

iZotope Hybrid Reverb for Wwise

Introduction

The iZotope Hybrid Reverb effect for Wwise is great for realistically simulating acoustic spaces because it combines an intelligent algorithmic reverb with a convolution reverb. This allows it to produce realistic simulations of acoustic environments with minimal CPU and memory usage.

When an impulse response is loaded, the Hybrid Reverb effect analyzes it and retrieves the important sections for convolution. It also automatically generates settings for the algorithmic tail closely matching the real reverb tail. This provides the realistic sound of a full convolution reverb with the control and efficiency of a purely algorithmic one.

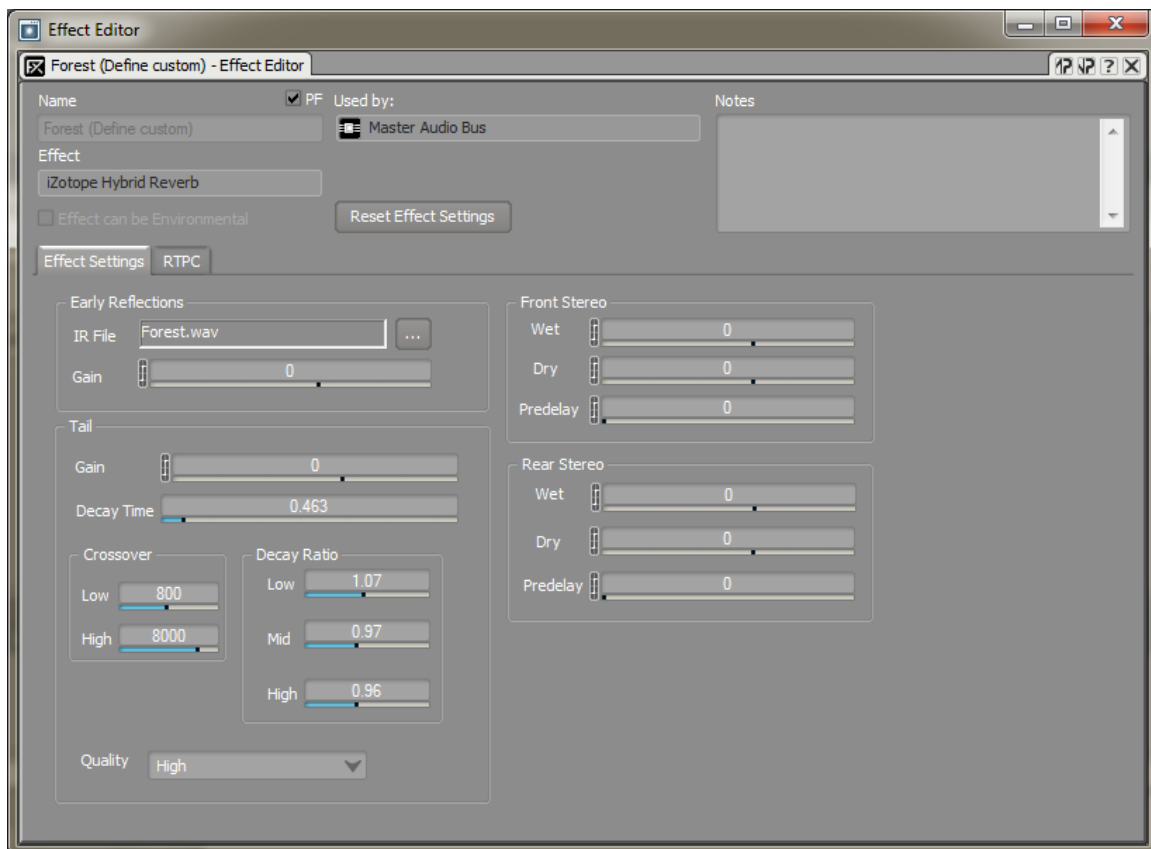


Figure 1 - iZotope Hybrid Reverb

Early Reflections

The early reflections section of the effect is used to load an impulse response (IR) file and to adjust the *Gain* of the early reflections, which can be controlled as an RTPC. When an IR is loaded, the early reflections information is extracted for convolution and the settings in the tail section are automatically adjusted. (Note: Impulse Response files should be 16-bit or 24-bit and either mono or stereo)

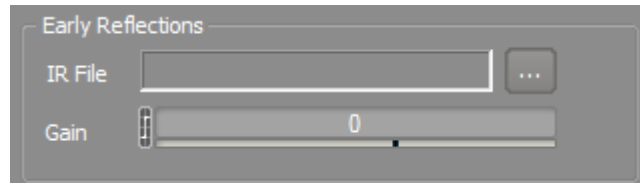


Figure 2 - Early Reflections Section

Tail

The tail section of the effect controls the algorithmic portion of the Hybrid Reverb. The *Gain* and *Decay Time* of the tail can be adjusted here along with controls for adjusting *Decay Ratio* in the three frequency bands controlled by the *Crossover*. The *Quality* setting allows for adjustments between tail fidelity and CPU usage with low quality mode corresponding to more discrete echoes being apparent in the tail and a rougher overall decay.



Figure 3 - Tail Controls

Mix Controls

Hybrid Reverb separates *Wet* gain, *Dry* gain, and *Predelay* for front stereo and rear stereo images in surround sound (these can all be adjusted in real time using Wwise RTPCs). The *Predelay* values can be used to simulate the distance to the object creating first reflections and can be staggered in surround for a more realistic output.

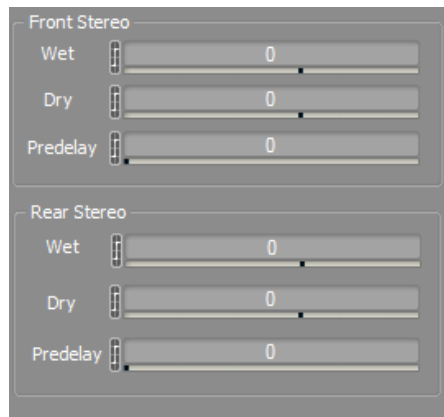


Figure 4 - Mix Controls

Selecting a good Impulse Response

The iZotope Hybrid Reverb works with a wide range of impulse response data but there will be some impulses that it cannot accurately model. To get the best results use impulses that are longer than 500 ms and with a 16-bit depth.

Additionally, the iZotope Hybrid Reverb has excellent CPU performance with longer impulse response files (6-15 seconds), which can cause problems and heavy CPU load in ordinary convolution reverbs. However, impulse responses under 100ms will not be analyzed as they are too short to extract meaningful information from.

For some great impulse responses we recommend the free Smplicity Bricasti M7 Impulse Response Library (<http://www.smplicity.com/bricasti-m7-impulse-responses/>). (Note: they should be converted to 16 bit stereo files before use)

Interface Element	Description
IR File [...]	This button will open a file loading dialog to select the impulse response wav file. Wav files should be 16 or 24 bit and mono or stereo.
Early Reflection Gain	The gain of the processed reverb early reflection convolution. Default value: 0 Range: -96 to 24 Units: dB
Tail Gain	The gain of the processed algorithmic reverb tail. Default value: 0 Range: -96 to 24 Units: dB
Decay Time	The RT15 decay time for the reverb tail. This is the time in seconds it takes for the tail to drop by 15dB. Default value: 0.5 Range: 0.125 to 5.0 Units: Seconds (RT15)
Crossover Low	The frequency of the low crossover point. Default value: 400 Range: 20 to 1000 Units: Hz
Crossover High	The frequency of the high crossover point. Default value: 10000 Range: 800 to 20000 Units: Hz
Decay Ratio Low	A multiplier for the low frequency range decay time. Default value: 1 Range: 0.25 to 2.0
Decay Ratio Mid	A multiplier for the mid frequency range decay time. Default value: 1 Range: 0.25 to 2.0

Decay Ratio High	<p>A multiplier for the high frequency range decay time.</p> <p>Default value: 1 Range: 0.25 to 2.0</p>
Tail Quality	<p>Adjusts the fidelity of the reverb tail. Low quality mode will have more discrete echoes but lower CPU and memory usage.</p> <p>Default value: High Range: Low to High</p>
Front Stereo Wet	<p>The gain of the processed signal to be summed with original signal for Front Left and Front Right channels.</p> <p>Default value: 0 Range: -96 to 24 Units: dB</p>
Front Stereo Dry	<p>The gain of the original signal to be summed with processed signal for Front Left and Front Right channels.</p> <p>Default value: 0 Range: -96 to 24 Units: dB</p>
Front Stereo Predelay	<p>Determines the amount of time that the dry signal will be delayed before being sent to the reverb for Front Left and Front Right channels. This gives the effect of adjusting the distance to the object producing the first reflection.</p> <p>Default value: 0 Range: 0 to 100 Units: milliseconds</p>

Rear Stereo Wet	<p>The gain of the processed signal to be summed with original signal for Rear Left and Rear Right channels.</p> <p>Default value: 0 Range: -96 to 24 Units: dB</p>
Rear Stereo Dry	<p>The gain of the original signal to be summed with processed signal for Rear Left and Rear Right channels.</p> <p>Default value: 0 Range: -96 to 24 Units: dB</p>
Rear Stereo Predelay	<p>Determines the amount of time that the dry signal will be delayed before being sent to the reverb for Rear Left and Rear Right channels. This gives the effect of adjusting the distance to the object producing the first reflection.</p> <p>Default value: 0 Range: 0 to 100 Units: milliseconds</p>