

SAMPLECRAZE

# DRUM BEAT CONSTRUCTION

THE DEFINITIVE GUIDE FOR BEAT MAKERS  
WRITTEN BY EDDIE BAZIL

## ***Drum Beat Construction: Demo Chapter***

This is an excerpt taken from Eddie Bazil's book, '**Drum Beat Construction**'. To download the complete book with all audio examples, please go to:

<http://www.mpc-samples.com/product.php/212/drum-beat-construction/>

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# Foreword

I decided to write this book in the form of a hands-on manual, rather than a book laden with theory and historical white papers. The goal is to share with you some of the processes and techniques used in our industry to create, shape, and manage drum beats.

This book will not teach you secret drumming techniques. It is about using existing principles and techniques to improve your beat construction processes. Equally important is the fact that we need to define what beat construction is. It is not the writing and producing of a song, to which the term 'beat production' is often applied. This distinction is important, because this book is about constructing drum beats, and processing all the elements within, and not about song production.

There are some musicians and producers who have natural rhythm and a detailed understanding of how a percussive instrument needs to be portrayed. They know how to lay down a beat without much trouble. However, if you are anything like me, and struggle to get a natural beat flowing, then this book should help you. My experiences with some very talented beat makers, and my sound design experiences, have helped me to amass a large database of processes and techniques that I would like to share with you.

Sharing this knowledge and the ensuing techniques is something about which I feel strongly. The journey I have taken, and am still taking, is one of exploring sound and its creative manipulation. Constant technological advances that allow us to explore even more intricate and detailed way of sculpting sound, so there is always more to learn and more to share.

The techniques in this book are perfectly legitimate and do not encroach on anyone's copyright. If this were not the case, then all software for profiling, slicing, and so on, would be illegal. The exercises and examples in this book are techniques and processes, nothing more. The magic comes from how you decide to use the information.

I sincerely hope you will enjoy this book as much as I have while writing it. It has been a journey for me as I have stumbled along and made some little discoveries along the way and, of course, lost some sleep in the process.

Eddie Bazil  
**Samplecraze**

# 012 Ripping Beats

This process can be done in two ways:

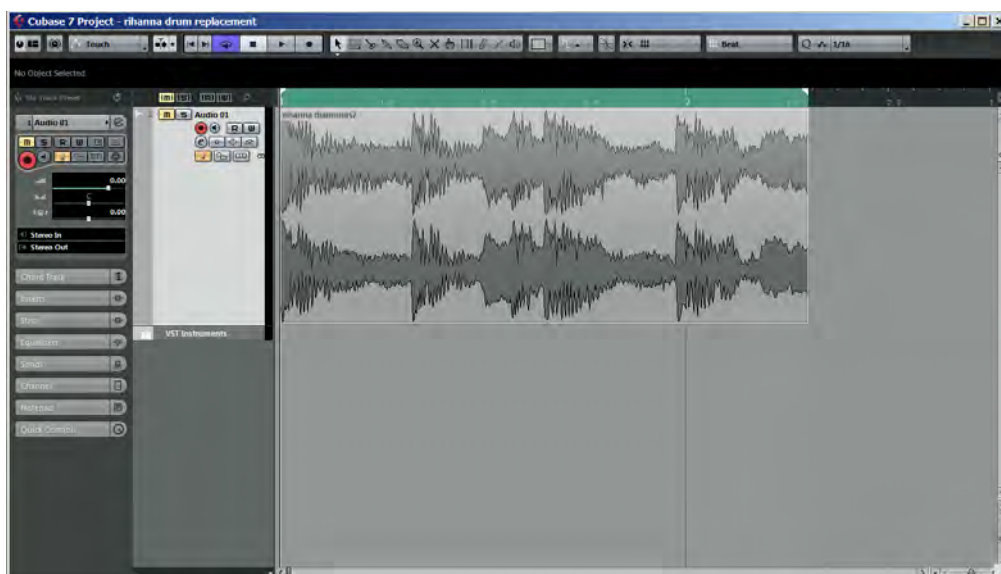
- Ripping timing information from an existing drum beat, and using the information as a MIDI quantize template to use on your own drum beats. This has already been introduced, but I will run through another example of a whole beat being used as a quantize template.
- Ripping a beat and replacing the drum elements with your own sounds, either via MIDI triggering or drum replacement processing.

The best approach is to run through an example and show you how easy the whole process is.

In Cubase, I create a blank template, and insert an audio track. Because I am going to use a commercial track, in this instance Rihanna's *Diamonds*, I need the track to be in stereo.

*Please* be aware that I am showing you these processes so that you can adopt them in your own music, and not to replace existing commercial tracks with ripped data. I treat these processes in exactly the same way as lifting EQ responses from commercial mixes or mastering templates taken from existing commercial releases—features prevalent in DAWs nowadays.

## ***Ripping beat elements***

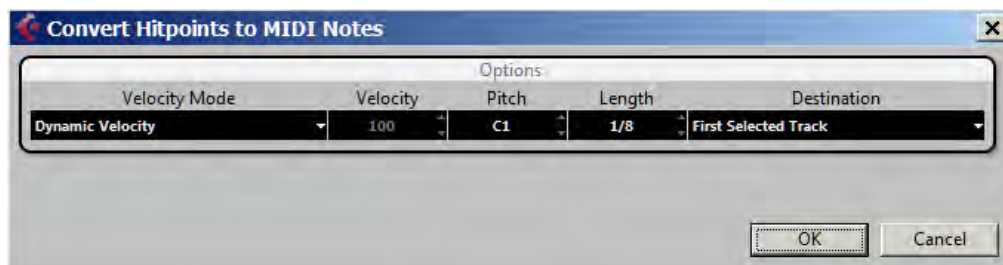


 rihanna beat

Cubase's Hitpoints feature has improved dramatically in recent versions, and this allows for really easy beat extraction.



The Hitpoints feature displays not only the Hitpoints and slices it has detected, but allows me to set a 'threshold' for the detection process. This helps in excluding those trigger values that are not required, enabling me to concentrate on the ones I need. If you look at the menu on the left of the editor window you will see the function we are going to use to extract the Hitpoints and convert them into midi information: 'Create MIDI Notes from Hitpoints'. When Create MIDI Notes is clicked, the following window appears:



The important detail here is whether you select a Fixed or Dynamic Velocity. I have chosen the latter, so I have the same velocity information as the 'kick' audio Hitpoints in the source track. In fact, this is not critical in the current example, because the kick sits on a 4/4 signature with more or less a fixed velocity. But nonetheless, it can be crucial when converting more detailed audio information, hi hat patterns, into MIDI data.

The best thing about using drum replacement tools is that you can save the converted templates for future use but, more importantly, the fact that drum sounds can be substituted easily means that we can experiment with any sound in any order. I say 'order' because we can alter the Hitpoints locations and move them about whilst keeping the timing information. This is a great feature and we can get very creative with more complex patterns.

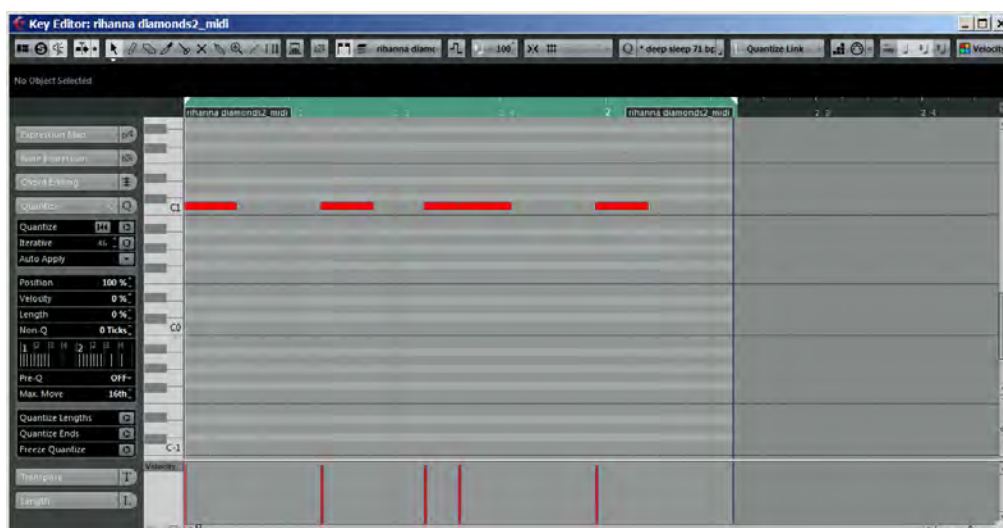




## 🔊 rihanna beat midi extracted

The image displays the MIDI note conversions on a separate MIDI track (another useful Cubase feature), and I have inserted one of my own DruMM modules and triggered the kick using the extracted MIDI data. The original Rihanna *Diamonds* kick sound is a pretty standard kick that has been layered with a tone to pick it up when the song starts to build.

But the beauty of ripping beats is when you substitute your own sounds in place of the ripped elements. This makes for a creative result as opposed to simple emulation. So long as the timing and velocity information is intact when the data is ripped, you can easily substitute samples. However, you should always play the ripped MIDI data and new sound substitutions along with the source material. This allows you to line up any timing anomalies or velocity changes (which are sample dependent, of course). You can then confidently swap your own sounds into the newly defined template.



The MIDI information for the extracted Rihanna beat displays the ‘ripped’ velocity values along with the timing information. We can alter these in any way we want. We can move the midi notes to create new sequences or we can alter velocities, and so on. Once converted to MIDI, any audio slice can be treated in exactly the same way as if we started with only MIDI information.

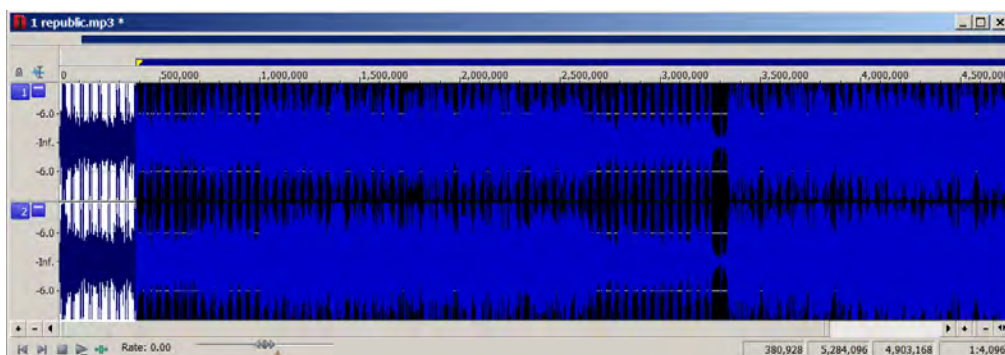
The Rihanna example is actually a very simple one, because the kicks are pretty well defined in terms of position and velocity. Let’s work with a more complex drum beat that can show the limitations of Hitpoints detection, be it in your DAW or dedicated software like Propellerheads Recycle.

As you know, Hitpoints are detected via peak values, but although the threshold feature can save acres of work it is not the solution when it comes to drum elements whose peak values sit in-between the lower and upper limits of the threshold.

I find that automatic Slices Detection (in Recycle or your DAW) or Hitpoints tool (in Cubase), serves as a great starting point. Manual editing of the slices ensures accuracy in where the eventual MIDI notes will lie. Because of the nature of the dynamics of a sound, a peak value can be located after the sample has been triggered: in other words, if a kick drum has a slow and quiet attack value and rises to a higher peak value when the sustain element comes in, then a slice will be created at the highest peak value and this means that the timing or position of the new slice is not at the exact location as the triggered kick drum. Let me run through an example of what I mean using Timbaland/One Republic’s track *Apologize*.

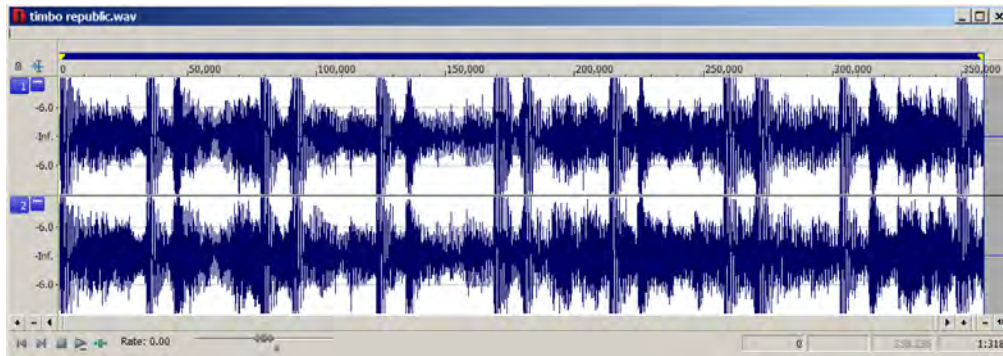
The trick with all ripping tasks is to get a perfect loop of the source track, usually two or four bars in length (you can use a different length if it better suits your material). I will cover topping and tailing in a later chapter but, for the sake of fluency, I will run through it here to complete the whole ripping to MIDI process.

The first process is to truncate the song into a manageable size and then to truncate in finer detail to a loop:



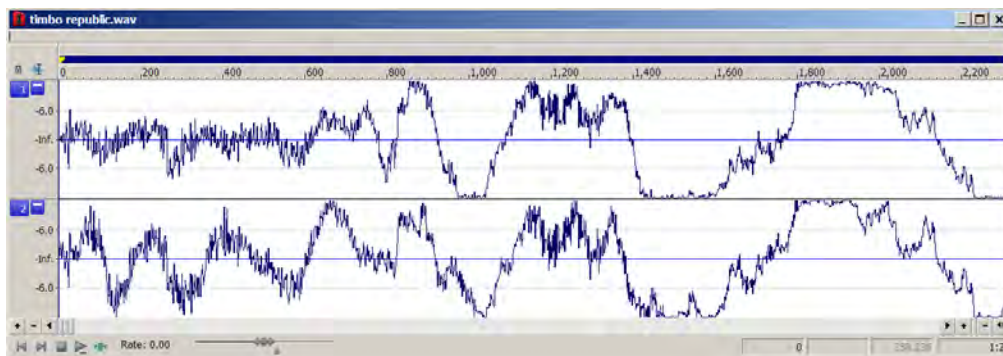
Once truncated I am left with the following:



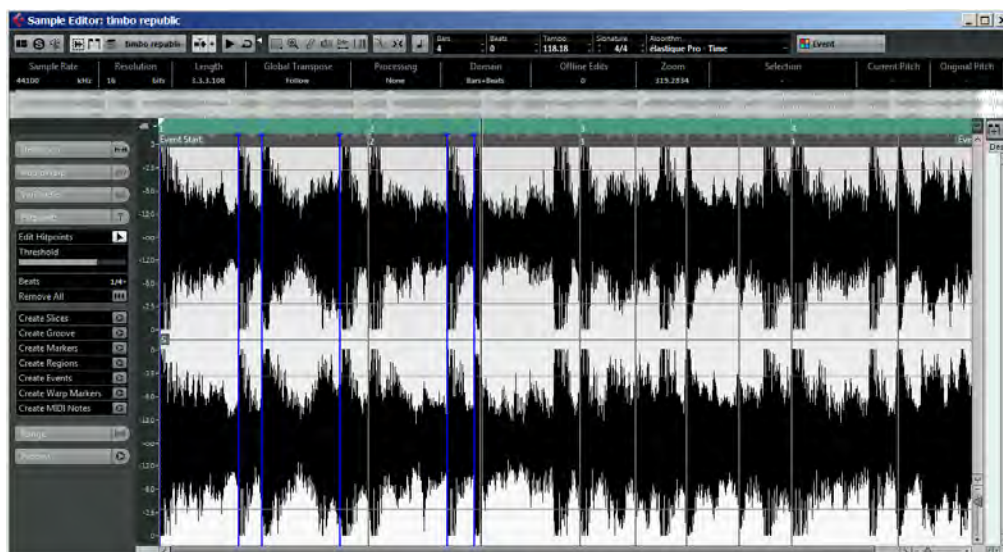


## timbo republic

By truncating the start and end times, I form a seamless and detailed loop. The image below shows that I have truncated to such detail that all dead space has been removed. This allows me far more accuracy when identifying the BPM of the loop.



The next step, as previously, is to import the audio segment into Cubase, and enter the audio editor to assign Hitpoints.

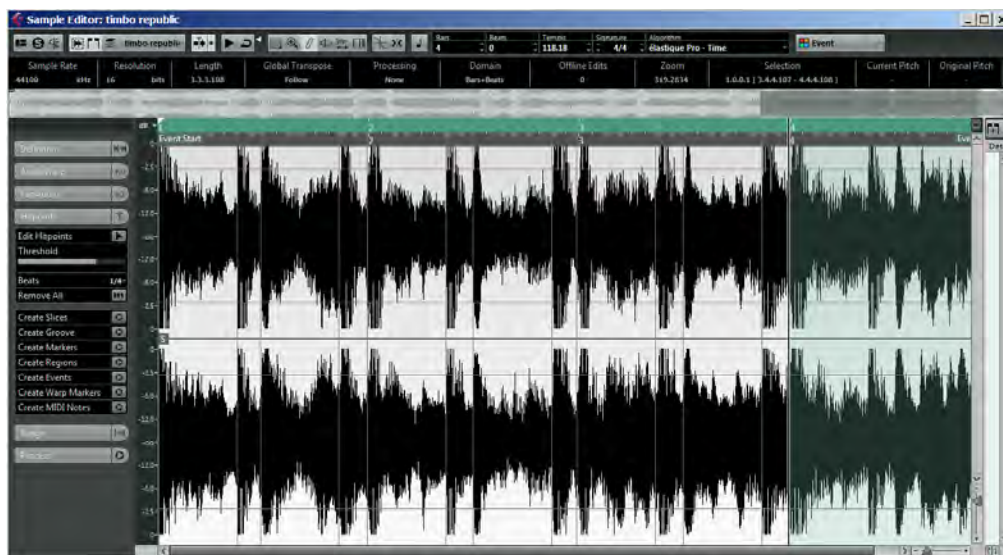


The BPM of the loop is 118.18 (as seen on the top of the menu grid). This gives us the BPM for our song.

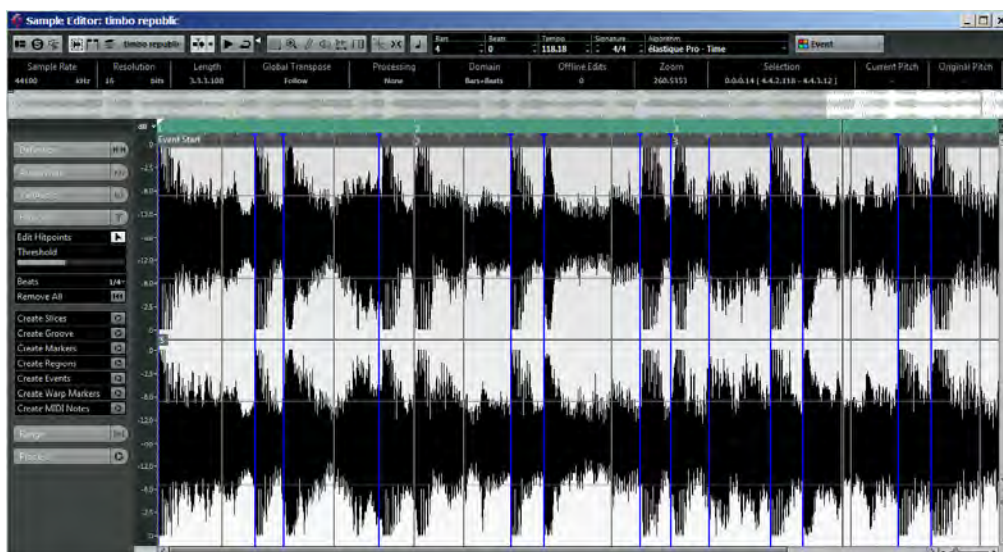
By selecting Hitpoints and assigning the threshold value, I am able to slice all the peak values into usable slices instead of having hundreds of slices due to the threshold's sensitivity setting.

The grey lines are Cubase's Hitpoints calculations based on peak values and, as mentioned earlier, this can be inaccurate and will need manual adjustments to line up the slice start times. The blue lines are slices I have moved to their correct positions based on when I think the element starts. This now gives me pinpoint accuracy when it comes to converting the slices into MIDI data. You can fine tune the slice start times by using the Audition tool that plays each slice when highlighted.

This will give you both a visual and aural representation of slice start and end times. In some instances I manually Draw In a slice using the pencil tool (segment in green, below).



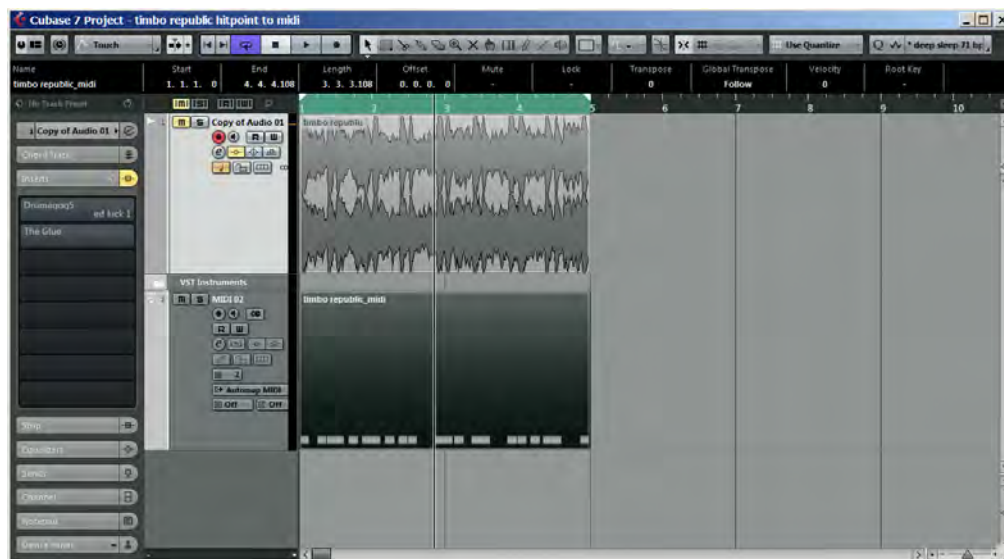
Finally, I end up with all the Hitpoints I want. The job now is to convert these slices to MIDI data.



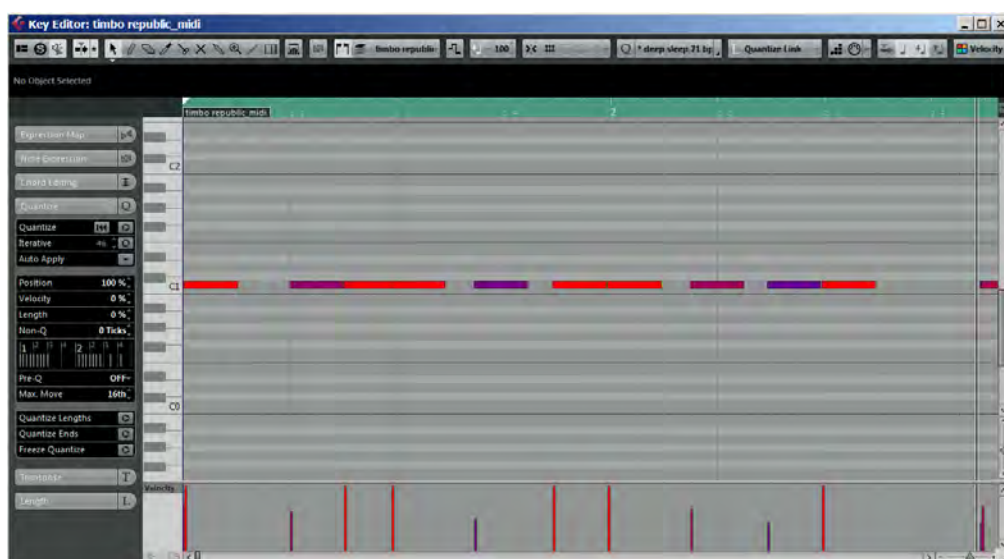
I use the following values for the function 'Convert Hitpoints to MIDI Notes':



And we end up with this:

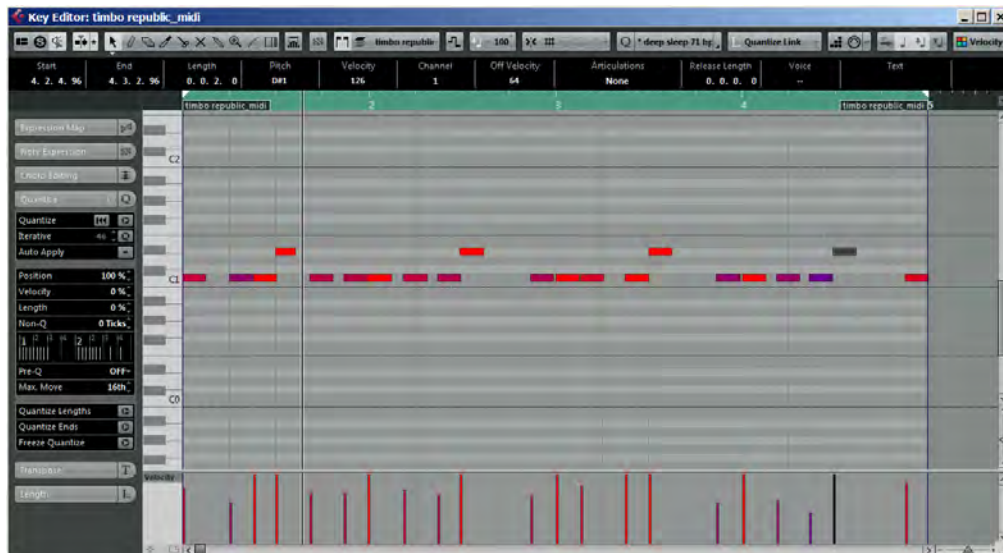


The next step is to open the MIDI Editor, and move the MIDI notes to their correct places, because Cubase has placed everything by default on note C1.





Because we chose Dynamic Velocity (Velocity Mode) in the Hitpoints-to-MIDI conversion process, we have also been gifted the MIDI velocity values (as seen below in the velocity controller lane). Having moved the MIDI notes to the relevant positions, we can now load up a drum module to trigger these new values.



Even though I have manually moved the MIDI notes to their 'correct' locations, the best way of accomplishing perfect timing for the new MIDI data is to play the original audio and the MIDI triggered version at the same time. This will expose any timing anomalies and help you to audition the new drum sounds within Timbaland's beat context. I found some 'double' notes that sat on top of each other, and I duly deleted the copies. This can happen when two peak values coincide. Because I want only the kick and clap MIDI data, I have made sure to remove any 'layered' hits (samples that sit on top of the kicks and claps).

Here is the audio of the beat I am triggering using only the ripped MIDI data from the track, and substituting my own sounds in place of the ones used in the track. I haven't spent ages trying to get the sound right, because this is subjective. All I have done is use one of my STN DruMM modules:

 **timbaland republic midi rip**

And now the two played together so you can gauge the timing synchronization for yourself:

 **timbaland republic midi rip combined**

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