

Unity WebGL Speech Synthesis

The `WebGL for Speech Synthesis` package is available in the [Unity Asset Store](#). [Online documentation](#) is available.

See Also

The `WebGL for Speech Detection` package is available in the [Unity Asset Store](#). [Online documentation](#) is available.

The `WebGL Speech` package is available in the [Unity Asset Store](#).
[Online documentation](#) is available.

Supported Platforms

- WebGL
- Mac Standalone (using [Speech Proxy](#))
- Mac Unity Editor (using [Speech Proxy](#))
- Windows Standalone (using [Speech Proxy](#))
- Windows Unity Editor (using [Speech Proxy](#))

Target

The `WebGL for Speech Synthesis` package is created for Unity version `5.3` or better.

This package was originally created for the `WebGL` platform and supports other platforms using a `Speech Proxy`.

This package requires a browser with the built-in [Web Speech API](#), like Chrome.

Synthesis requires an Internet connection.

Check the [browser compatibility](#) to see which browsers implemented the `Speech API`.

Tested Browsers

- Chrome
- Edge
- Firefox
- Safari

Changelog

1.0 - Initial creation of the project

1.1 - Added support for `Speech Proxy`

1.2 - Minor fixes

1.3 - Added support for speech synthesis in edit mode

1.4 - Added support for `MacOS` for `play-mode` and `edit-mode`

1.5 - Added example without GUI

1.6 - Added buffering for language data

1.7 - Cleaned up sample code

1.8 - Updated sample scenes to use default 5000 port

1.9 - Added support for 2018.1 and 2019.1.

Demos

[Demo 01 Unity Speech Synthesis](#)

Documentation

This document can be accessed in `Assets/WebGLSpeechSynthesis/Readme.pdf` or use the menuitem `GameObject->WebGLSpeechSynthesis->Online Documentation`

Sample Scenes

These sample scenes are located in the `Assets/WebGLSpeechSynthesis/` folder:

1 `Scenes/Example01Synthesis` - Uses `WebGLSpeechSynthesisPlugin` to do speech synthesis

2 `Scenes/Example02Proxy` - Uses `ProxySpeechSynthesisPlugin` to do speech synthesis

3 `Scenes/Example03ProxyManagement` - Management methods for launching and modifying the proxy

4 `Scenes/Example04SbaitsoClone` - Clone of a classic text to speech demo

These sample scenes are located in the `Assets/WebGLSpeechSynthesis/Editor/` folder:

5 `Example05PanelSynthesis.cs` - Unity editor panel for speech synthesis that works in play mode and edit mode

These sample scenes are located in the `Assets/WebGLSpeechSynthesis/` folder:

6 `Scenes/Example06NoGUI` - Speech synthesis example without a GUI

7 `Scenes/Example07Buttons` - Speech synthesis where buttons use random voices

Modes

Synthesis modes use the same API interface other than where the instance comes from.

WebGL Mode

The `WebGLSpeechSynthesisPlugin` uses native synthesis only for the WebGL platform.

```
ISpeechSynthesisPlugin speechSynthesisPlugin = WebGLSpeechSynthesisPlugin.GetInstance();
```

WebGL mode requires a `WebGLSpeechSynthesisPlugin` gameobject in the scene which can be created from the `GameObject->WebGLSpeechSynthesis->Create WebGLSpeechSynthesisPlugin` menu item.

Proxy Mode

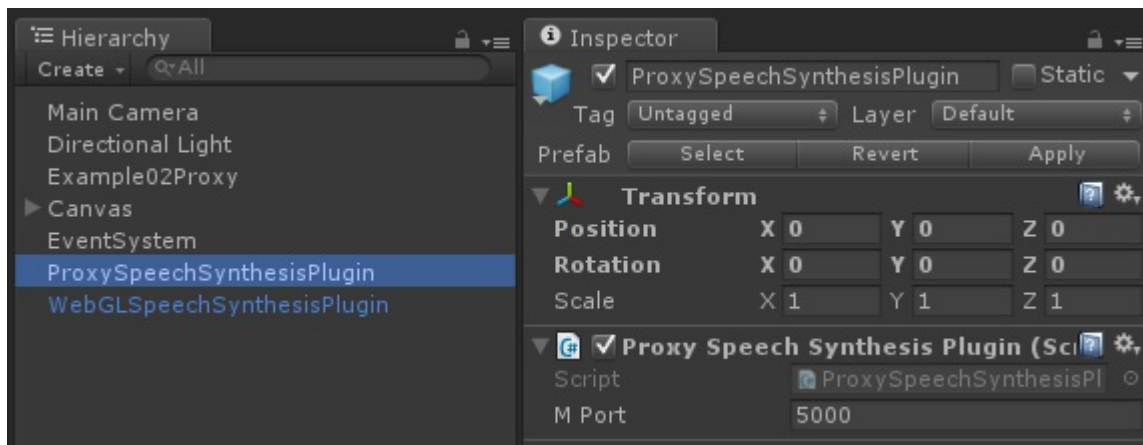
The `ProxySpeechSynthesisPlugin` uses a `Speech Proxy` to do speech synthesis for non-WebGL platforms.

```
ISpeechSynthesisPlugin speechSynthesisPlugin = ProxySpeechSynthesisPlugin.GetInstance();
```

Proxy mode requires a `ProxySpeechSynthesisPlugin` gameobject in the scene which can be created from the `GameObject->WebGLSpeechSynthesis->Create ProxySpeechSynthesisPlugin` menu item.

Also a `Speech Proxy` needs to be running for `Proxy` mode to work.

The `Proxy Port` is assigned by the `ProxySpeechSynthesisPlugin` gameobject with the inspector and needs to match the port used by the `Speech Proxy`.



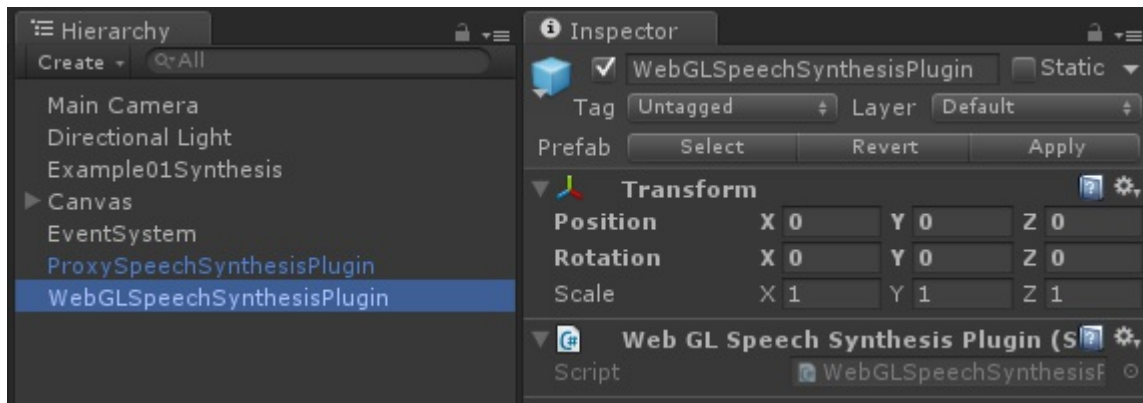
Quick Start

1 Switch to the `WebGL` platform in 'Build Settings' [image_2](#)

2 Create one `WebGLSpeechSynthesisPlugin` `GameObject` in the scene with the menu `GameObject->WebGLSpeechSynthesis->Create WebGLSpeechSynthesisPlugin` [image_3](#)

3 (Optional) You may need a voices dropdown in your UI, use the menuitem `GameObject->WebGLSpeechSynthesis->Create Voices Dropdown` [image_4](#)

4 At this point you should have a scene with the `WebGLSpeechSynthesisPlugin`, and (optionally) a voices dropdown added to the canvas.



5 Create a custom MonoBehaviour script to use the `WebGLSpeechSynthesis` API

6 Add a using statement to get access to the `WebGLSpeechSynthesis` namespace

```
using UnityWebGLSpeechSynthesis;
```

Speech Synthesis Plugin Quick Setup

7 Add a reference for `WebGLSpeechSynthesisPlugin` to the script

```
/// <summary>
/// Reference to the plugin
/// </summary>
private ISpeechSynthesisPlugin _mSpeechSynthesisPlugin = null;
```

8 In the `start` event check if the plugin is available.

```
// Use this for initialization
IEnumerator Start()
{
    // get singleton instance
    _mSpeechSynthesisPlugin = WebGLSpeechSynthesisPlugin.GetInstance();
    if (null == _mSpeechSynthesisPlugin)
    {
        Debug.LogError("WebGL Speech Synthesis Plugin is not set!");
        yield break;
    }

    // wait for proxy to become available
    while (!_mSpeechSynthesisPlugin.IsAvailable())
    {
        yield return null;
    }
}
```

Speak Quick Setup

9 Add a field to hold the utterance that will be spoken

```
/// <summary>
/// Reference to the utterance which holds the voice and text to speak
/// </summary>
```

```
private SpeechSynthesisUtterance _mSpeechSynthesisUtterance = null;
```

10 Create an instance of `SpeechSynthesisUtterance`

```
// Create an instance of SpeechSynthesisUtterance
_mSpeechSynthesisPlugin.CreateSpeechSynthesisUtterance((utterance) =>
{
    //Debug.LogFormat("Utterance created: {0}", utterance._mReference);
    _mSpeechSynthesisUtterance = utterance;
});
```

11 Speak the utterance

```
// Cancel if already speaking
_mSpeechSynthesisPlugin.Cancel();

// Set the text that will be spoken
_mSpeechSynthesisPlugin.SetText(_mSpeechSynthesisUtterance, _mInputField.text);

// Use the plugin to speak the utterance
_mSpeechSynthesisPlugin.Speak(_mSpeechSynthesisUtterance);
```

Voice Selection Quick Setup

12 Add a field to hold the available voices

```
/// <summary>
/// Reference to the supported voices
/// </summary>
private VoiceResult _mVoiceResult = null;
```

13 Use the plugin to get the available voices

```
_mSpeechSynthesisPlugin.GetVoices((voiceResult) =>
{
    _mVoiceResult = voiceResult;
});
```

14 Select the desired voice from the voice result

```
if (null != _mVoiceResult &&
    null != _mVoiceResult.voices)
{
    for (int i = 0; i < _mVoiceResult.voices.Length; ++i)
    {
        Voice voice = _mVoiceResult.voices[i];
        if (null == voice)
        {
            continue;
        }
        // select voice by display name
        if (!string.IsNullOrEmpty(voice.display))
        {
            options.Add(voice.display);
        }
        // select voice by name
    }
}
```

```

        else if (!string.IsNullOrEmpty(voice.name))
        {
            options.Add(voice.name);
        }
    }
}

```

15 Set the voice on the utterance

```

_mSpeechSynthesisPlugin.SetVoice(_mSpeechSynthesisUtterance, voice);

```

16 Set text on the utterance and call `Speak`

```

// Set the text that will be spoken
_mSpeechSynthesisPlugin.SetText(_mSpeechSynthesisUtterance, text);

// Use the plugin to speak the utterance
_mSpeechSynthesisPlugin.Speak(_mSpeechSynthesisUtterance);

```

Proxy Management

17 Launch the `Speech Proxy`

```

// get the singleton instance
_mSpeechSynthesisPlugin = ProxySpeechSynthesisPlugin.GetInstance();

// check the reference to the plugin
if (null != _mSpeechSynthesisPlugin)
{
    // launch the proxy
    _mSpeechSynthesisPlugin.ManagementLaunchProxy();
}

```

18 Set Proxy Port

```

int port = 5000;
_mSpeechSynthesisPlugin.ManagementSetProxyPort(port);

```

19 Open Browser Tab

```

_mSpeechSynthesisPlugin.ManagementOpenBrowserTab();

```

20 Close Browser Tab

```

_mSpeechSynthesisPlugin.ManagementCloseBrowserTab();

```

21 Close Proxy

```

_mSpeechSynthesisPlugin.ManagementCloseProxy();

```

Scenes

Example01 - Speech Synthesis

The scene is located at `Assets/WebGLSpeechSynthesis/Scenes/Example01Synthesis.unity`

The example source is located at `Assets/WebGLSpeechSynthesis/Scripts/Example01Synthesis.cs` .



Example02 - Proxy Synthesis

The scene is located at `Assets/WebGLSpeechSynthesis/Scenes/Example02Proxy.unity`

The example source is located at `Assets/WebGLSpeechSynthesis/Scripts/Example02Proxy.cs` .

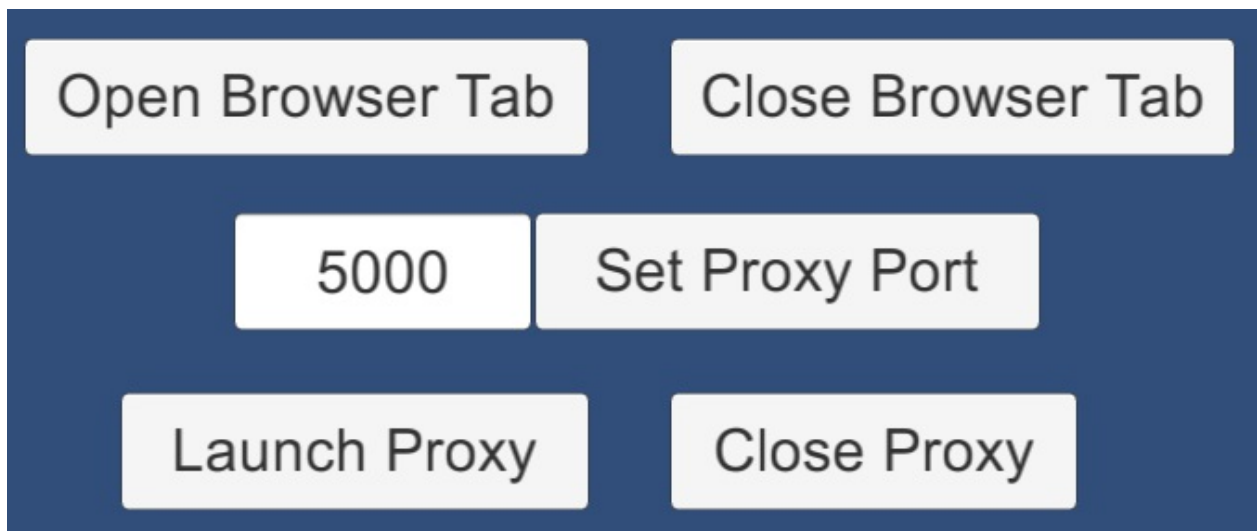
The example code is nearly identical to the non-proxy example, except for getting the synthesis instance from `ProxySpeechSynthesisPlugin` .

```
// get the singleton instance
_mSpeechSynthesisPlugin = ProxySpeechSynthesisPlugin.GetInstance();
```

Example03 - Proxy Management

The scene is located at `Assets/WebGLSpeechSynthesis/Scenes/Example03ProxyManagement.unity` .

The example source is located at `Assets/WebGLSpeechSynthesis/Scripts/Example03ProxyManagement.cs` .



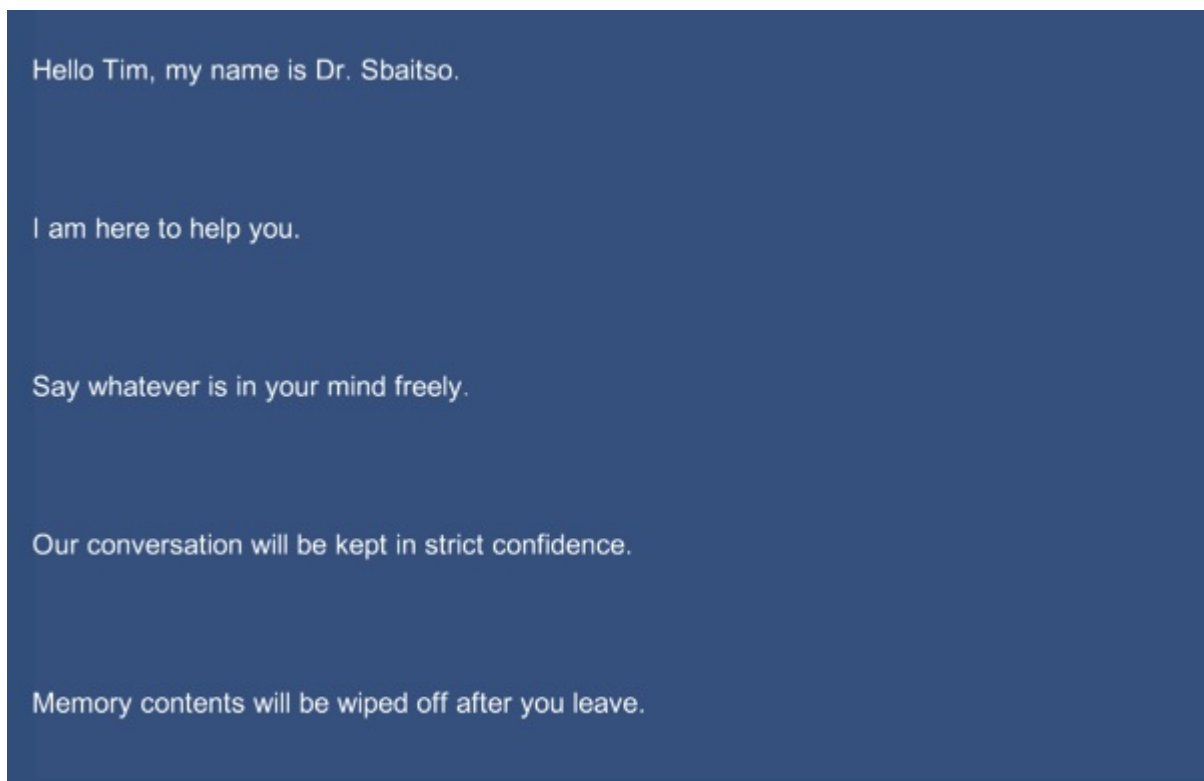
Example04 - Sbaitso Clone

The scene is located at `Assets/WebGLSpeechSynthesis/Scenes/Example04SbaitsoClone.unity` .

The example source is located at `Assets/WebGLSpeechSynthesis/Scripts/Example04SbaitsoClone.cs` .

The AI is controlled from `Assets/WebGLSpeechSynthesis/Scripts/AISbaitso.cs` which is a port from `JAVA` .

The example is a clone of the classic `Dr. Sbaitso Demo` that was bundled with `Sound Blaster Pro Audio Cards` which showcased text to speech in the `1990s` .



Example05 - Panel Synthesis

The editor panel script is located at `Assets/WebGLSpeechSynthesis/Editor/Example05PanelSynthesis.cs` and is activated via the

Window->WebGLSpeechSynthesis->Open Example05PanelSynthesis menu item.

The example panel shows speech synthesis working in edit and play modes.

The panel example uses the EditorProxySpeechSynthesisPlugin to proxy the speech api in edit mode.

Example06 - No GUI

The scene is located at Assets/WebGLSpeechSynthesis/Scenes/Example06NoGUI.unity

The example source is located at Assets/WebGLSpeechSynthesis/Scripts/Example06NoGUI.cs .

Example07 - Buttons

The scene is located at Assets/WebGLSpeechSynthesis/Scenes/Example07Buttons.unity

The example source is located at Assets/WebGLSpeechSynthesis/Scripts/Example07Buttons.cs .

Support

Send questions and/or feedback to the support@theylovegames.com email.