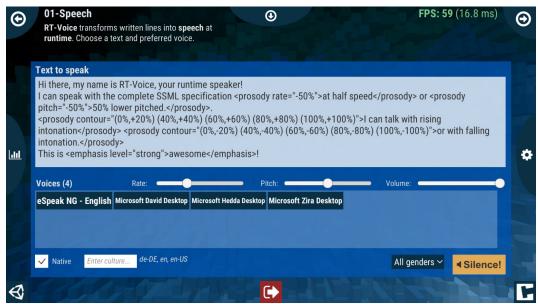
- Platforms: all
- Unity AssetStore: https://assetstore.unity.com/packages/slug/115170
- Maximal number of characters per speech: depends on the maximal request size, but 16'000 (>20min) is realistic. Higher numbers can lead to timeouts.

3. Demonstration

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

Please install "Assets/Plugins/crosstales/Common/UI.unitypackage" first and afterwards "Demos.unitypackage" to use the demo scenes!

3.1. Speech



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

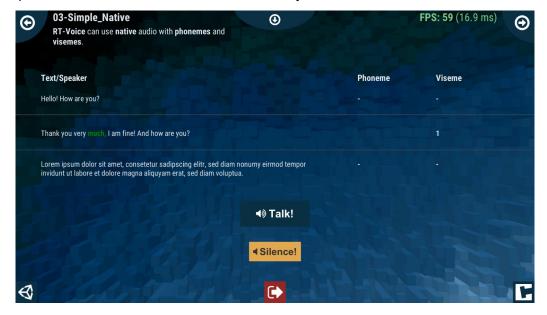
3.2. Dialog

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



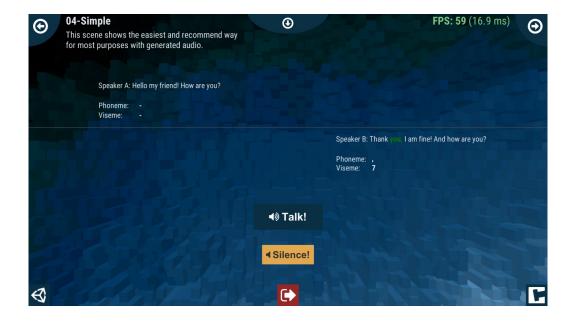
3.3. SimpleNative

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 <u>Unity Standard Assets</u>-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

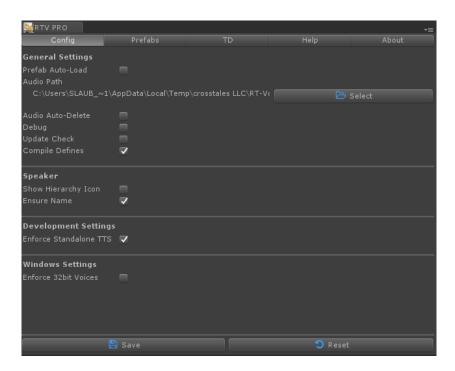
This scene shows how to speak text files with a voice (e.g. random dialogues of NPCs).

3.12. AudioFileGenerator

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

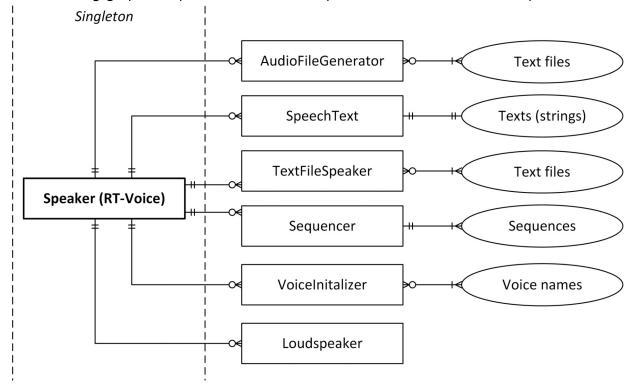
4. Setup

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:

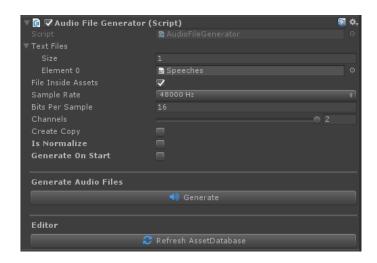


4.3. Other components

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

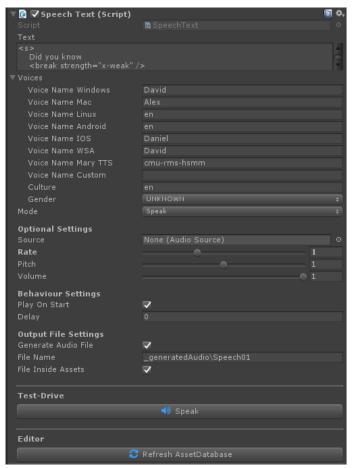
4.3.1. AudioFileGenerator

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.

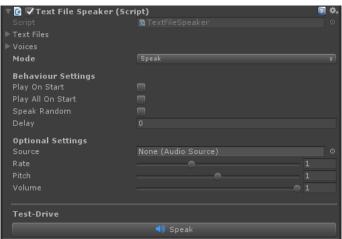


4.3.3. Sequencer

Simple sequencer for dialogues.

4.3.4. TextFileSpeaker

Allows to speak text files.



4.3.5. Loudspeaker

Loudspeaker for an AudioSource.

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

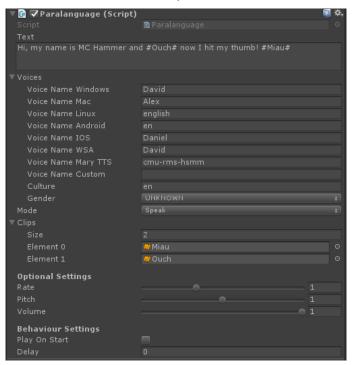
4.3.6. VoiceInitalizer

This component allows to initalize 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).

4.3.7. 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.

4.4. 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;

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 OnErorInfo;

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:

```
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("voicesReady: " + wrapper);
 Speaker.Instance.SpeakNative("Hello world!");
}
private void speakStart(Model.Wrapper wrapper) {
 Debug.Log("speakStart: " + wrapper);
}
private void speakComplete(Model.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

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

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 <u>send us an email</u> 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

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CH-8002 Zürich

Homepage: https://www.crosstales.com/en/portfolio/rtvoice/

Email: rtvoice@crosstales.com

AssetStore: https://assetstore.unity.com/lists/crosstales-42213

Forum: https://forum.unity.com/threads/rt-voice-run-time-text-to-speech-

solution.340046/

Documentation: https://www.crosstales.com/media/data/assets/rtvoice/RTVoice-

doc.pdf

API: https://www.crosstales.com/en/assets/rtvoice/api/

WebGL-Demo: https://www.crosstales.com/media/data/assets/rtvoice/webgl/

Windows-Demo: https://drive.google.com/file/d/

11BFDLbj9vmyrfltXeS_d9zK3oM9h8TaS/view?usp=sharing

Mac-Demo: https://drive.google.com/file/d/

11A7u7g7Cs63Bu7Iv7ER9KFTVCU9oWAaT/view?usp=sharing

Linux-Demo: https://drive.google.com/file/d/

1XViADtStr8NXKHPMejXQ6iY4C2U_Bh3o/view?usp=sharing

Android-Demo: https://drive.google.com/file/d/

11FUbfuvSAAT5JgdolUKZO1sCPkTAFYJG/view?usp=sharing

16. Our other assets

3D Skybox PRO 3D Skybox	Those beautiful packages contain professional 8k, HDR, stereoscopic 360° real-world skyboxes for your projects.
Bad Word Filter	The "Bad Word Filter" (aka profanity or obscenity filter) is exactly what the title suggests: a tool to filter swearwords and other "bad sentences".
DJ	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.
File Browser	File Browser is a wrapper for native file dialogs on Windows, macOS, Linux and UWP (WSA).
Online Check	You need a reliable solution to check for Internet availability? Here it is!
Radio	Radio allows implementing free music from Internet radio stations into your project
True Random	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.
Turbo Backup	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.
Turbo Builder	Turbo Builder creates builds for multiple platforms in one click. It works together with <u>Turbo Switch</u> to offer an incredible fast build pipeline.



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,		
Herena)	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,	==>441 =	
Helen)	FEMALE	en-US
Microsoft Server Speech Text to Speech Voice (en-US,	==>441 =	
ZiraPro)	FEMALE	en-US
Microsoft Zira Desktop	FEMALE	en-US
Microsoft Server Speech Text to Speech Voice (es-ES,	==>441 =	
Helena)	FEMALE	es-ES
Microsoft Server Speech Text to Speech Voice (es-MX,	==\4.4.E	1407
Hilda)	FEMALE	es-MX
Microsoft Server Speech Text to Speech Voice (fi-FI,	==\4.4.E	C: E1
Heidi)	FEMALE	fi-Fl
Microsoft Server Speech Text to Speech Voice (fr-CA,		f- C A
Harmonie)	FEMALE	fr-CA
Microsoft Server Speech Text to Speech Voice (fr-FR,		f- ED
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,		in ID
Haruka)	FEMALE	ja-JP
Microsoft Server Speech Text to Speech Voice (ko-KR,	FEMALE	ko-KR

Heami)		
Microsoft Server Speech Text to Speech Voice (nb-NO,	==>44.	
Hulda) Misrosoft Sosyer Sooosh Toyt to Sooosh Voice (al. NI	FEMALE	nb-NO
Microsoft Server Speech Text to Speech Voice (nI-NL, Hanna)	FEMALE	nl-NL
Microsoft Server Speech Text to Speech Voice (pl-PL,		III IVE
Paulina)	FEMALE	ρl-PL
Microsoft Server Speech Text to Speech Voice (pt-BR,		
Heloisa)	FEMALE	ρt-BR
Microsoft Server Speech Text to Speech Voice (pt-PT,		ot DT
Helia) Microsoft Server Speech Text to Speech Voice (ru-RU,	FEMALE	ρt-PT
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

Name	Gender	Language
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
Moira	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-Fl
Amelie	FEMALE	fr-CA
Thomas	MALE	fr-FR
Carmit	FEMALE	he-IL

Lekha Mariska Damayanti Luca Kyoko Yuna Nora Ellen Xander Zosia Luciana Joana loana Milena Yuri Laura	FEMALE FEMALE MALE FEMALE	hi-IN hu-HU id-ID it-IT ja-JP ko-KR nb-NO nI-BE nI-NL pI-PL pt-BR pt-PT ro-RO ru-RU ru-RU sk-SK
loana Milena Yuri	FEMALE FEMALE MALE	ro-RO ru-RU ru-RU
Mei-Jia	FEMALE	zh-TW

17.1.3. Android

Version 11 (Google TTS, tested: 27.08.2021)

Name	Gender	Language
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
са	FEMALE	са
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
су	FEMALE	СУ
da-DK-language	FEMALE	ďa-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
cii os x sig locoi		EII 03

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-Fl
fi-fi-x-əfi-locəl	FEMALE	fi-FI
	FEMALE	fil-PH
fil-PH-language		
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-fra-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
10 10-X-012-10Cd1	I LIIALE	טו־וט

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
ja-JP-language	FEMALE	ja-JP
ja-jp-x-htm-local	FEMALE	ja-JP
ja-jp-x-jab-local	FEMALE	ja-JP
ja-jp-x-jac-local	MALE	ja-JP
	MALE	ja-JP
ja-jp-x-jad-local		•
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	kυ
la	FEMALE	la
ml-IN-language	FEMALE	mI-IN
ml-in-x-mlf-local	FEMALE	mI-IN
ml-in-x-mlm-local	MALE	mI-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
	MALE	nl-NL
nl-nl-x-bmh-local	MALE	III-INL

nl-nl-x-dma-local	MALE	nI-NL
nl-nl-x-lfc-local	FEMALE	nI-NL
nl-nl-x-tfb-local	FEMALE	nI-NL
nl-nl-x-yfr-local	FEMALE	nI-NL
pl-PL-language	FEMALE	ρΙ-PL
pl-pl-x-afb-local	FEMALE	ρΙ-PL
pl-pl-x-bmg-local	MALE	ρΙ-PL
pl-pl-x-jmk-local	MALE	ρΙ-PL
pl-pl-x-oda-local	FEMALE	ρΙ-PL
pl-pl-x-zfg-local	FEMALE	ρΙ-PL
pt-BR-language	FEMALE	ρt-BR
pt-br-x-afs-local	FEMALE	ρt-BR
pt-PT-language	FEMALE	ρt-PT
pt-pt-x-jfb-local	FEMALE	ρt-PT
pt-pt-x-jmn-local	MALE	ρt-PT
pt-pt-x-pmj-local	MALE	ρt-PT
pt-pt-x-sfs-local	FEMALE	ρt-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 SR X SIR IOCOI	FEMALE	SQ DR
sr sr	FEMALE	sr 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
	FEMALE	ta-IN
ta-IN-language ta-in-x-taf-local	FEMALE	
	MALE	ta-IN ta-IN
ta-in-x-tag-local	FEMALE	te-IN
te-IN-language		te-IN
te-in-x-tef-local	FEMALE	
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-ama-local	MALE	tr-TR
tr-tr-x-cfs-local	FEMALE	tr-TR

tr-tr-x-efu-local tr-tr-x-mfm-local tr-tr-x-tmc-local uk-UA-language uk-ua-x-hfd-local ur-PK-language ur-pk-x-cfn-local ur-pk-x-urm-local vi-VN-language vi-vn-x-gft-local vi-vn-x-vic-local vi-vn-x-vid-local vi-vn-x-vie-local vi-vn-x-vif-local yue-HK-language yue-hk-x-jar-local	FEMALE	tr-TR tr-TR tr-TR uk-UA uk-UA ur-PK ur-PK vi-PK vi-VN vi-VN vi-VN vi-VN vi-VN vi-VN vi-VN vi-VN
vi-vn-x-vie-local vi-vn-x-vif-local yue-HK-language	FEMALE MALE FEMALE	vi-VN vi-VN yue-HK
zh-TW-language	FEMALE	zh-TW

17.1.4.iOS

Version 13.3.1 (tested: 28.04.2020)

Nama	Cooder	Lagarrage
Name	Gender MALE	Language
Maged	FEMALE	ar-SA cs-CZ
Zuzana Sara	FEMALE	da-DK
	FEMALE	
Anna	FEMALE	de-DE
Helena Martin		de-DE
Melina	MALE FEMALE	de-DE
Catherine		el-GR
	FEMALE	en-AU
Gordon	MALE	en-AU
Karen	FEMALE	en-AU
Arthur	MALE	en-GB
Daniel	MALE	en-GB
Martha	FEMALE	en-GB
Moira	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-Fl
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	nI-BE
Xander	MALE	nI-NL
Nora	FEMALE	no-NO
Zosia	FEMALE	ρl-PL
Luciana	FEMALE	ρt-BR

Joana	FEMALE	ρt-PT
loana	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)

Name bits1	Gender FEMALE	Language 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)

Name	Gender	Language
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	са
czech	MALE	CS
welsh	MALE	су
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-gaeilge	UNKNOWN	ga
	UNKNOWN	
scottish-gaelic-test		gd
greek-ancient	MALE	grc
gujarati-test	UNKNOWN	gu
hindi	MALE	hi
croatian	MALE	hr
hungarian	MALE	hυ
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	kυ
latin	MALE	la
lingua_franca_nova	MALE	Ifn
lithuanian	MALE	lt
		lv
latvian	MALE	
macedonian	MALE	mk
mələyələm	MALE	ml
malay	MALE	ms
nahuatl-classical	MALE	nci
nepali	MALE	ne
dutch	MALE	nl
norwegian	MALE	no
oriya-test	UNKNOWN	or
punjabi	UNKNOWN	ра
papiamento-test	UNKNOWN	рар
polish	MALE	
•		pl
brazil	MALE	pt-br
portugal	MALE	pt-pt
romanian	MALE	ro
russian	MALE	۲U
sinhala-test	UNKNOWN	si
slovak	MALE	sk
slovenian-test	UNKNOWN	sl
serbian	MALE	sr
swedish	MALE	SV
swahili-test	MALE	SW
	MALE	
tamil		ta
telugu-test	UNKNOWN	te

MALE	tr
UNKNOWN	ur
MALE	vi
MALE	vi-hue
MALE	vi-sgn
MALE	zh
MALE	zh-yue
	UNKNOWN MALE MALE MALE MALE

17.1.8. AWS Polly

Tested: 27.08.2021 Number of voices: 63

Name	Gender	Language
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
lvy	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
Səlli	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

^{* =} 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

Name	Gender	Language
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	nI-NL
Google polski	UNKNOWN	ρl-PL
Google português do Brasil	UNKNOWN	ρt-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: 27.08.2021 Number of voices: 81

Name Hoda Naayf Ivan HerenaRUS Jakub HelleRUS Michael Karsten Hedda HeddaRUS Stefan-Apollo	Gender FEMALE MALE FEMALE MALE FEMALE MALE FEMALE MALE FEMALE MALE FEMALE FEMALE	Language ar-EG ar-SA bg-BG ca-ES cs-CZ da-DK de-AT de-CH de-DE de-DE de-DE
Stefan-Apollo Stefanos	MALE MALE	de-DE el-GR

Catherine HayleyRUS HeatherRUS Linda George-Apollo HazelRUS Susan-Apollo Sean Heera-Apollo PriyaRUS Ravi-Apollo BenjaminRUS Guy24kRUS Jessa24kRUS Jessa24kRUS JessaPUS ZiraRUS HelenaRUS Laura-Apollo HildaRUS Raul-Apollo HiddaRUS Caroline HarmonieRUS Guillaume HortenseRUS Julie-Apollo Paul-Apollo Paul-Apollo Asaf Hemant Kalpana Kalpana-Apollo Matej Szabolcs Andika Cosimo-Apollo LuciaRUS Ayumi-Apollo HarukaRUS Ichiro-Apollo HeamiRUS	FEMALE FEMALE FEMALE FEMALE FEMALE MALE FEMALE MALE MALE MALE MALE MALE FEMALE MALE FEMALE MALE FEMALE	en-AUAA en-CABBBB en-INN SS en-Ben-Ben-Ben-Ben-Ben-Ben-Ben-Ben-Ben-B
Ayumi-Apollo HarukaRUS Ichiro-Apollo	FEMALE FEMALE MALE	ja-JP ja-JP ja-JP
HeloisaRUS	FEMALE	ρt-BR

17.1.13. Google Cloud Speech

Tested: 27.08.2021

Name	Gender	Language
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
	FEMALE	de-DE
de-DE-Wavenet-F		
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-Fl
fi-FI-Wavenet-A	FEMALE	fi-Fl
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 it-IT-Wavenet-C	FEMALE MALE	it-IT
		it-IT
it-IT-Wavenet-D ja-JP-Standard-A	MALE FEMALE	it-IT
ja-JP-Standard-B	FEMALE	ja-JP ja-JP
ja-JP-Standard-C	MALE	ja-JP ja-JP
ja-JP-Standard-D	MALE	ja-JP ja-JP
ja-JP-Standard-D ja-JP-Wavenet-A	FEMALE	ja-JP
ja-JP-Wavenet-B	FEMALE	ja-JP ja-JP
ja-JP-Wavenet-C	MALE	ja-JP ja-JP
ja-JP-Wavenet-D	MALE	ja-JP
kn-IN-Standard-A	FEMALE	kn-IN
kn-IN-Standard-B	MALE	kn-IN
KII IIV Stolloofo D		KII IIN

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
mI-IN-Standard-A	FEMALE	mI-IN
mI-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
	FEMALE	
nb-NO-Standard-C	MALE	nb-NO
nb-NO-Standard-D nb-no-Standard-E	FEMALE	nb-NO
	FEMALE	nb-NO
nb-no-Standard-E		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	nI-BE
nl-BE-Wavenet-A	FEMALE	nl-BE
nl-BE-Wavenet-B	MALE	nl-BE
nI-NL-Standard-A	FEMALE	nI-NL
nl-NL-Standard-B	MALE	nl-NL
nI-NL-Standard-C	MALE	nl-NL
nI-NL-Standard-D	FEMALE	nl-NL
nl-NL-Standard-E	FEMALE	nl-NL
nI-NL-Wavenet-A	FEMALE	nl-NL
nI-NL-Wavenet-B	MALE	nI-NL
nI-NL-Wavenet-C	MALE	nI-NL
nI-NL-Wavenet-D	FEMALE	nI-NL

nI-NL-Wavenet-E	FEMALE	nl-NL
pa-IN-Standard-A	FEMALE	
•		pa-IN
pa-IN-Standard-B	MALE	pa-IN
pa-IN-Standard-C	FEMALE	NI-6q
pa-IN-Standard-D	MALE	pa-IN
•		•
pa-IN-Wavenet-A	FEMALE	pa-IN
pa-IN-Wavenet-B	MALE	pa-IN
pa-IN-Wavenet-C	FEMALE	pa-IN
•	MALE	•
pa-IN-Wavenet-D	==	pa-IN
pl-PL-Standard-A	FEMALE	ρl-PL
pl-PL-Standard-B	MALE	ρI-PL
pl-PL-Standard-C	MALE	ρΙ-PL
•	FEMALE	•
pl-PL-Standard-D		ρl-PL
pl-PL-Standard-E	FEMALE	ρl-PL
pl-PL-Wavenet-A	FEMALE	ρl-PL
pl-PL-Wavenet-B	MALE	ρΙ-PL
•		•
pI-PL-Wavenet-C	MALE	ρl-PL
pI-PL-Wavenet-D	FEMALE	ρI-PL
pl-PL-Wavenet-E	FEMALE	ρl-PL
pt-BR-Standard-A	FEMALE	ρt-BR
•		•
pt-BR-Wavenet-A	FEMALE	ρt-BR
pt-PT-Standard-A	FEMALE	ρt-PT
pt-PT-Standard-B	MALE	ρt-PT
pt-PT-Standard-C	MALE	ρt-PT
•	FEMALE	•
pt-PT-Standard-D		ρt-PT
pt-PT-Wavenet-A	FEMALE	ρt-PT
pt-PT-Wavenet-B	MALE	ρt-PT
pt-PT-Wavenet-C	MALE	ρt-PT
pt-PT-Wavenet-D	FEMALE	ρt-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
	FEMALE	
ru-RU-Wavenet-C		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
ta-IN-Standard-A	FEMALE	ta-IN
to III Storiodiu-A	I LITALL	10-114

ta-IN-Standard-B ta-IN-Wavenet-A	MALE FEMALE	ta-IN ta-IN
ta-IN-Wavenet-B	MALE	ta-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