Creating Scores for Adobe® Soundbooth®

Contents

Overview

The Soundbooth Score Toolkit enables content developers to create scores for use within Adobe Soundbooth. This document assumes that you have a copy of Soundbooth CS4 installed and understand how scores are used within the application. For further information on how scores are used in Soundbooth, see Adobe Soundbooth Help. This document also assumes you have a basic understanding of music composition and are familiar with creating music using a DAW (Digital Audio Workstation) like Adobe Audition.

What kind of content is required for Soundbooth Scores?
Soundbooth Scores are music pieces that adapt themselves to user-specified parameters, such as the length of a video, by intelligently rearranging the musical structure and altering the mix to match a desired intensity.

In general, content created for Soundbooth Scores differs from conventional music because it generates output that varies in intensity and interpretation (vertical variation), as well as over time (horizontal variation). For example, you can let the user apply softer instrumentation for the "I do" part of a wedding video and determine how long the music should be.

Soundbooth Scores are also great for delivering atmospheric pieces that contain ambient noises, environmental sounds, and more.

File Formats

When creating and working with scores, you will deal with different formats:

1.SMST:

Score Toolkit document. Used by the Toolkit to create scores, but cannot be opened by Soundbooth itself.

2.SBST:

Soundbooth Score Template. This is the actual score delivery format that is exported from the Toolkit and opened by Soundbooth.

3.SBSC:

Soundbooth Score Document. Soundbooth uses this format internally to save changes users make to a score clip, such as keyframe adjustments, song variations, etc. In Soundbooth CS3, an .sbsc file could be saved directly, but in CS4 this format is no longer visible to the user because it is part of the ASND (multitrack document) format that contains the score clip.

4.Audio source files (WAV or AIFF):

These are the actual audio files, typically exported from your DAW.

Functionality and Technology

Overview

Soundbooth Scores are based on a multitrack playback engine. The individual tracks are not visible. The visible objects represent Intensities and Modifiers.

The user can adjust four main parameters:

- 1. Length
- 2. Preset/Automatic mode
- 3. Intensity
- 4. Modifiers

1.Length:

Length adjustment is accomplished by dividing the score into PARTS, which describe musical segments like Intro, Part A, Part B, Outro etc.. The PARTS are divided into CLIPS, which have special attributes that are described later.

To summarize briefly: the length adjustment of a score is enabled by dividing a score into smaller segments and recombining them later.

The user can adjust the length by either using the score clip's left or right trim handle or typing a desired length in the hot text field of the score clip's Property panel.

2.Preset/Automatic mode:

There are two main modes, PRESET and AUTOMATIC.

The preset mode is enabled when selecting a variation of a song. Song variations are usually indicated by a length like "30 seconds". If a user selects a specific song variation, it is maintained while resizing the score, meaning that the part order stays the same—only the part lengths are adapted.

Song variations are defined by the composer. It is important to understand that you as a composer should provide as many variations as useful. These song variations reflect a composer decision about how a song should be set up for specific lengths.

In automatic mode, the song is rearranged by the Rearranger. This mechanism rearranges a song to a user-selected length, using the song variation that best fits the duration and adapting its part lengths accordingly. This is a more flexible way to adapt a score to a specific length; for a short duration, a song variation consisting only of Intro and End might be better than a more complex structure that is forced into a short length.

3.Intensity

The Intensity slider is an UI element that lets users step through different musical intensity levels. As users raise this setting, the intensity and density of a score increases. For example, the drums might start with a low-intensity rim shot, change over to a moderate snare hit, and then, at higher levels, a loud, hard-hit snare.

4.Modifiers

Modifiers control the level of specific audio content. For example, imagine your song has a cool drum-and-bass groove, among other instruments like guitars and so on. If the composer wants to let the user hear only that drum-and-bass groove, she has to assign all other content to a Modifier. This allows the user to decrease or increase the level of other audio content.

The Details

Before you make a score, consider the following details about the general functionality of a Soundbooth Score and its musical structure:

Music usually has a fixed linear structure. Length adjustment is only possible via technical methods like time-stretching, etc. We do not use any such technical methods for length changes. Length adjustment of a score clip is achieved by recombining small segments of music.

The background: We have deconstructed music in two ways: the horizontal/time dimension and the vertical/intensity dimension. Lets call each of them a "layer."

Horizontal Layer

The horizontal layer is the time axis. We slice music in segments.

Parts
The first kind of segments are PARTS. These parts are best described as musical blocks like intro, main part, end, etc. A short score can consist of only these parts. However, this simple structure would only allow users to repeat entire segments like intro, n...main, end.

Because you know where the intro, main, end part is in your song, you have to provide this information. Below you see an example representation of an entire song that's divided into three parts:

Part 1   Part 2   Part 3
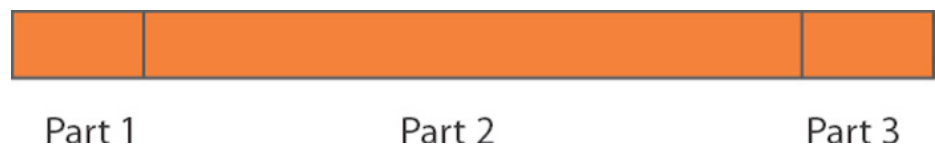
Clips
For better granularity and resizeability of musical material, we divide parts into sub-segments called clips. For graphical representations in this document, we came up with a color code that differentiates the clip types (the types are explained later).

Here's an example that shows how a part (part2) is segmented into three clips: start, loop, and end:

Part 1   Part 2   Part 3

The advantage of the sub-segmentation of a part into clips is best explained with the following example:

Imagine an 8-bar drum pattern with the following structure: At the beginning of bar one, the drummer hits the cymbal. Then he plays the same groove from bar two to bar seven. In bar eight, he plays a tom-tom roll. So nothing changes from bar three to bar eight: Bar one is the cymbal hit, bar two is the normal groove, this groove is repeated in bars 3-7, in bar eight is the tom-tom roll. Bar 3-7 contains redundant audio because we already have that groove in bar two. To play back the 8-bar groove we only need bar 1, bar 2 and bar 8. We repeat bar two from bar 3 to bar 7 because:

- 1.This prevents a lot of redundant audio
- 2.With the described segmentation, we gain the ability to play back any length of the groove, from three to n...bars without having the tom-tom figure every 8 bars (and surely the cymbal hit at bar 1).

So there is unique content at the start and the end. With the division of the example drum part into 3 clips, we now have the ability to assign attributes to individual clips.

A Soundbooth Score supports 3 clip attributes:

1.Start

- This attribute indicates that the clip will be played back at the start of a part.

2.Loop

- This attribute indicates that the clip is loopable. Loop clips are the "rubber band" of a part and can be repeated multiple times.

3.End

- This attribute indicates that the clip is played back at the end of a part.

We gain a finer granularity for a part. Without subdividing a part, the only way for a longer play back of a 4-bar part is to play 4,8,12,16 bars, etc. With the subdivision and the attributes set it is possible to play back 1,2,4,6,8,10,12,14,16 bars, etc. Other playback structures are possible and will be explained later. It is possible to define parts with a subset of clips. The individual clip combinations for a part are organized in PART VARIATIONS.

What is the difference between a Part and a Part variation?
A PART is an entire musical block like an intro, chorus, verse, or end. The parts can be divided into the aforementioned segments called CLIPS. PART VARIATIONS are part alternatives for different lengths and a Soundbooth Score needs at least one. When you divide the part into start, loop and end clips, a number of part variations are possible:

1. Start

2. Start End

3. Start Loop End

4. Loop End

5. Loop

6. End

The "Understanding The Rearranger" chapter has more details about part variations.

Summary:
- The entire song has to be divided in parts.
- Each part has multiple part variations.
- The parts are divided into clips.
- Clips attributes are start, loop, and end.

How do I set these clip attributes?
These attributes are specified in the Score Toolkit, which is explained later.

Now let's examine the next structural level of a score.

Song Variations
Song variations are different combinations of parts. You as a composer should deliver as many useful song variations as possible.

Imagine you have defined three parts, each part with 3 different variations. After that, you have to define song variations from the part variations; for more information, see the "Song Variations" section in the "Understanding the Rearranger" chapter. But first, let's focus on the composer defined variations, which are usually indicated by their length (for example, 30 seconds). Typically the user looks for a composer-specified score length, then she uses the trim handle and resizes the score to a new length.

When having selected a song variation in the score clip's Properties panel, the loop segments act as "rubber bands" to resize a score. But the composer-defined song structure like intro, main 1, main 2, main 3, and end remains untouched.

The results are different when switching to Automatic mode, where the rearranger will change the song structure. The resize behavior is determined by a couple of settings the composer can make in the Score Toolkit, which is described in a later chapter.

What is the rearranger doing?

The rearranger finds a new arrangement when resizing a score clip to a new user-defined length. It is in the composer's hand to provide many parts, part variations, and song variations for good rearranger results. The most important principle is that the rearranger tries to find the song variation that has the lowest number of repeated segments.

More details about this can be found in the "Understanding the Rearranger" chapter.

Vertical Layer

The vertical layer of a Soundbooth Score is intensity. While a song has characteristic elements, such as its harmonic and melodic structure, it can be varied by orchestration, interpretation, etc. A song can be played by a bluegrass band or a heavy metal band—it has the same key elements, but is interpreted differently. In Soundbooth, a user can adjust a score's intensity over time, so things like the instrumentation can be adapted to different points in time. Additionally, Soundbooth provides one or two modifier parameters—these are certain elements of a score that can be adjusted separately, such as the instrument playing the melody. This can be useful if you don't want a guitar solo to disturb dialogue, for example. The modifier tracks also adhere to different intensities, so if the backing instrumentation gets more intense, the melody above it should be adapted as well (imagine a modifier guitar melody that changes from a clean sound to a heavy-metal tone). Let's look at the details:

Intensities:

The idea is to write a song, then record it with different intensities. Each intensity relates to a submixed track that has been bounced from your DAW, so you need one audio file per intensity, and the downmixed audio file should contain all audio that is non-modifiable. We give the user the ability to adjust the intensity of a score at specific times, so the user can decide how intense the score should be in a specific scene of a video, for example. We recommend that you provide scores with a minimum of 3 intensities and a maximum of 10.

Modifiers:

A modifier is a UI slider that lets the user control the level of certain audio tracks provided by the composer. Modifiable content gives the user control over specific audio. This can be a solo guitar, a horn section, ambient noise...whatever you as a composer want to give the user control over.

Each intensity level can have its own modifier.

- If you have 5 intensity levels, you can provide 5 different modifier tracks per modifier. We allow 2 modifiers per score.

One modifier track can be associated to more than one intensity level.

- If you have five intensity levels, you can associate 1 modifier track to all intensities, defining an intensity range. A modifier track's intensity range can't overlap an intensity range defined by a different modifier track.

Other combinations are possible.

Modifier content for a Part can be sliced differently than the playback (intensity content) regarding the clip length.

Now let's see how clip structures are resized over time. (For more information on this, see the "Understanding the Rearranger" chapter.)

Clip Structures

With a one intensity/one modifier Part we'll show examples of some slicing rules:

Let's begin with an 8-bar Part. As mentioned earlier, we have sliced our drummer example into 3 segments: 1 bar Start, 1 bar Loop, and 1 bar End. Therefore, the audio clips for the intensity tracks are each one bar long. Let's call that slicing "symmetrical" because the modifier content has the same musical granularity as the intensity content. But usually your modifier content follows different musical rules. It is possible to slice the modifier content into clips of different clip size than the intensity content. Let's call that "asymmetrical." With this "asymmetrical" time structure and a couple of other parameters, we can define a lot of part variations. These part variations will later become the building blocks for the rearranger.

This picture shows the original clips structure for a part variation, only one intensity and one modifier track shown. Intensity is on top, modifier on bottom.
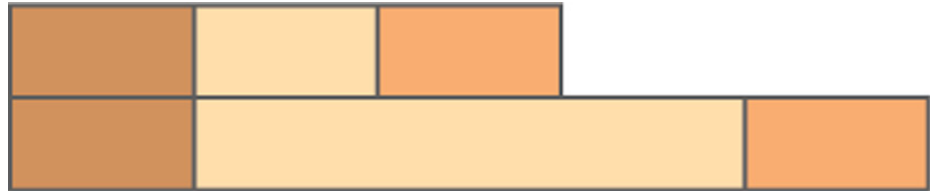
Play back result:
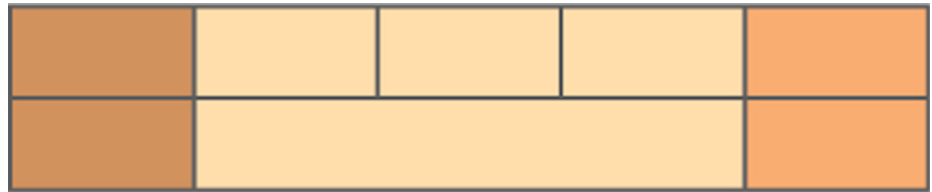
Explanation:

The granularity of the part length is determined by the modifiable content. In our example the intensity track has the following clips

2 bars start, 2 bars loop, 2 bars end

and for the modifiable content...

2 bars start, 6 bars loop, 2 bars end.

In this part variation the modifiable content determines the length of the part variation, in this case 10 bars.
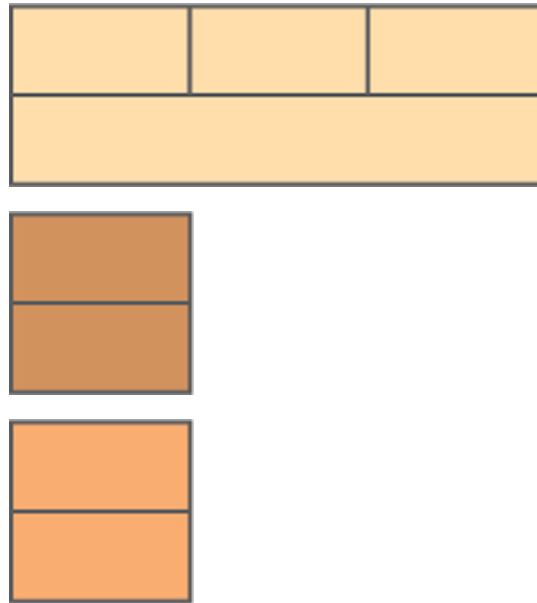
A little step back:

With the given granularity of the clips you can define a lot of part variations. There are two categories of them, let's call them "useful" and "possible."

Useful part variations:
Useful part variations are part variations that have both intensity and modifier audio content at any position in time.
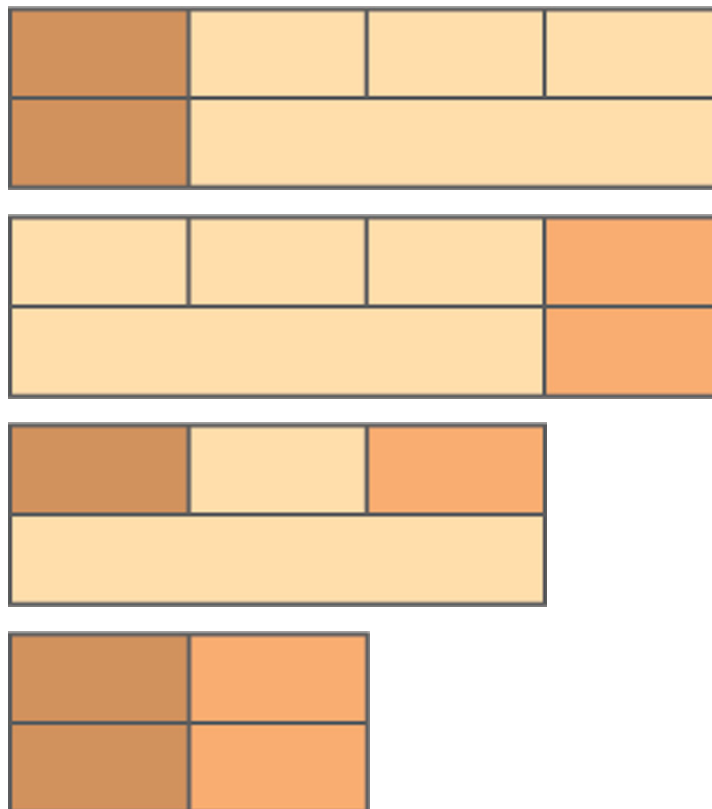
The next part variation type is useful too, but the definition has to be done in Score Toolkit. The background: The loopable segment in our example is 6 bars long. It is possible to shorten the musical length by defining that shorter length in the Score Toolkit.
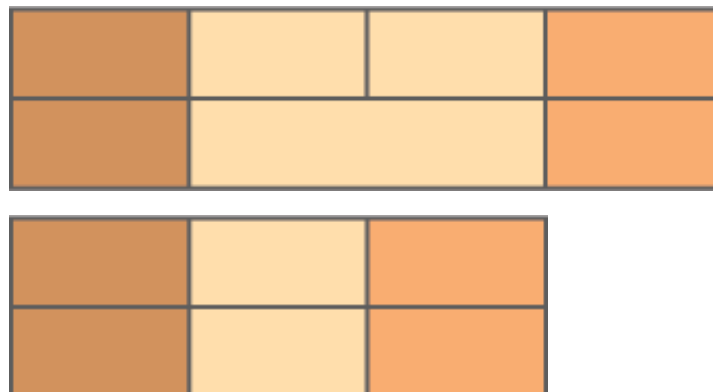
IMPORTANT: Never define part variations that contain more than one Start, Loop and End clip. For example, if you have defined Loop segments at different lengths like 4 bar and 8 bar, don't define a part variation like Start, Loop 4 bar, Loop 8 bar, End. Start, Loop, and End must be exclusive within a part variation!

Possible part variations:

Possible part variations are part variations that lack intensity and modifier audio content at all positions in time. We see this as a disadvantage because the user can adjust a modifier but doesn't hear anything in that moment. These part variations are valid part variations anyway.
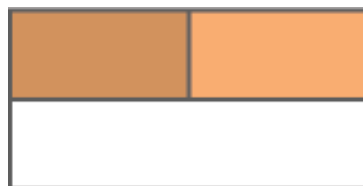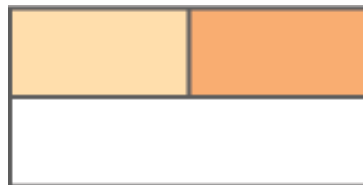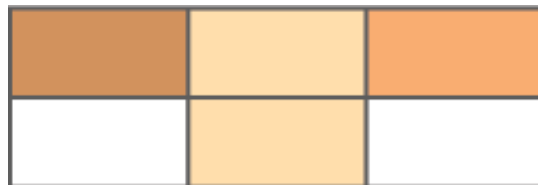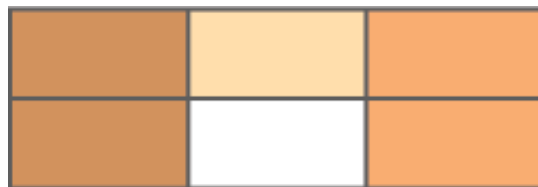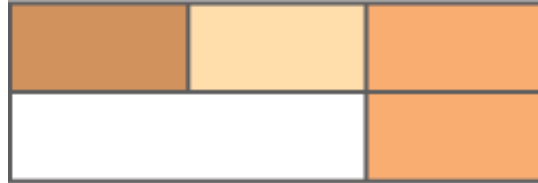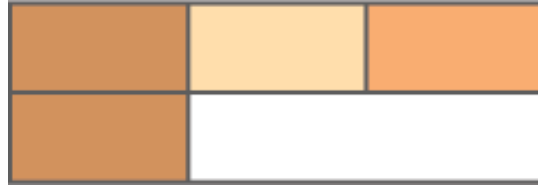
A technical note:

Please keep in mind that the composer has to take care about the musical usability of part variations in terms of smooth clip transition. One can define and use these variations, but please be sure that all the clip borders fit together without audible clips and artifacts. The audio transitions must be checked in your DAW, and all variations should work in a musical manner

Audio Files

To minimize the number of audio tracks, you have to downmix the audio tracks for the intensity layers. Each intensity relates to a submixed track that has been bounced from your DAW, so you need one audio file per intensity and the downmixed audio file should contain all audio that is non-modifiable.

Simple math: 3 intensities = 3 audio tracks!

What if you want to provide modifiable content?

The modifier content has to be bounced individually, where each audio file only consists of the exclusively modifiable audio content. This means that if you want to provide 10 intensity tracks and also provide one modifier that changes with each intensity, you need to bounce 20 tracks from your DAW. The tracks need to be sliced into clips, as described before. The "Laying out a Score in a DAW" chapter has more info on this process.

Slicing audio files

When you've finished the mixdown of all intensity and modifier tracks, you have to slice (cut) all audio files into clips that will later be assigned to parts in the Score Toolkit.

Here comes an an important rule: all intensity tracks must follow the same slice structure. The slice structure for modifier tracks can be different than the intensity structure, but in itself it must be coherent as well. So if you have a 4 bar intro part with 3 intensities and you want to define start and end clips for that part, use the same slice points for start clips for all intensities. We recommend that you well-align all your audio files in your favorite DAW and cut all tracks into parts like intro, main, end, etc. After that you have to cut the parts into smaller chunks like start, loop, and end clips.

Audio File Formats

All audio source files have to be 48 kHz, stereo WAV files. Bit depth can be 16, 24, or 32. Since Soundbooth uses a hard limiter with a genre-specific gain compensation (explained below), it is important to leave at least 4 dB headroom for the exported audio files.

Mixer Architecture

The mixer architecture is set up according to the tracks and buses a score requires. This means that we don't have one fixed mixer architecture.

What all scores have in common is that each track is routed into a mixer channel with aux sends. These aux sends represent the intensities.

We have added a hard limiter to the master bus to prevent clipping. It has two settings to compensate for genre-specific loudness differences. The composer cannot adjust these settings. The settings are:

Setting 1: additional gain of 3 dB, threshold at -1dBFS

Setting 2: additional gain of 2 dB, threshold at -1dBFS

Setting 2 is for the Classical, Wedding and Jazz genre, setting 1 is for all other genres.

To prevent unwanted dynamic changes by the hard limiter, make sure that levels for audio clips do not exceed -4 dB. Please keep in mind that real time audio mixing occurs while using Soundbooth Scores.

Understanding the Rearranger

This chapter explains how to structure a score in order to obtain predictable results when it is rearranged. We will analyze clips, parts, part variations, and song variations using illustrated examples.

Parts and Clips

The manner in which a part is resized over time depends on its clip segmentation, that is its START, LOOP, and END building blocks; since each part consists of an intensity track and at least one modifier track, it is possible to have a different clip segmentation for each of the tracks, such as START+LOOP+END for the intensity track, and only START+END for the modifier. A you will see, the part resize behavior depends on its SYMMETRY; if both the intensity and the modifier track have the same clip structure (e.g. START, LOOP, END), without any deviations in durations, only the LOOP clips are repeated when the part is stretched to a longer duration. If the clip structure differs between intensity and modifier tracks, leading to an ASYMMETRICAL segmentation, the entire part is looped. Another important thing that derives from this is RESIZABILITY; if a part is a symmetrical (same clip structure, corresponding clip types on each track have same duration) and it has a LOOP clip, only the LOOP clip is repeated. This part variation is therefore considered as RESIZABLE. If the structure is asymmetrical or it doesn't have a LOOP clip, the entire part variation is repeated. These cases are considered NON-RESIZABLE.

On the following pages, you'll learn how to control looping behaviour of a part by looking at different clip type combinations. For simplicity, our first examples are restricted to an intensity track and one modifier track. When using a second modifier track, the same rules apply.

The clip types are color-coded as follows:

Each example shows the intensity track at the top and the modifier track at the bottom.

See the next page for typical clip structure examples.

Clip Structures and their Resize Behavior:

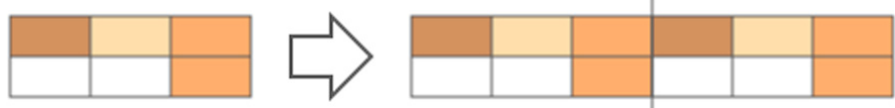1. Intensity: START + LOOP + END / Modifier: START + LOOP + END

- This example shows a symmetrical segmentation and will therefore repeat the LOOP clip.

2. Intensity: START + LOOP + END / Modifier: START

- This is an asymmetrical structure. The entire part is repeated with the START clip in the modifier track playing only at the beginning.

3. Intensity: START + LOOP + END / Modifier: END

- Same as above—this is an asymmetrical structure. The entire part is repeated with the END clip in the modifier track playing only at the end.

4. Intensity: START + LOOP + END / Modifier: LOOP

- While this is also an asymmetrical structure (the entire part is repeated), the LOOP part in the modifier track is treated in a special way: it fills the START and END gaps. This is an important attribute of the LOOP clip type, so you should keep it in mind when constructing parts. The same behavior occurs when the **intensity** track misses a START or END clip: a LOOP clip will fill the gaps.

Note: The gap is only filled if possible. If the LOOP clip has a duration of 4 bars, but the gap is only 2 bars, the gap will remain. This scenario is shown in example 8 on the next page.
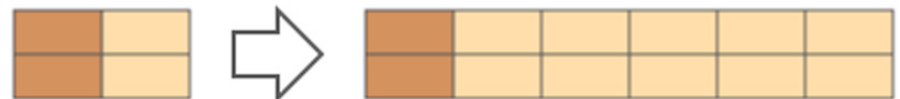
5. Intensity: START + LOOP + END / Modifier: START + LOOP

- As described above, the LOOP clip will fill the gap.

6. Intensity: START + LOOP / Modifier: START + LOOP

- Here we have a symmetrical structure, and therefore only the LOOP segments are repeated.

7. Intensity: START + LOOP (2bars) + END / Modifier: START + LOOP (6bars) + END

- While both tracks have the same clip types (START, LOOP, and END), they are considered asymmetrical, because the LOOP clip in the modifier track is longer than the one in the intensity track. Therefore, the entire part is repeated, but the LOOP clip in the intensity track is again filling the gaps. This is useful when creating part variations by only changing the length of the modifier clips (for example, an 8 bar, 12 bar and 16 bar version of a guitar solo); the LOOP clips in the intensity track will fill the gap.

8. Intensity: START + LOOP (2bars) + END / Modifier: LOOP (4bars)

- The LOOP clip cannot fill the 2 bar gap, therefore it is shifted to the beginning without repetition!

You can see how the part structure affects the looping behavior and the granularity of the smallest resize increment.

The next thing to look at are Part Variations...

Part Variations

Part variations allow you to specify alternative versions of a part for different lengths. This is done by using different clip structures or clip files of a different length for an otherwise equal clip structure. For example, you could use a START + LOOP + END structure for one part variation, and then START + END for a shorter duration, plus an END-only variation for the shortest duration If the user resizes the score, the part variation that best matches the new duration is taken. A list of part variations might have the following structure:
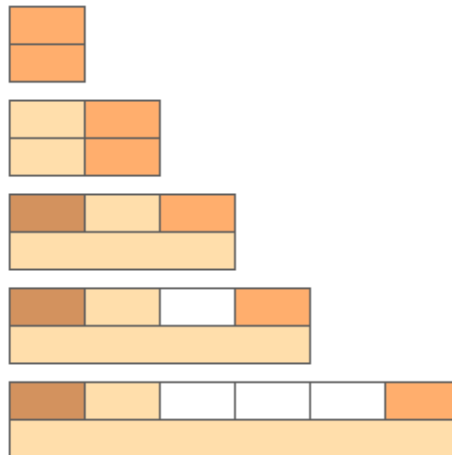
For each of the parts in a song variation any combination of a part variation with any other is built and compared to find the best fit for the desired overall length. In other words, the rearranger chooses one part variation out of the pool of variations a part provides.

The "Score Toolkit" chapter explains the parameters that are relevant to part variations, such as start time and duration.

The last element is song variations. We will see how these are chosen as the length of the score changes.

Song Variations

Song variations allow you to specify how the score's part structure changes over time. In general, the rearranger will prefer longer song variations over shorter ones to minimize the loop factor, meaning that a song variation consisting of Intro - Part1 - Part2 - End will be preferred over a song variation consisting of only Intro- Part1 - End, if both would match the same score duration.

A song variation consists of different parts, such as Intro, Part1, and End, but when specifying song variation you assign PART VARIATIONS, not PARTS. The reason is that the user selects a song variation to get a score for a specific duration, such as 30 seconds. The composer needs to specify which exact part variation to use to match that length when the user selects that song variation. For 30 seconds, this might comprise a 2 bar Intro variation, an 8 bar Part 1 variation and a 2 bar End variation. So by assigning part variations, you also specify the parts. If the user resizes the

score, the rearranger automatically uses the part variation that best fits the new length. For example, if you add a part variation that is a 4 bar version of Part1, this will be used when selecting the song variation. If the score is resized to a longer duration, the rearranger automatically uses another part variation (for example, an 8 bar version of Part1).

In general, it's a good practice to define a sufficient amount of song variations to determine how a score's part structure will change over time. A list of song variations might look like this (the part names reflect the names of the assigned part variations):

Song variation 1:

- Intro - short
- End - short

Song variation 2:

- Intro - short
- Part 1 - short
- End - short

Song variation 3:

- Intro - long
- Part 1 - long
- Part 2 -short
- End - short

etc.

The " Score Toolkit" chapter explains the parameters that are relevant to song variations, such as "Min./Max. Playback Count."

These are the rules that the rearranger follows to generate the best fit for a given score length. As you create more complex scores, you will see that it's sometimes a bit hard to predict the exact output, so play around with different structures to get a feel for the whole process.

The Score Toolkit

Choosing Window > Score Toolkit opens the Score Toolkit panel, which is organized in seven sections. (The user can step back and forth through the Toolkit—some menus may be unavailable if valid data is missing).

Section 1 (Score Settings):
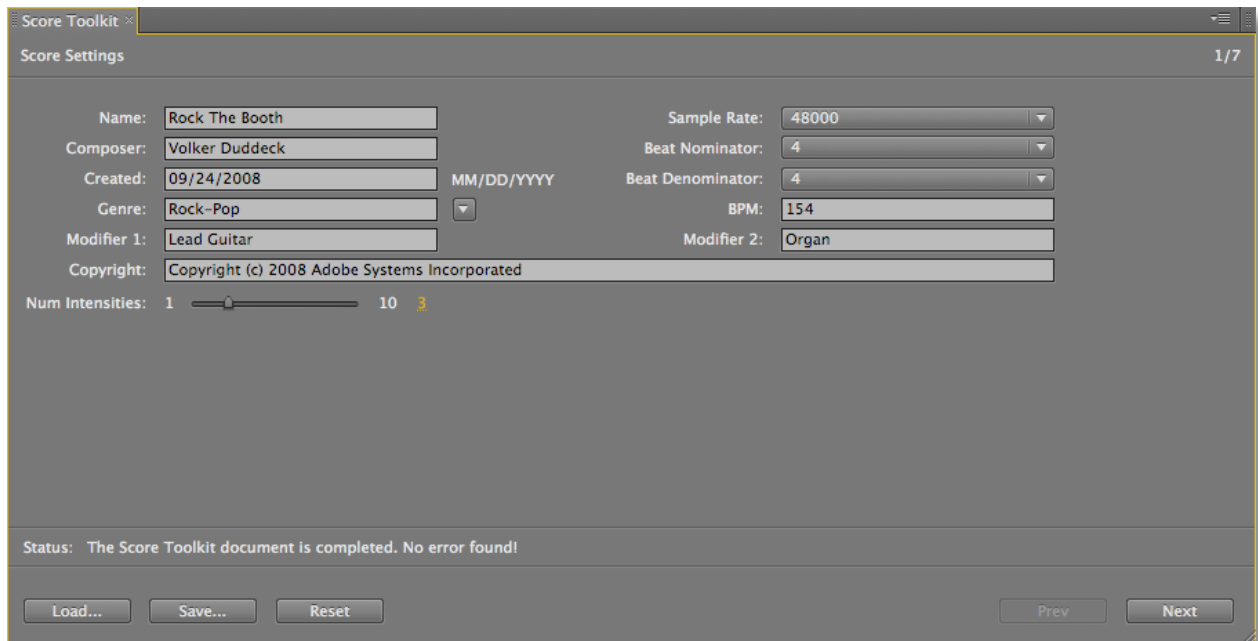
This section lets you specify general attributes of the score. Here's a list of the parameters and their meanings:

Name

- The score name, as it will be displayed in the Metadata panel of Adobe Bridge (IPTC Core >Title). Please note that the score clip's Property panel will display the file name, not the name that you specify here.

Composer

- Will be displayed in the Metadata panel of Adobe Bridge (Audio >Composer)

Created

- Will be displayed in the Metadata panel of Adobe Bridge (File Properties > Date Created). The required format is mm/dd/yyyy.

Copyright

- Will be displayed in the Metadata panel of Adobe Bridge (IPTC Core > Copyright Notice).

Genre

- Will be displayed in the Metadata panel of Adobe Bridge (Audio >Genre). You can choose from a list of common genres or enter your own genre name. Please note that characters which are used by the OS to specify file paths, such as "\", cannot be entered here.

Sample Rate

- The sample rate has to be 48kHz for all audio files. This value is displayed in Adobe Bridge as well (Audio >Sample Rate).

Beat Nominator, Beat Denominator, BPM

- Soundbooth uses these attributes, as well as the sample rate, to align the score playback to bars and beats correctly (if you experience strange playback issues, make sure that these attributes are set up correctly). BMP (beats per minute) is also displayed in Adobe Bridge (Audio >Tempo). Please note that meter changes aren't supported, therefore a score needs to follow one meter, such as 4/4. The BPM value must be an integer; fractional values are not supported. Example: "130" is supported, but "130.2" is not supported.

Modifier 1, Modifier 2

- These specify the names of musical elements whose level can be adjusted separately from the rest of the score. They show up in the Properties panel for the score clip. Typical names would be "Melody," "Guitar," "Synthesizer," "Voice," etc.

Num. Intensities

- Specifying the number of intensity levels here is important for subsequent steps. The highest possible value is "10".

Load, Save, and Reset buttons:

- Load allows you to open an existing SMST file to view or edit it. The Save button saves the file, and Reset clears all parameter values (in all sections of the Toolkit).

Section 2 (Clip Settings):
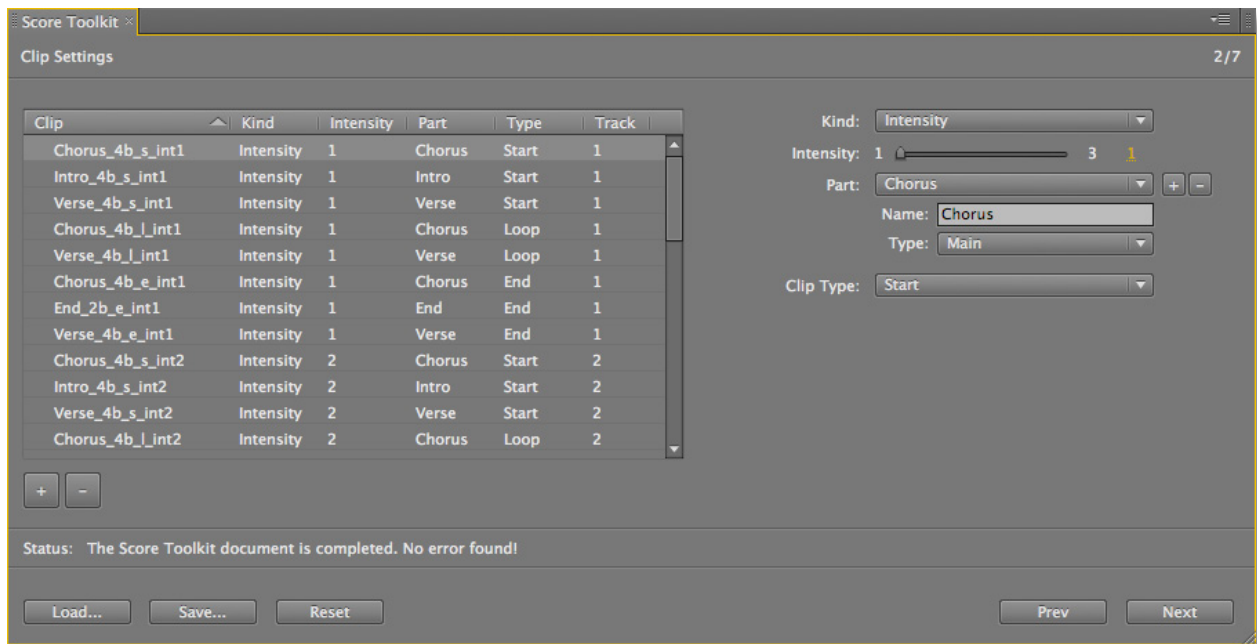
Import all your audio clips and set their properties in this panel. Supported audio formats are WAV and AIFF (with a sample rate of 48 kHz). Furthermore, new parts are created here too.

When specifying clip properties, it is important to keep in mind that these should be unique, which means that for a given combination of modifier type, part, and intensity (range), there can only be one clip. Make sure that there aren't multiple clips assigned to the same part and intensity, for example. The list at the left gives you an overview about each clip's properties. When creating a new score, the Score Toolkit creates a default part and assignd all imported clips to it; make sure you update the part assignments once you create additional parts.

Import audio files:

- Use the "+" button to import audio files into the Score Toolkit. You can remove them with the "−" button, but then make sure that they aren't missing from any part variation (the Score Toolkit invokes a warning message in these cases).

Kind:

Specify whether you want a clip to be played as part of an "intensity" track or on a "modifier" track. The selection here determines which sliders will be displayed below:

- Modifier: If you want a clip to be played as part of a modifier, such as a "Lead Guitar," assign it here. The popup reflects the names you gave them in the first section of the Score Toolkit.

- Intensity: This slider goes from 1 up to the number that you defined under Num. Intensities in the first Score Toolkit panel. Choose the intensity at which the clip should be played.

Intensity Range Min./Max (with Kind set to any modifier):

- A modifier can span an intensity range; if you have 5 intensities, but you want the same lead guitar on modifier 1 to play throughout all intensities, specify 1 and 5 as min. and max. values.

Part Creation and Assignment:

- Create or remove parts with the "+" and "−" buttons and assign each a clip to a part here.

Type:

- The Properties panel for the score clip allows users to specify whether the Intro, Outro, or both should be included in the score. (The default setting is Intro And Outro). The Type menu selection determines if a part should be affected by the Intro/Outro option chosen in Soundbooth. The default selection, Main, prevents a part from being affected by the Intro/Outro option.

Clip Type:

- As explained before, each clip can either be a start, loop, or end segment. Loop segments act as stretchable elements; they are repeated when increasing a part's length by resizing the score clip.

Section 3 (Part Variation Editor):
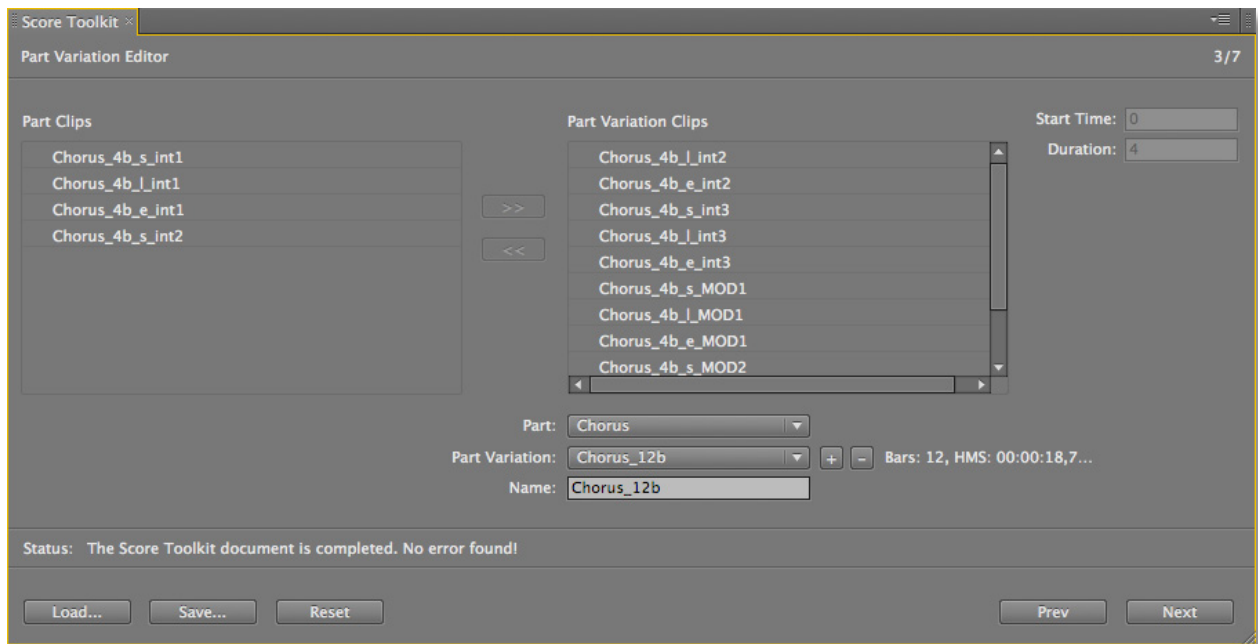
Here you assign audio clips to part variations. The process is as follows:

1. Select a part from the Part pop-up menu.

- You will notice that the Part Clips list reflects the selected part; it only shows those clips that belong to a part.

2. Go to the Part Variation area below the Part pop-up, press the "+" button, and name the new part variation with the corresponding text field. The part variation is associated with the part that you selected before.

3. Select the clips that you want to use for this part variation in the Imported Clips list, and press the ">>" button.

- The clips will now show up in the Part Variation Clips list, and they will be removed from the Part Clips list, so you'll know which clips are already in use.

4. Select a clip in the Part Variation Clips list and specify its Start Time and Duration attributes.

- Start Time lets you specify an offset for a clip's start time (in bars). A value of 1 will play the clip 1 bar after the part has started, for example. Negative offsets are not supported. By default, a clip has a start time offset of zero, since this is will be the desired behavior in most cases.

- Duration specifies the length of a clip in bars. In most cases you will enter the actual audio clip length, such as 4 bars, but it's also possible to use a shorter value if you want only the first 2 bars of a 4-bar clip to be played.

Section 4 (Song Variation Editor):
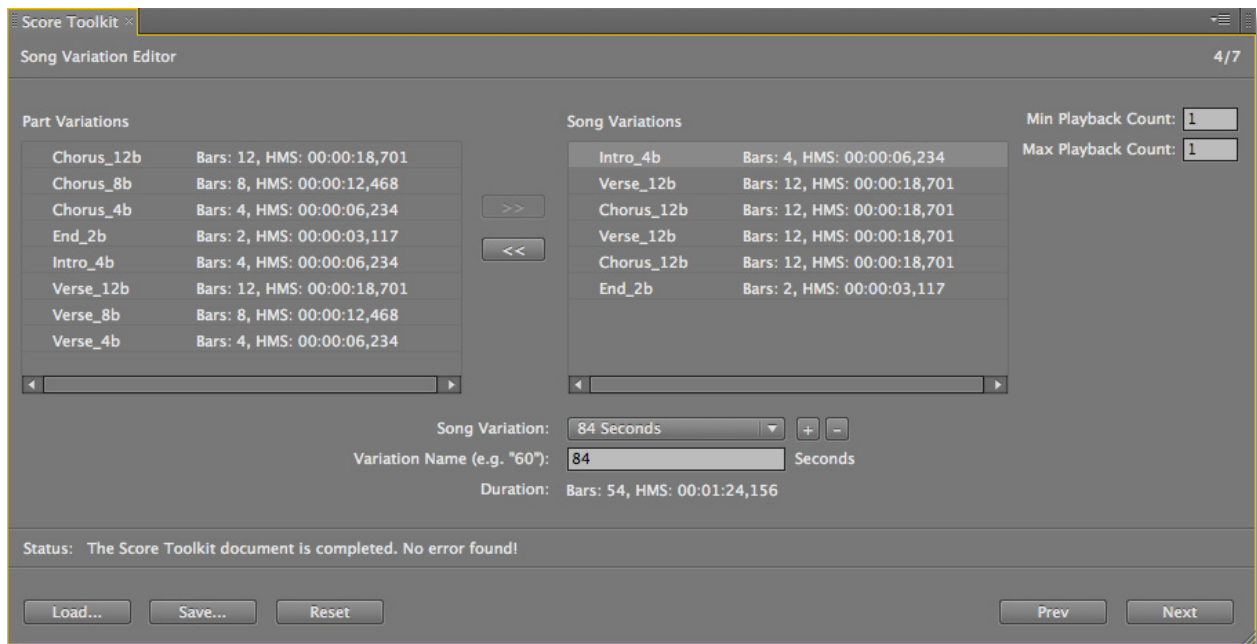
After having specified all the part variations, you assign them to the song variations that you create in this section. This is done as follows:

1. Click "+" to create a new song variation, and name it with the corresponding textfield.

- We recommend you use a number as the name, such as 30, that reflects the default (unresized) length of the song variation. Soundbooth will add the unit "Seconds" automatically when populating the corresponding pop-up control in the Properties panel for the score clip. (Localized versions will use the translation for "Seconds.")

2. Select a part variation in the list at the left, and press the ">>" button to add it to the song variation

- A song variation consists of different parts, such as Intro, Part1, and End, but when you specify song variation, you assign *part variations*, not *parts*. The reason is that the user selects a song variation to create a score for a specific duration, such as 30 seconds. The composer needs to specify which exact part variation to use to match that length. For 30 seconds, this might comprise a 2-bar Intro variation, an 8-bar Part 1 variation and a 2-bar End variation. So by assigning part variations, you also specify the parts. If the user resizes the score, the rearranger automatically uses the part variation that best fits the new length. For example, if you add a part variation that is a 4-bar version of Part1, this will be used when selecting the song variation. If the score clip is resized to a longer duration, the rearranger automatically uses another part variation (for example, an 8 bar version of Part1).

3. Add other parts by assigning part variations

- This will define the part structure for the current song variation.

4. Select each part in the list at the right (the Score Toolkit indicates the part variation, not the part), and specify Min. Playback Count and Max. Playback Count.

- These attributes allow you to specify a relation between different parts

by defining the minimum and maximum number of times a part is played when resizing the score clip. For example, a Min. Playback Count of 2 in conjunction with a Max. Playback Count of 4 means that it will be looped at least 2 times, but not more than 4 times. If you want it to loop infinitely, type "-1". Please note that the way a part is looped is determined by whether or not it contains loop clips in its internal structure.

Section 5 (Preset Settings):

Score Toolkit ✕		
Preset Settings		5/7

Preset: HIGH ▼   Intensity: 1 ══════════════○ 3   3

HIGH   Modifier 1 Gain: 0 ═════════○═══ 1   0,8

[+] [−]   Modifier 2 Gain: 0 ══════════════○ 1   1,0

Status: The Score Toolkit document is completed. No error found!

[Load...] [Save...] [Reset]   [Prev] [Next]
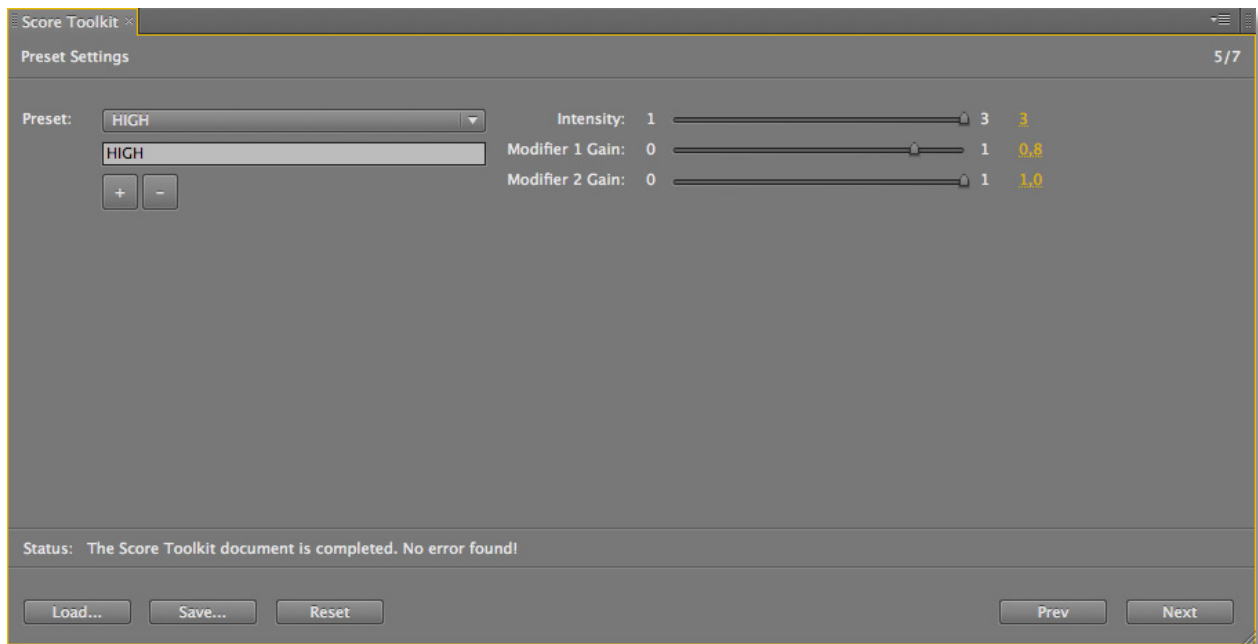
A preset consists of an intensity level, which is maintained throughout the score, and gain factors for each modifier. For example, a factor of 0.7 will set the modifier's level to 70% (the slider in the Properties panel will reflect this). These presets allow for quick adjustment of a score clip in "Basic" mode; if these parameters need to change over time, the user has to create keyframes in Keyframing mode. Most of the scores that are delivered with Soundbooth have between 3 and 5 presets, but there's no limitation.

Adobe

Section 6 (Create WAVE Preview File):
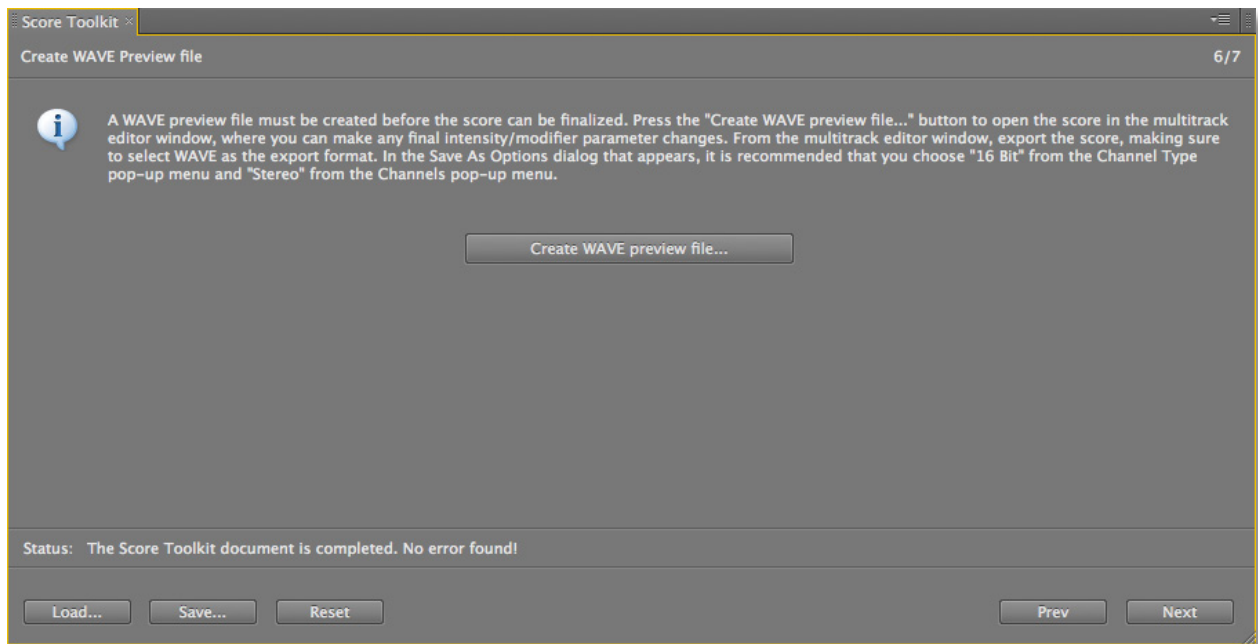
Here you'll specify a score's preview file. This file is used as the basis for the final SBST file and is also used for previewing a score in Adobe Bridge and the Scores panel in Soundbooth.

1. Click Create WAVE Preview File.

- This will create and open a temporary multitrack document with the score you're currently working on in Soundbooth.

2. In Soundbooth, adjust the score to your needs.

- Select a song variation, resize it if you want (a typical preview file duration would be around 30 seconds), specify an intensity, create some keyframes, etc.

3. In Soundbooth, choose File > Export > Multitrack Mixdown.

- Export the score as a WAV file (16 bit, stereo).

Section 7 (Create Soundbooth Score Package):
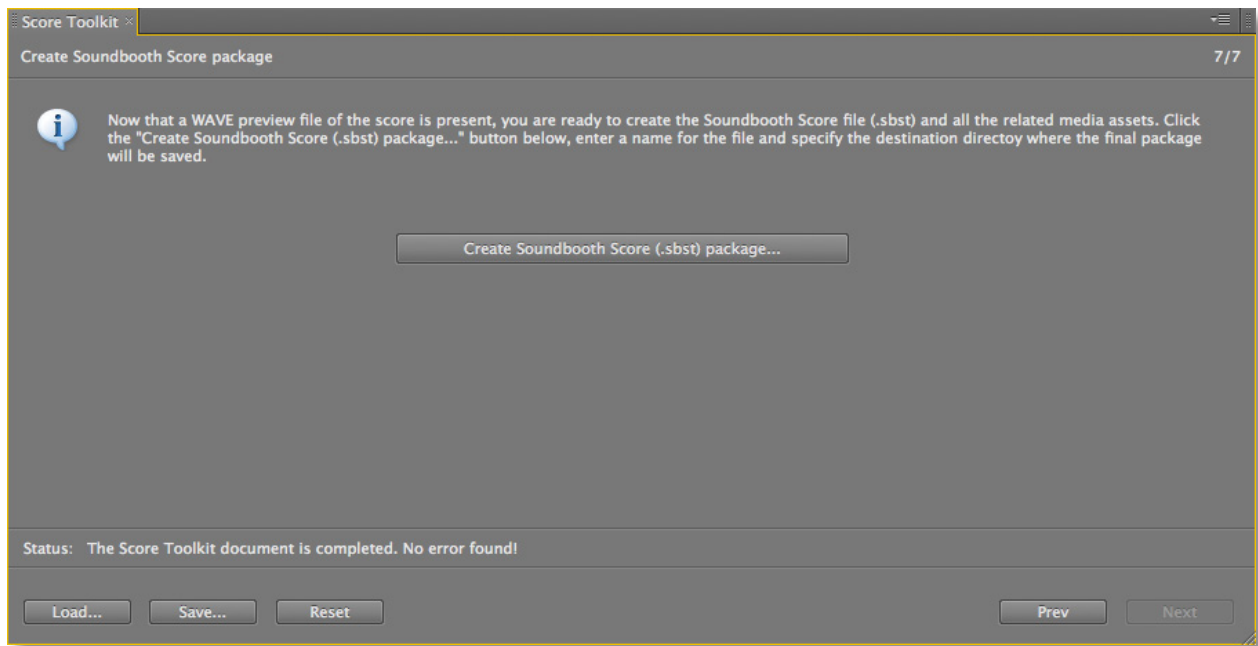
In this section you will create the final SBST file. The preview WAV file will be included and all score-related data will be added to it. The SBST file does *not* include the audio source files, but instead references them.

1. Click Create Soundbooth Score (.sbst) Package.

- Select the WAV preview file, and then choose the folder where the final package will be saved to. The score parameter data will be added to the WAV file, and all the referenced audio clips will be copied to an "assets" folder for final delivery.

Laying out a Score in a DAW

Because every composer has a unique way of creating music, there's not one correct one method of producing a score in a DAW, but there are certain standard steps:

1. Create the basic structure (for example, Intro, A, B, End).

- This structure will help you record the key elements of your score.

2. Define possible start, loop and end segments for each part.

- While recording, it makes sense to think about the later segmentation into start, loop, and end clips. Avoid phrases that overlap clip boundaries, for example.

3. Record segments for additional lengths (record over aliases of existing backing tracks)

- A good strategy is to record longer segments and then use the Toolkit's "Duration" attribute to shorten them, so you don't have to record redundant audio files in cases where only a little portion of a part differs.

- In many cases, the material for longer part variations comprises melodic elements, such as a 4 bar, 8 bar, and 16 bar guitar solo. The backing tracks will use the same (shorter) clips that are looping underneath the longer melody.

4. Play around with different track combinations to map out the different intensity levels

5. Bounce audio material to individual intensity and modifier tracks and slice them in a waveform editor. Or, bounce to individual intensity and modifier clips directly from your DAW.

6. Add fade-outs to End clips to avoid obvious cut-offs when played in Soundbooth

Some general recommendations:

- Make sure that modifier content exists throughout all intensities (you can use intensity ranges to minimize the production effort)

- Avoid longer pauses of modifier content (for example, melody). Otherwise, nothing happens when the user adjusts the modifier.

Appendix: A Sample Score

This documentation comes with a sample score ("Rock The Booth") that contains three intensity levels and two modifiers. Do the following to examine its structure:

1. Open Adobe Soundbooth CS4

2. Choose Window > Score Toolkit.

3. In the Score Toolkit panel, click Load.

4. Choose "Rock The Booth.smst" in the invoked file dialog: all clips, parts, part variations and song variations are loaded, so you can examine the score's structure.

5. Proceed to the "Create WAVE preview file" panel, and press the corresponding button. If you're prompted to specify the source media folder, select the folder that contains the audio source files. The score then opens in Soundbooth's multitrack editor. Adjust the score clip to your needs by sizing it to the desired preview length, adding keyframes, etc.

6. Choose File > Export > Multitrack Mixdown.

7. Save the audio file as WAVE, 16-bit, 44.1 kHz.

8. In the Toolkit, proceed to the "Create Soundbooth Score (.sbst) package" panel.

9. Select the audio file you exported in step 6.

10. Choose a destination directory for the final score package.

After completing this step, you're done: the Toolkit has created the SBST file along with an "assets" folder that contains the audio source files (copied from the original "source media folder" location).