Creating a "Tempo Change" for Beat Buddy using Logic Pro X (LPX)

Purpose: BB lacks a tempo change capability. This tutorial shows how to create the an accurate effect of a tempo change using midi time stretching.

Caveats:

1. This explanation presupposes a basic understanding of midi editing in LPX. There may or may not be similar tools available in Cubase, FL Studio, ProTools, etc. With regard to any other midi editing programs, including the built-in midi editor, I am ignorant and apathetic.

2. This example uses an accurate time stretching feature, so after the point in the song is reached when the time is stretched, the beats will no longer line up with the BB visual metronome. You will need to use your ears, not your eyes.

3. This technique creates a sudden tempo change, not a gradual change.

4. With regard to 2 and 3 above, this will be most appropriate for OPB-type song files. The reason being that after creating these time stretched areas, it will be very unlikely that the resulting measures will end on the points designated by Logic as measure ends. However, it can be used to create a pseudo-ritardando, useful for an outro, which is explained in another tutorial
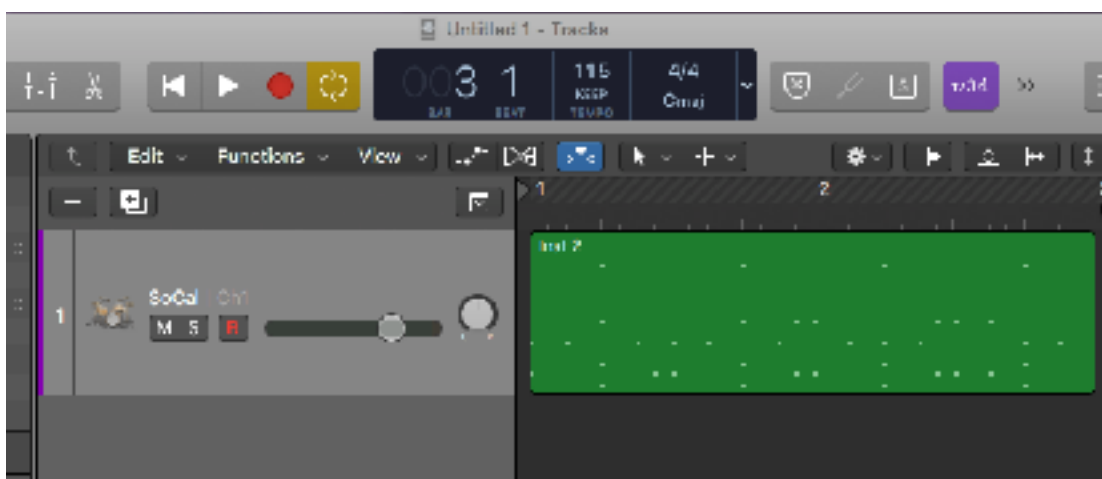
Process:

Ok, you understand LPX, so let's get started. First steps -

1. Start with an OPB you've created that needs one or more tempo changes.
2. Make note of the tempo change locations and the tempos needed.
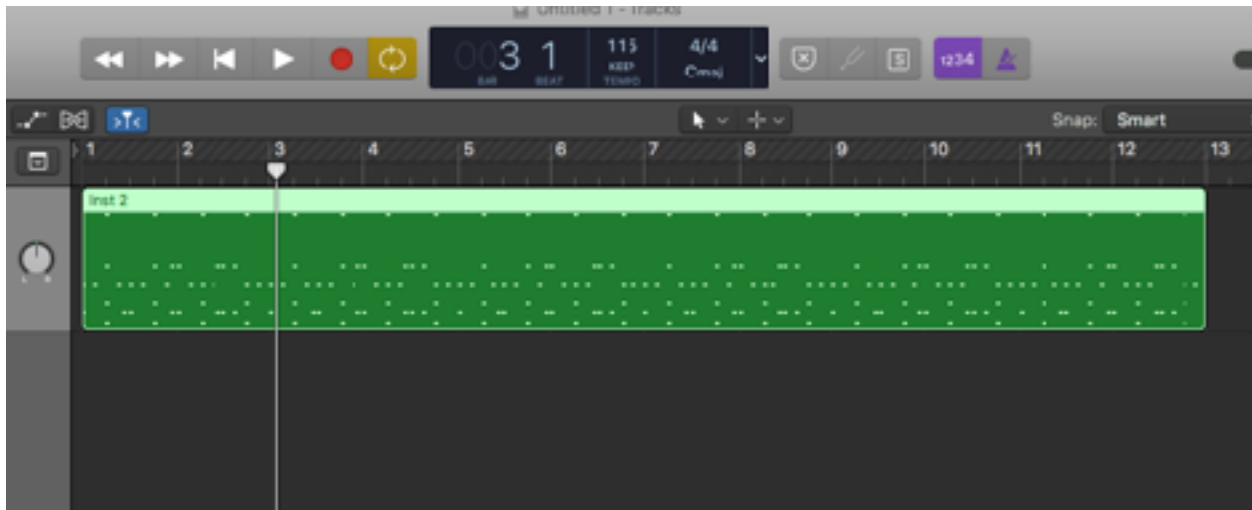
How to:

1. I am going to use one of the drum tracks from my LBDM 4BB project to illustrate. This is from R&B 3. It is the fist main loop, RB 3 A.mid. If you load that up in Logic it look like this:
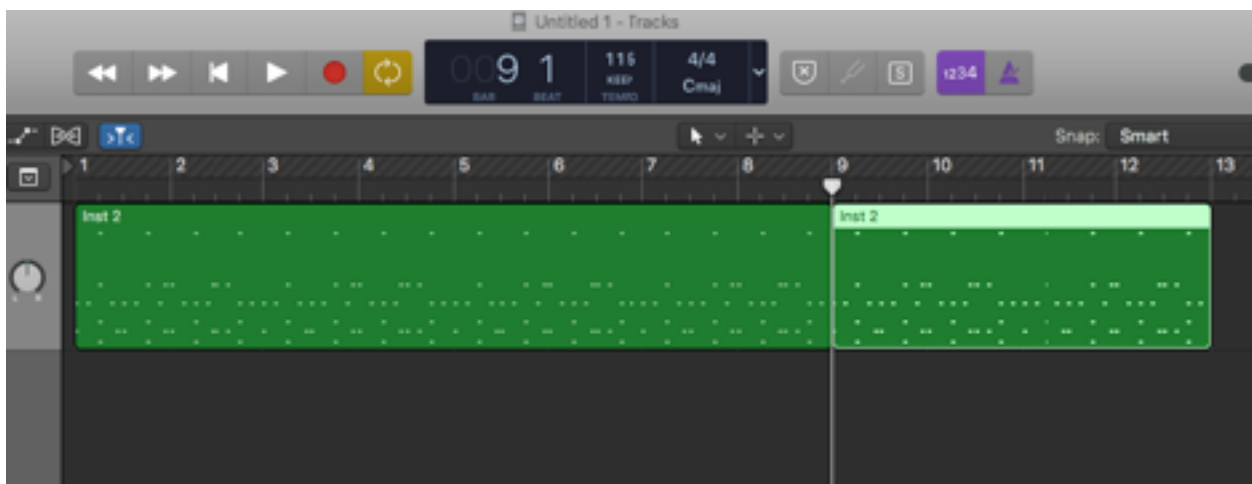

2.

The original tempo is 115, and it is only 2 bars long. We are are going to make it 12 bars long, and then change the tempo to 150 at the beginning of bar 9.
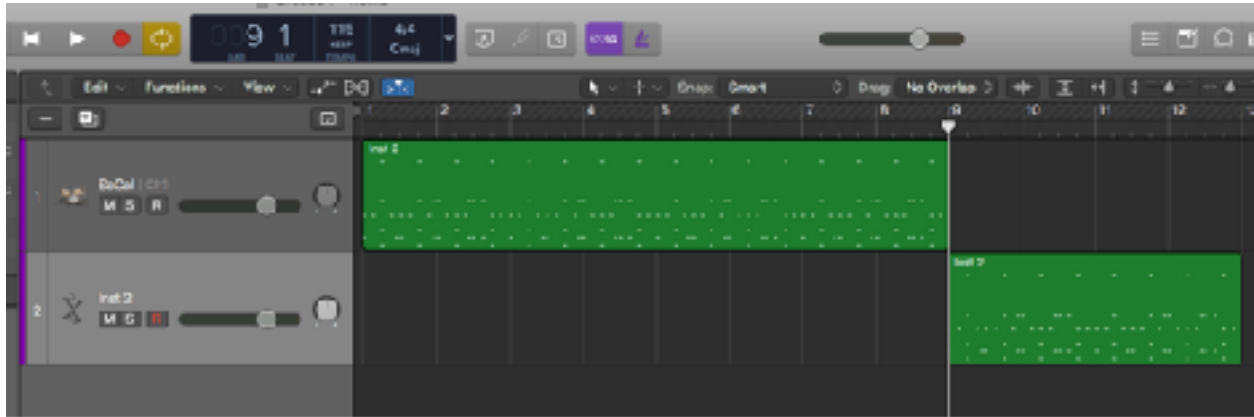
2. Use the loop tool or cur and past 5 times, to get 12 bars. The join the regions into one long region. If you used the loop tool, you are going to first "Convert Loops to Regions" and then Join Regions. You will wind up with this:
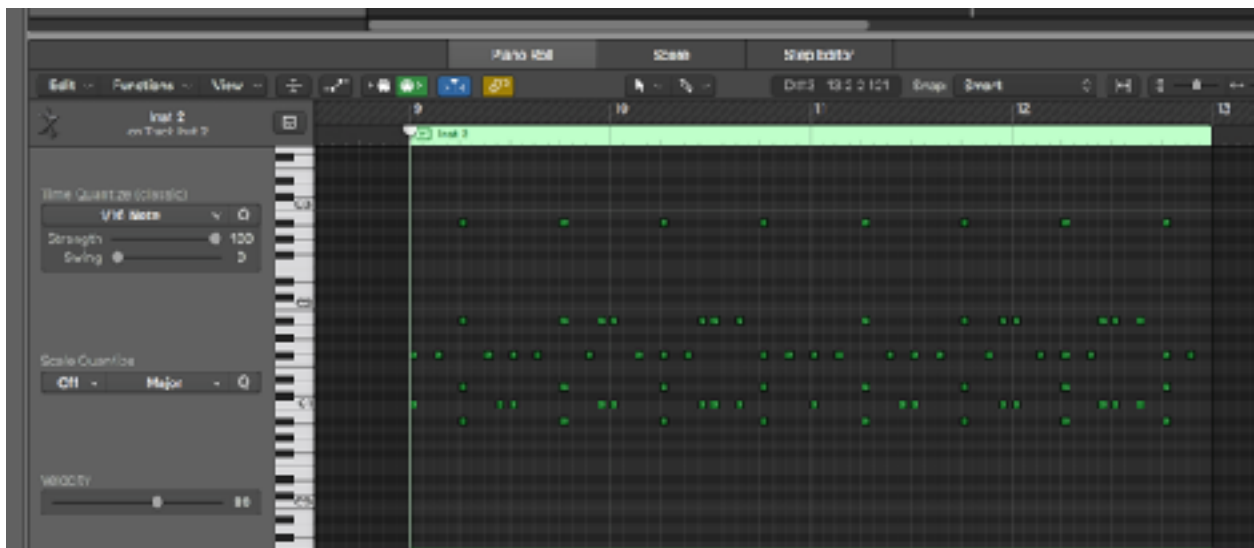

3. Apply a Split Regions to the track at the beginning of bar 9. I use the Command+T tool for accuracy.

4. Create a new track for this region, or if you have an existing open track, drag the region to it. Here I have dragged the region to a new track:
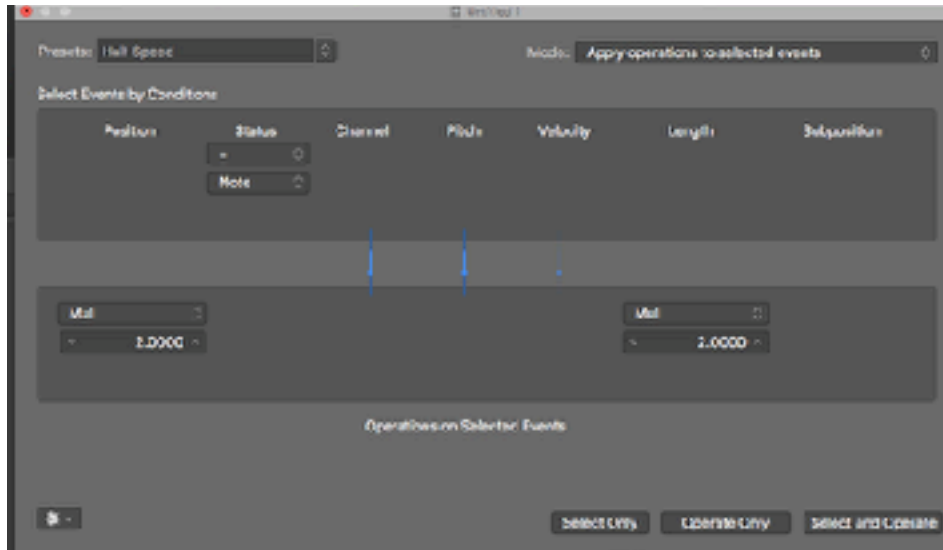

5. Double click on the track to make it appear in the Piano Roll editor window. The magic will be performed by the midi transform tool. It is found under the functions menu for the tracks:

Since I am making the track fast, i.e. it will play in a shorter amount of time, I do not have to worry about the existing region being long enough to hold the modified region. If I were making the region slower, I would first need to lengthen the region, adding blank space to the end of it.

This is shown in more detail in the ritardando tutorial. Click in the piano roll track, and then do Command+A to select everything in the track. Select Midi Transform>Functions>Half Speed. Don't do anything else, yet!

This box appears:

6. Note several things about this window. In the lower half box, there are two drop down selections labeled MUL, and below them are value windows which each have 2.0000 entered in them. This is the command to be performed by the transformation. It will MULtiply the midi values by 2.0000, effectively making them a half speed section. The notes will be twice as long as they were originally. The Double Speed window uses a DIVide command, but I find it easier to think in terms of multiplying rather than dividing.

Even though this window is a preset for Half Speed in the Transform command, it does let you enter values, so you can make it any speed, not just Half Speed. To calculate the number you need to enter use this formula:
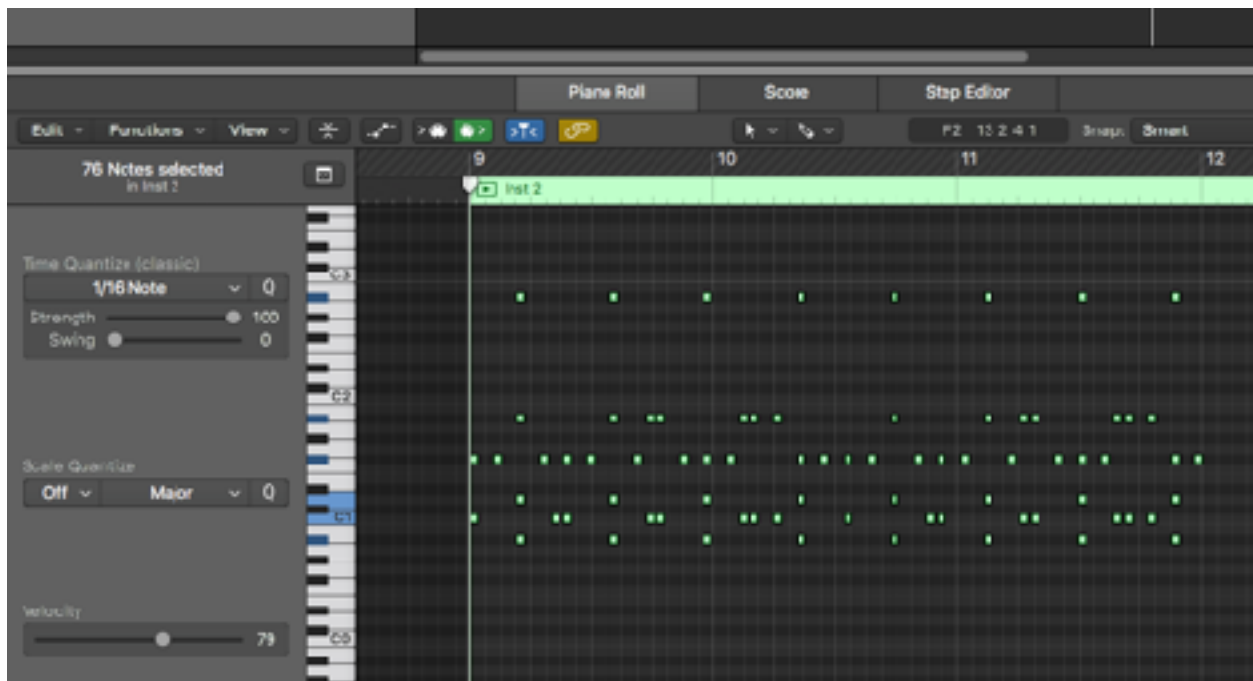
Original Speed / New Speed = Multiply Value

Applying this, we have 115/150 = 0.7667. 115 was the original speed. 150 was the speed for the new faster section.
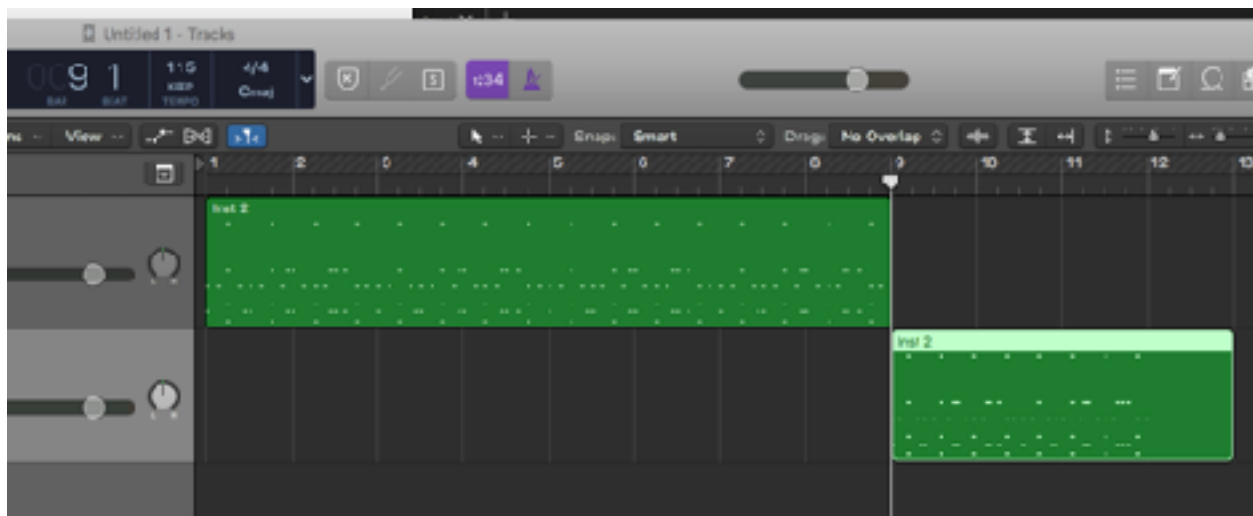
7. As I indicated above, if we were making the section slower, before we could apply the transformation to the region, we would need to give it enough room to hold the new longer region. Simply drag the right side of the region with the region end tool, not the loop tool, to give space. I usually make the region twice as long as it was originally, just to be safe. Before you do this, though, you'll want to be sure that you will be able to find the accurate place to rejoin the regions. If you have a note in the region that goes all the way to the end of the region, you don't need to do anything extra. But, if you don't, drag the last drum tick to the end of the region.

Again, I'll illustrate this in the ritardando tutorial. Here, we are going faster, so let's just do the transformation.
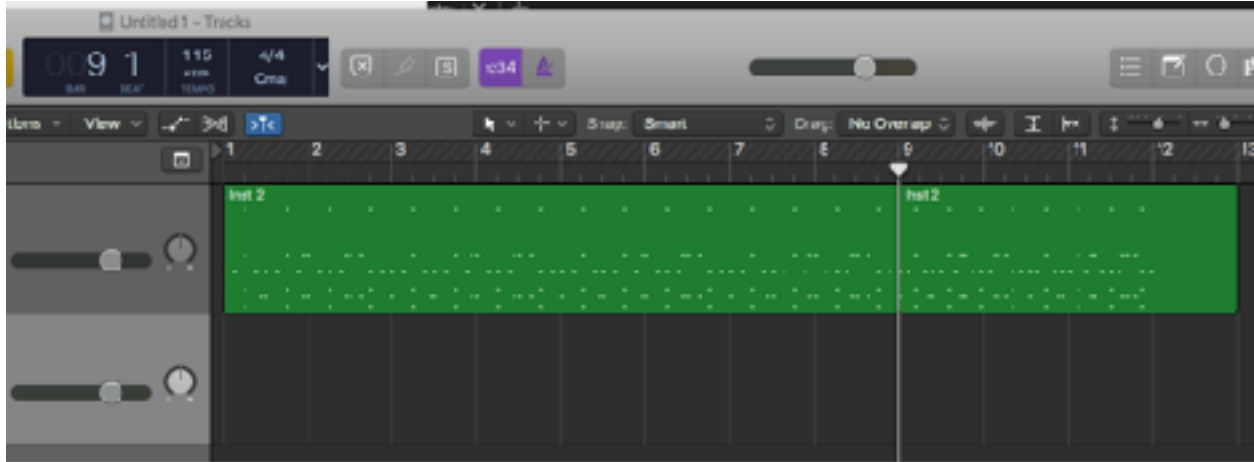
8. In the value boxes below each MUL, enter 0.7667. Click Select and Operate. and you held see something like this:
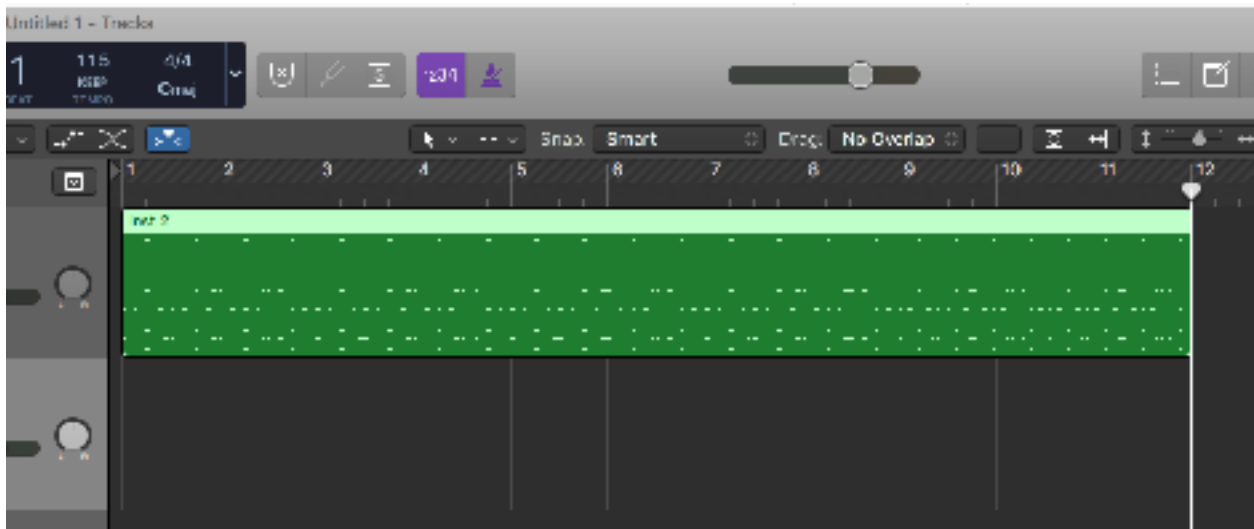

and

9. Drag the new region back into its place next to the original un-transformed region.

10. Select both regions and join them. It is also a good idea to delete the blank space at the end of the region.
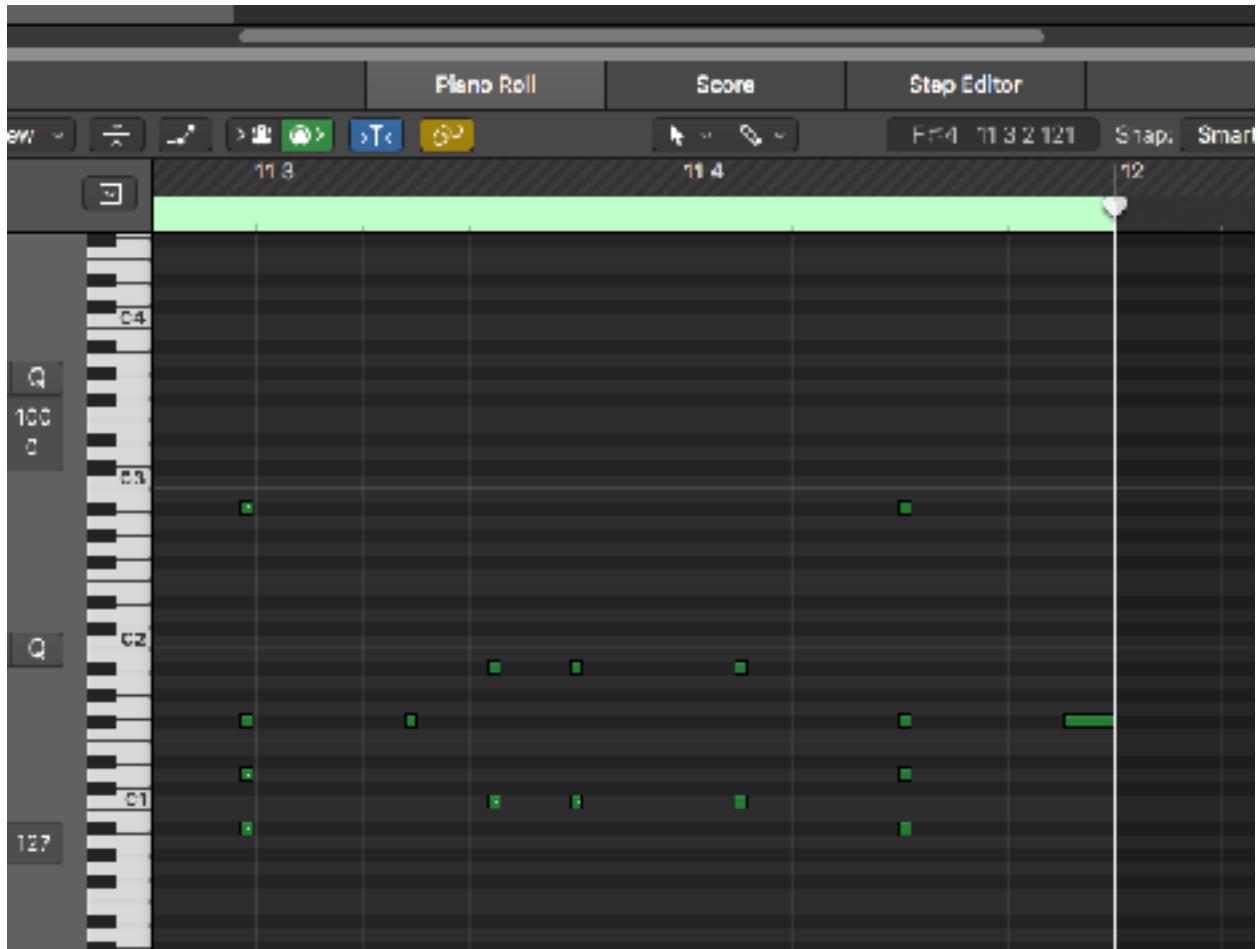

11. If you zoom in all the way, you should notice some blank space between the end of the last drum beat and then end of the region. Unfortunately, the combination of Beat Budy Manager and LPX often process this blank space incorrectly. To avoid any issues down the road, lengthen that last drum note out to the end of the Region.

Go from this:

To this:

12. The Region is now ready to be exported as a midi track for use in the Beat Buddy. IT will play 8 measures at the original 115 tempo, then the drums will play faster, even thought the Beat Buddy visual metronome continues to tick at 115 BMP.

Select the region, then:

File>Export>Selection as Midi File.