

# **BEATCLEAVER**

**CUT UP BEATS BEYOND RECOGNITION**

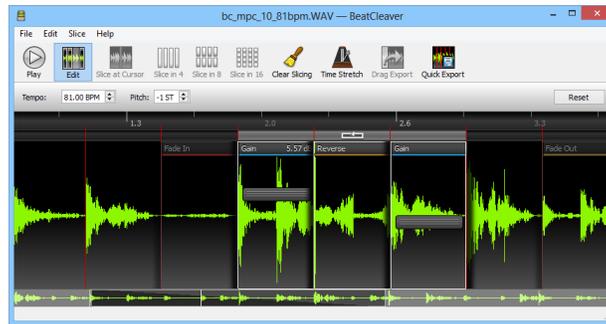
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# Part I

## Introduction



BeatCleaver is a software tool for editing and splitting audio files and samples. It can be used for extracting individual drum samples from a complex beat, to speed up or slow down audio, or to simply further segment an existing sample for use in a sampler or digital audio workstation. BeatCleaver is available for Windows and Mac OS X.

**Example Uses** BeatCleaver can be used in a variety of ways, as part of a music production workflow:

- Sampling melodies and beats from existing recordings and music.
- Trimming existing recordings.
- Splitting drum loops up into individual drum hits and rearranging them.
- Slicing multi-track renders of songs into 4 bar segments, to help form part of a live performance.
- Slicing loops for sequencing or mapping to the pads on a hardware sampler, like an MPC.

BeatCleaver is unique because of the speed with which you can create slices and adjust them. From the fluid zoom to the streaming loading, many small features add up to make it a convenient and easy tool to use frequently.

**Feedback** This product was created based on ideas and feedback from many musicians like yourself. If you have ideas for new features you'd like to see in BeatCleaver, please share your thoughts with us at [support@oscillicious.com](mailto:support@oscillicious.com). We'd love to hear from you.

## Part II

# Operation

### 1 Loading a Sample

To begin slicing an audio file, you must first load one into BeatClever. Click the FILE menu and select OPEN AUDIO to load a file into BeatClever. Alternatively, simply drag an audio file from a folder on your computer and drop it directly onto the BeatClever window to load a file. A list of different audio filetypes that can be sliced with BeatClever is shown in Table 1.

	Windows XP	Windows Vista	Windows 7, 8, and Newer	Mac OS X
WAV	✓	✓	✓	✓
AIFF	✓	✓	✓	✓
MP3			✓	✓
WMA			✓	
M4A			✓	✓
FLAC	✓	✓	✓	✓

Table 1: Audio file formats that can be opened with BeatClever.

### 2 Waveform Navigation and Zoom

The waveform display in BeatClever provides a visualization of the audio in a file at various detail levels.

**Zoom** Zooming in and out can be accomplished by using the scroll wheel on your mouse, or by using two or three finger scrolling on a MacBook. Alternatively, the zoombar with mini-waveform at the bottom can be grabbed with your left mouse button and dragged up and down to control the zoom. Dragging the zoombar left and right will scroll through time on the waveform. (See Figure 1 on page 5).

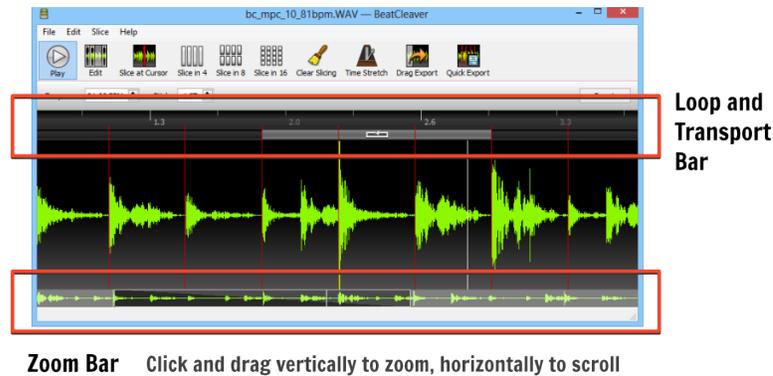


Figure 1: Overview of Zoom Bar and Loop/Transport Bars.

**Technical Note** The BeatCleaver waveform visualizes stereo audio in an *interleaved* fashion, drawing audio samples from the left and right channels alternating in sequence. The advantage of this approach for slicing is that it is easier to see zero crossings that occur close together in both audio channels. Slicing near zero crossings is recommended to reduce the chance of a pop or click in the audio when playing back an exported slice.

### 3 Slicing

**Manual Slicing** To insert a *slice point* in BeatCleaver, right-click on the waveform and select **SLICE HERE**. Slice points can be adjusted by clicking and dragging them left or right.

**Quick Slicing Buttons** The toolbar at the top of the BeatCleaver interface provides several quick slicing buttons. When no loop is set, these slice buttons will chop the current file into 4, 8, or 16 slices, placing slice points that can be manually adjusted later. If a loop is set, the slice buttons will chop the current loop into the chosen number of slices. Similarly, the **CLEAR SLICING** button will clear slice points in the current loop, or in the whole file if no loop is set. To eliminate audio clicks when slicing, a small amount of manual adjustment may be needed (see Section 4).

**Chopping on-the-Fly** Placing slice points during playback, at the playback cursor position, is also possible. During playback, click the **SLICE AT CURSOR** button on the toolbar, or use the keyboard shortcut key "S" to insert a slice point.

## 4 Slicing Better

**Eliminating Pops and Clicks** When previewing a slice, sometimes a pop or click can be heard at the start or end of it. This occurs when there is an instantaneous “jump” in the audio signal. If audio is sliced when the amplitude of the signal is far from zero, then this will cause a pop when played back through speakers. To eliminate popping, manually adjust the start and end of the slice so that they align with *zero crossings*. A zero crossing is a place where the audio signal crosses over the time axis, which can be seen in BeatCleaver as a grey horizontal line across the middle of the waveform when zoomed in. The positions where the green waveform crosses or lingers around that horizontal line are the best places to slice, and will eliminate popping most of the time.

**Sample Accuracy and Real-Time Time Stretching** By default, slicing in BeatCleaver is sample accurate, meaning that the exported slices will be chopped exactly as they appear in BeatCleaver. However, when the tempo or pitch is changed, the time stretching engine inside BeatCleaver is activated, and this fundamentally changes the waveform of the audio. Because time stretching essentially resynthesizes the audio, the waveform being sliced will no longer exactly correspond with the audio being heard. However, most of the time slices will still be close enough for there to not be an audible difference.

When sample accuracy and time-stretching are both required, this can be still be achieved by first performing offline timestretching (open the TIME STRETCHING window, adjust the tempo, and then save it to disk) before slicing. Though this method requires an extra step, BeatCleaver allows you to make the choice of convenience vs. accuracy whenever either is more desirable.

To disable the timestretching engine (and restore sample accurate slicing), click the RESET button in the toolbar on the main window.

## 5 Looping

**Toggling a Loop** To help you find good samples and loops to cut, any slice can be played in a loop by left-clicking the loop bar above a slice. (See Figure 1 on page 5.)

**Adjusting a Loop** Loops automatically adjust to match the length of the current slice they are placed on. Dragging the slice points at either end of the loop will automatically adjust the loop length as well. A loop can be moved by left-clicking and dragging it in the loop bar. Additionally, a loop can be expanded to span several slices by holding the SHIFT key while left-clicking the loop bar above another slice.

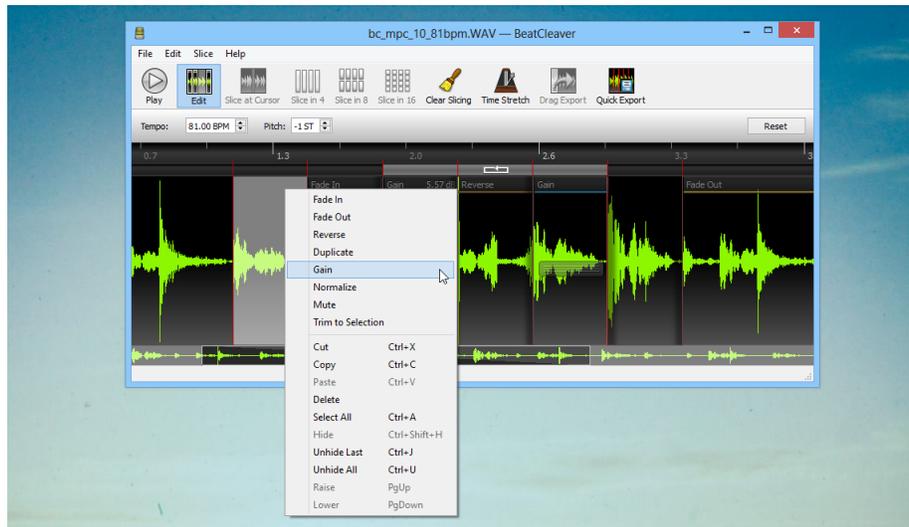


Figure 2: When EDIT is toggled, effects and edits may be applied to the waveform such as the Reverse and Gain edits seen here. Highlight a region and right-click to apply an effect or edit.

## 6 Editing

BeatClever offers basic audio editing functionality by toggling by the EDIT button in the main toolbar. When *Edit Mode* is active, portions of the waveform can be selected and edited. Additionally, slice points will act as a grid to which selections can be snapped. This makes it easier to edit individual slices.

**Applying Edits or Effects** To edit a region of audio, begin by left-clicking on the waveform and dragging the cursor across it until the desired region is highlighted. If needed, this selection can be resized by clicking and dragging either edge of it. Next, choose the edit or effect you wish to apply by right-clicking on the selected region. A menu will appear, displaying a list of possible effects and edits that can be made. Select any effect from the menu to apply it instantly. (Alternatively, the list of edits is accessible from the EDIT menu at the top of the screen, under EFFECTS.)

**Available Edits and Effects** As of BeatClever 1.4, the following types of edits and effects can be applied to any region of audio:

- Fade In (Linear)

- Fade Out (Linear)
- Reverse
- Duplicate
- Gain (Amplify)
- Normalize (-3 dB)
- Mute
- Trim to Selection

**Editing with the RapidEdit™ Engine** A unique feature of BeatCleaver is that after applying an edit like “Fade In” to an audio file, each edit can be adjusted and moved around on-the-fly. There is no need to undo the edit if you wish to adjust it, and other edits can be additionally layered on top of it. This innovative approach to audio editing keeps the workflow moving forward, and provides more flexibility than found in other editors.

**Layering Edits and Effects** Edits and effects can be layered by dragging them around such that they overlap. The order that they are applied in is determined by the order in which they were added, however, an edit can be lowered or raised by using the PAGE UP and PAGE DOWN keys on the keyboard or by selecting RAISE or LOWER from the EDIT menu.

An example of where this matters is when creating a Duplicate edit that overlaps with a Gain edit. If the Gain is below the Duplicate, the duplicated audio will not have its volume affected by the gain, and this will be reflected in the waveform. If the Gain is moved above the Duplicate, then the waveform will show instantly that the duplicated audio is now having the gain applied to it.

**Hiding Edits and Effects** During heavy editing, the waveform may get filled with many edits, or edits that apply to very large sections of the waveform. (For example, it is common to apply Normalization to an entire audio file.) In this situation, it is advantageous to hide some edits in order to make further editing easier. To hide an edit, right-click on it, and select HIDE. Edits may be unhidden later by selecting UNHIDE LAST or UNHIDE ALL.

## 7 Saving

**Saving Slices** Slices can be saved individually by right-clicking them and selecting **SAVE SLICE**. All slices can be saved at once in a folder by selecting **SAVE SLICES** from the **FILE** menu.

**Save as MIDI** Slice points can be saved as a MIDI file (a feature which is sometimes called "Slice to MIDI"), which can be useful for reconstructing a drum break or rhythm in a DAW or with a sampler. For each slice, a new note will be placed in the resulting MIDI file, with each note increasingly chromatically. When combined with the **SAVE SLICES** item in the menu (which saves each slice as a **WAVE**), the slices can be loaded into a third party sampler bank and triggered with the MIDI file to reproduce the original break.

**SAVE AS MIDI** can also be used for "groove extraction". If you have an song or beat which contains a funky rhythm or groove that you would like to reconstruct, simply load it into BeatCleaver, place slice points on the beats, and save it as a MIDI file. If you import the resulting MIDI file into your favorite DAW, and you can then use it to trigger different samples, synths, or drum sounds while maintaining the groove of the original song or beat.

**Quick Export** The **QUICK EXPORT** button immediately saves any slices directly to your hard disk. All slices are exported a 44.1 kHz, 16-bit stereo **WAVE** files, and can be found in the same folder as the original file. Exported slices will have a number prefixed to their filename. (eg. song\_1.wav, song\_2.wav)

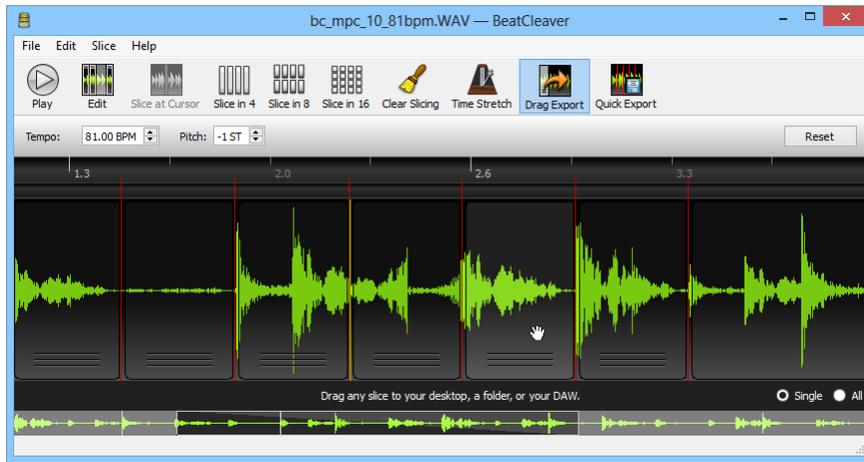


Figure 3: Drag Export mode allows any slice to be dragged out of BeatClever and into a folder, the desktop, or a DAW.

**Drag Export** Toggling the DRAG EXPORT button enables the dragging of slices directly out of BeatClever. Slices can be dragged and dropped into a folder, your desktop, or most DAWs. Dragged slices will be rendered and saved immediately in the user's *My Documents/BeatClever* folder (Windows) or *Documents/BeatClever* (Mac).

To drag all slices out of BeatClever at the same time, first click the ALL radio button in the bottom-right corner of the BeatClever window, after DRAG EXPORT is enabled. Then, left-clicking and dragging on the main waveform will grab all the slices at once. This is particularly useful when dragging slices to an external sampler.

## 8 Advanced Slicing

Additional slicing options are available by selecting ADVANCED SLICING from the SLICING menu. The Advanced Slicing window allows you to enter a tempo (BPM) and interval (in beats or bars), and slice a recording based on that. For example, BeatClever can slice a recording every 4 bars for you, if you know the tempo.

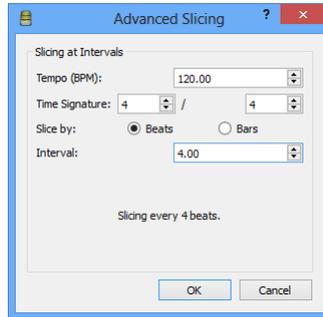


Figure 4: The Advanced Slicing window.

**Slicing Multi-Track Renders** The Advanced Slicing window is particularly useful in the following scenario. If you have produced a song in a digital audio workstation (DAW) and you wish to perform parts of it live or remix it on-the-fly, sometimes it is desirable to have the song exported into separate tracks for sequencing with a hardware sampler or looper. With BeatCleaver’s Advanced Slicing feature, you can split up multi-track renders by bars, giving you clean segments that can be played live as loops, forming a basis for the performance of the song.

## 9 Time Stretching and Pitch Adjustment

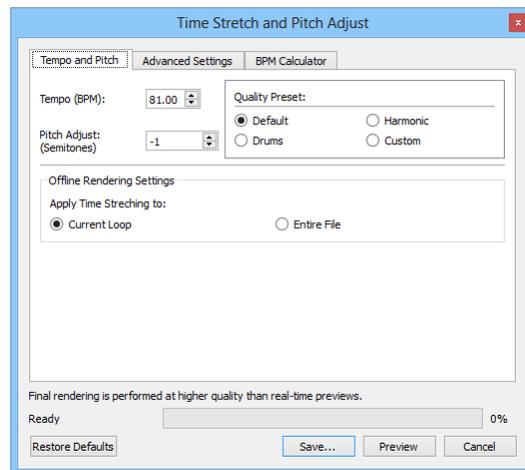


Figure 5: The Pitch Adjust and Time Stretch window allows the pitch and tempo of a sample to be changed independently.

**Overview** Time stretching is a technique that allows you to change the tempo of a sample without changing the pitch, or the vice versa. It is a common technique often used in hip hop sampling, where a sample is taken from a vinyl record and its tempo adjusted to fit into a new composition. In BeatCleaver, time stretching works by stretching a sample from some original tempo (BPM) to a new tempo, so the original tempo of the sample is a prerequisite. However, BeatCleaver can also calculate the original tempo of a sample if a loop is sliced to a given number of beats in length.

**Easy Method** The tempo and pitch of any loaded song can be adjusted directly from the toolbar on the main window, just above the main waveform. The tempo is in units of beats per minute (BPM), and the pitch is in semitones (ST).

**Offline Time Stretching (Highest Quality)** To time stretch a sample in BeatCleaver:

1. Begin by clicking TIME STRETCH on the main toolbar. The Time Stretching dialog will be shown.
2. (Optional) If the original tempo of the sample is unknown, go back to the main BeatCleaver window, and slice a segment that is exactly 8 beats long. Enable looping over this slice by clicking the transport bar above it. Lastly, go back to the Time Stretching window, select the BPM CALCULATOR tab, and click the CALCULATE BPM FROM LOOP button. BeatCleaver will calculate the tempo of the sample based on the length of the loop that was selected.
3. Now, under TEMPO AND PITCH, adjust the TEMPO to the desired tempo. A sample can optionally be transposed independently of the tempo using PITCH ADJUST.
4. Preview changes to the BPM in real-time by clicking the PREVIEW button or by toggling playback in the main BeatCleaver window. Keep in mind that final renders generally sound better than the preview.
5. Experiment with the provided QUALITY PRESETS and see which one sounds best with the given sample.
6. Click the RENDER button to finalize your changes and render a full, high-quality time stretched version of the sample.
7. Back in the main BeatCleaver interface now, make sure you save the time stretched sample by right-clicking on the main waveform and selecting, SAVE SLICE.

**Advanced Quality Options** The advanced time stretching engine in BeatClever provides a number of options for power users. A brief description of each option is provided below, but the best advice is to experiment and go with your ears. Different settings might sound better or worse depending on the sample being time stretched, and so experimentation is encouraged to achieve the best quality.

- **Transient Control** - Adjust the mechanism by which certain aspects of the time stretching engine are reset around transient points, to help add clarity to transient events like percussive hits.
- **Transient Detector** - Controls the type of transient detector used. **COMPOUND** produces good results for most samples.
- **Analysis Window Size** - Set the heuristic preference for the FFT processing window. **STANDARD** generally provides the best results but **SHORTER** can be better for audio with characteristics that change quickly like drums. **LONGER** usually results in a smoother, less crisp sound. This could sound better with smoother sounds like strings.
- **Preserve Spectral Envelope** - Controls whether or not the spectral envelope (formant shape) of a signal is preserved when pitch shifting.
- **Stereo Processing** - Controls how stereo channels are processed when time stretching. With **STANDARD**, each channel is processed separately but this can lead to an increase in the stereo width of the audio. **ENHANCED** tries to preserve the original stereo width of a sample at the expense of quality.

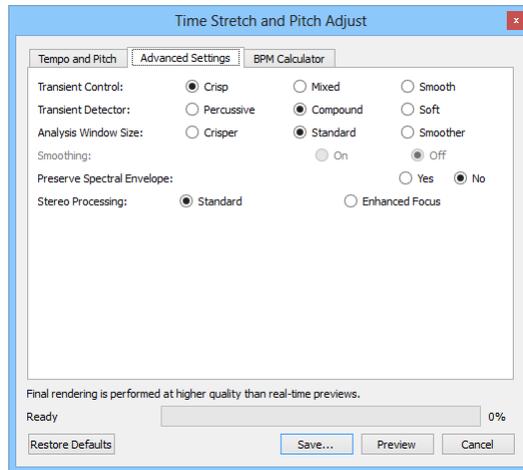


Figure 6: Advanced time stretching quality options may be adjusted to better suit the source material. Don't be afraid to experiment, and use your ears!

## Part III

# Support

For registration problems, lost registrations, or questions about BeatClever itself, please see the support information available at [www.oscillicious.com/support](http://www.oscillicious.com/support).

## 10 System Requirements

**Operating System** BeatClever 1.4 is compatible with Windows XP, Windows Vista, Windows 7, Windows 8, and newer Windows operating systems. BeatClever 1.3 is also compatible with Mac OS X 10.5 (Intel) and newer.

**Hardware System Requirements** BeatClever requires an Intel Core processor or greater, at least 1 GB of RAM, and 60 MB of free disk space.

## 11 Audio File Format Compatibility

**Audio Input File Formats** Some file formats may not be supported with certain operating systems. Please see Table 1 on page 4 for a list of supported audio file formats.

**Audio Output File Formats** By default, BeatCleaver saves all exported audio as stereo WAVE or AIFF files at the samplerate of the original file for the highest compatibility. These files are compatible with MPCs, Maschine, and all major digital audio workstations.

**Samplerates** In the preferences, BeatCleaver can be configured to export at a range of samplerates including 22500 Hz, 44100 Hz, 48000 Hz, 96000 Hz, and 192000 Hz, or to match the samplerate of the original audio file when exporting.

**Bit Depths** WAVE and AIFF files can be saved in BeatCleaver with a bit depth of 8, 16, 24, or 32 bits, and is configurable in the Preferences dialog.

**Compatibility with Akai MPC Samplers** Most Akai MPC samplers (including the MPC500, MPC2000, MPC2000XL, and MPC2500) do not support 24-bit or 32-bit WAVE samples. When saving slices for use on an MPC, please ensure the WAVE EXPORT BIT DEPTH is set to 16-bit in the BeatCleaver preferences. This is the default setting.

## Part IV

# Legal

**Copyright** BeatCleaver is Copyright © Oscillicious 2011 - 2013.

**Time Stretching Engine** BeatCleaver uses the Rubber Band Library by Breakfast Quay for time stretching.

**Audio Editing Engine** BeatCleaver uses the proprietary RapidEdit™ engine by Oscillicious for audio editing.

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