

# VINKALMANN'S GUIDE TO WARPING TRACKS IN ABLETON LIVE

(ver 1 04/07/2007)

## INTRODUCTION

There are two main skills that a traditional vinyl or CD DJ needs; the ability to pick the tracks to play at the right moment and beat matching. Ableton Live users too need to be able to pick the right tracks, but they don't need to know how to beat match. What they *do* need to know, however, is how to warp their audio tracks correctly otherwise they're going to sound just like a regular DJ train wrecking. While you get to get away from the need to beat match with Ableton, warping tracks is a chore in itself, is a learned skill and you can expect it to be tricky at first. By following the proven methods in this guide, you can save yourself some pain. Don't expect to get it right away, you'll find it awkward at first, but down the road you'll hardly even have to think about it. With some practice you'll be a warping master and will be able to work your Ableton magic without worrying whether your beats are going to go out of whack at an inopportune time.

This guide will cover several different ways of warping tracks. There's no one correct way to warp tracks. Find what works for you and go with that.

Zoom in on the pictures if you have a hard time seeing what's going on, or better yet, download the zip file that goes with the guide. The download includes a sample track and an Ableton Live project file to follow along with. Download the file [here](#). Note that the sample track has some big volume changes, that's intentional. The project file was created using Live version 6, so Version 5 users will not be able to open the file. The project file is *not* necessary to use the guide.

## **WHAT WARPING IS AND WHY YOU NEED IT**

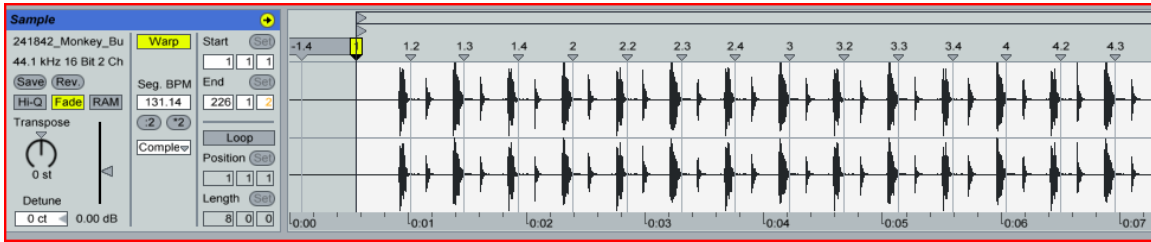
For the most part, in a particular style of music, producers make their tracks in a range of tempos. If you're mixing progressive house for example, you would expect to see tracks with tempos anywhere between 125 BPM (beats per minute) to 130 BPM. If you play one track at 125 BPM and try to mix in another track at 127 BPM, there's no way the tracks will ever line up. You'll have galloping beats that will have people on the dance floor running for the hills. So what do you have to do? You need to slow the incoming track down to 125 BPM and it will mix in fine. You can see visually why mixing two tracks with different tempos doesn't work in the pictures below. If you look at the beats at the beginning of both tracks they look sort of lined up. As you look to the right, the beats on the second track start getting ahead of the first track. From that you can say that the second track has a faster tempo than the first.

Traditional DJs beat match by adjusting the speed of the incoming track through trial and error until it matches the tempo of the track that's playing.

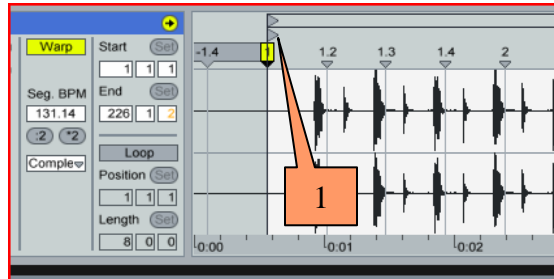


While a vinyl DJ controls the tempo of each turntable, in Ableton Live we don't have independent control of the two tracks' tempos, Ableton Live uses a Global tempo. What this means is that Ableton is going to control the tempos of the tracks for us. In order to do this correctly, we need to tell Ableton where the beats lie. Without that information Ableton won't be able to decide what to do to the track to make the beats line up. If the global tempo is at 125 BPM and the track that is playing has a tempo of 130 BPM, Ableton will stretch the audio track so it is playing at 125 BPM. Ableton knows nothing about the tracks. While we can see the beats, Ableton sees nothing other than what we tell it. What we tell it is *warping*.

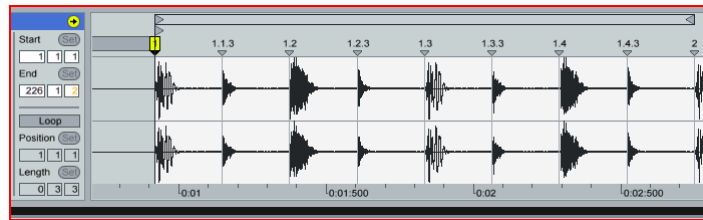
When you first bring a clip into Ableton from the browser, Live will take some time to create an analysis file. The file that it's creating will contain information including the warp settings that we're going to set up. When a track is first brought into Ableton from the browser, Ableton Live will *auto-warp* it (assuming that auto-warp is turned on in preferences). This is Ableton's best guess of where the beats are. In reality auto-warp is a good start, but it's rarely, if ever, the end. You will *always* need to make final adjustments before you can use the track. Take a look at the picture below. This is how things will look after you bring the track in and auto-warp does its thing.



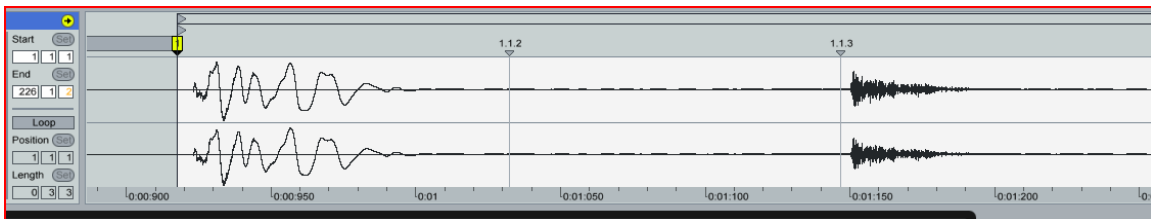
If someone asked you to say where the first beat on the above track starts, the answer would be "where the first beat is visible". Ableton on the other hand thinks that the clip starts where the yellow "1" is. The way we can tell this is that's where the play head is.<sup>1</sup>



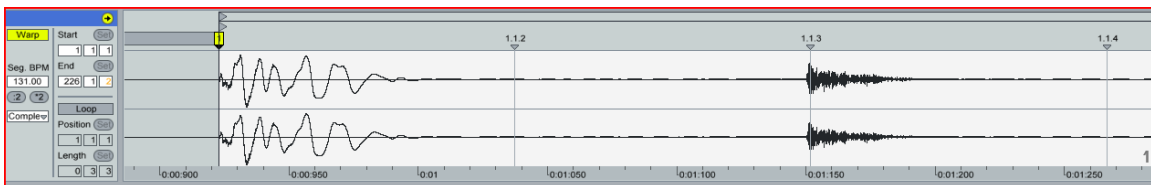
No matter what else you do to the track, it's *always* going to start wherever the play head is. So, we need to make Ableton's idea of the track start match where *we* think the track starts. Click on the yellow 1 and move and move it to the right so it looks like the picture below.



Now Ableton's start and ours agrees. Well almost anyway. Zoom in further on the clip and see what it looks like.

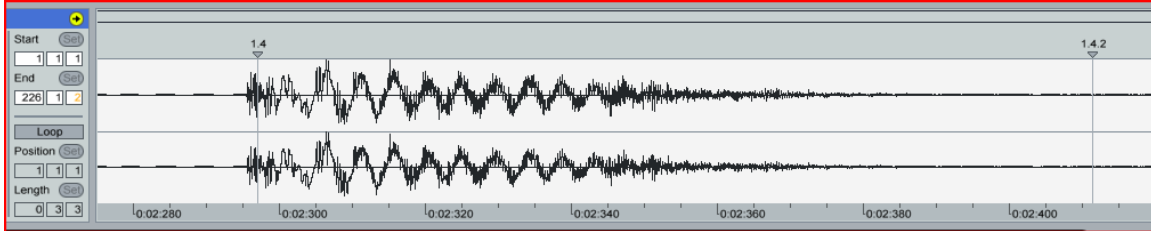


You'll see that the start of the clip isn't *really* where it should be. We can do better. Move the start point further to the right.

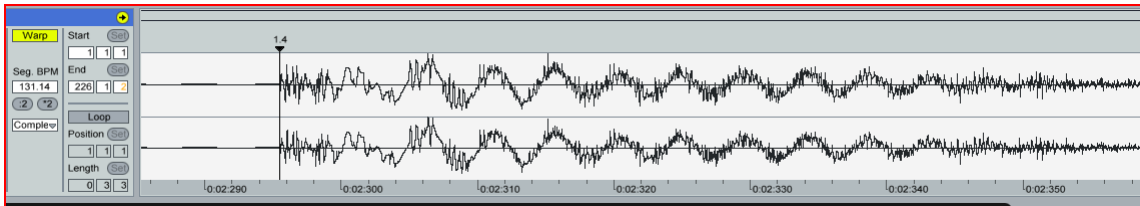


Ok. Looks good. Whatever method of warping you end up using, the foundation of getting it right is to make sure that the 1.1 marker is in the right place.

Zoom back out so you can see 1.4 and then zoom back in. Notice how the marker is straying from where it should be.

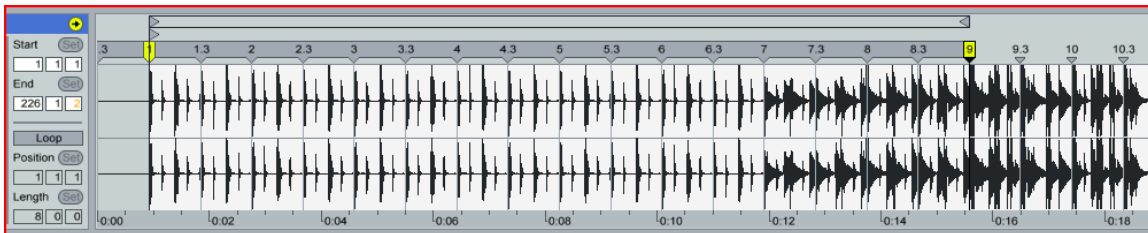


Fix it by clicking on the 1.4 and moving it slightly to the left to where the beat starts.



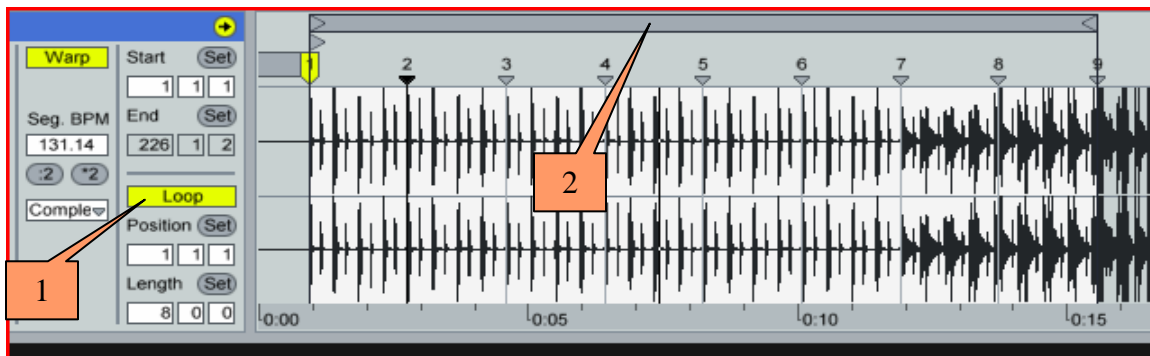
So that's the whole warping concept boiled down; all the warp bars in their place. Ideally we want all the markers to line up with their respective beats. The next section will show different methods of doing it.

In the next section I will direct you to drop warp-markers. Warp markers are an integral part of warping as some tracks cannot be warped without them. Every track has at least one warp marker, that one warp marker being the warp marker at 1.1. If you move any of the warp points to the right of the 1.1 marker, all of the warp lines to the right of the 1.1 marker expand the same amount. Whenever you drop a warp marker everything to the left of the new marker stays fixed when you move any of the markers to the right of the warp marker you just dropped. In the picture below, a warp marker has been dropped at 9.1. If I move the marker at 10.1 to the right or the left, all the warp lines to the right of 9.1 expand relative to how much they are moved. Everything to the left of 9.1 stays exactly where you left it. This fact is valuable when you have tracks where the tempo is changing slightly from measure to measure. When something looks good, drop a marker.

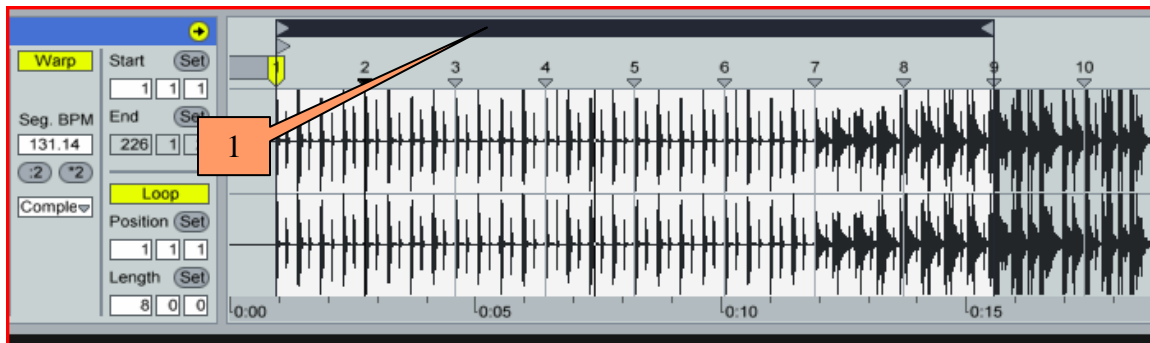


## THE METHOD THAT WORKS EVERY TIME

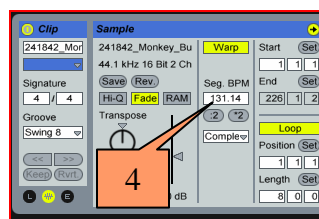
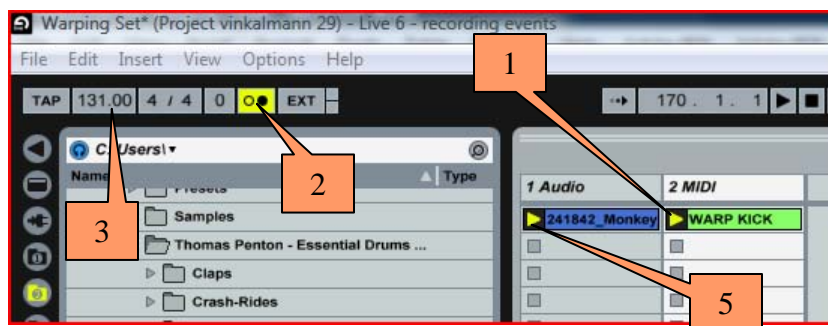
Start by clicking the “Loop” button.<sup>1</sup> Set the “Position” to “1.1.1” and the “Length” to 8.0.0. Note that the braces on top of the clip now span 8 bars.<sup>2</sup>



Now click the loop brace so it turns black.<sup>1</sup>



If you downloaded the Ableton set that goes with this guide, launch the kick drum sample.<sup>1</sup> If you're working with your own track, click the metronome button.<sup>2</sup> Then set your global tempo<sup>3</sup> to whatever the tempo says on the clip.<sup>4</sup>

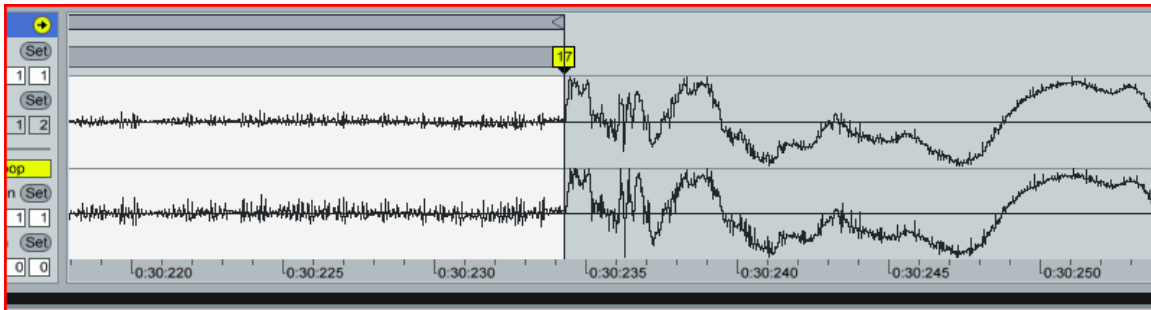


Now, start your clip playing.<sup>5</sup> You are now hearing the audio track playing with either another kick behind it if you're using the downloaded set, or a fairly

annoying metronome playing. Either way, things should sound pretty good at this point. The loop braces should still be highlighted black, if not highlight it by clicking it. Hit the up arrow on your key board, the loop should now start at 9.1.1 and end at 17.1.1 (8 Bars).

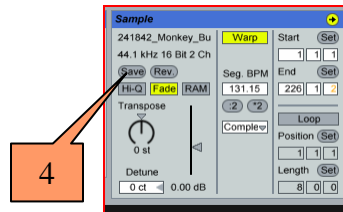


Does it still sound good? If so, zoom in on the 17.1.1 bar and double click on the 17.1 and drop a warp marker on the track. Zoom in on the marker you just dropped and adjust it if necessary.



Congratulations you now know how to warp! There's more to learn of course, but that's the basic idea. Now, do the rest of the track the same way. Highlight the loop bar and hit the up arrow, always listening to whether things still sound right. Drop a warp marker every 16 bars, so the next one will be at 33.1. Keep going till you reach the end of the track. This method will work for you almost every time for *tracks that have a fairly steady tempo*. This method will work every time with electronically produced music. This method *won't* work very well with live music made by people. Does it seem like this method is a lot of work? It is. It's mainly to demonstrate a more extreme approach. If you are working with live music use the same technique, but use a loop size of 1 bar opposed to 8 bars. Live music has so many tempo variations that you'll need to drop warp markers much more often.

Your track is now warped and here's the most important thing to remember. All that work you did means nothing if you don't save what you did. Hit the "save" button on the clip and you're done. *Everyone* at some point or another does a whole bunch of warping and can't figure out where the warping went the next time they open Ableton. Remember to save and not let that happen to you!

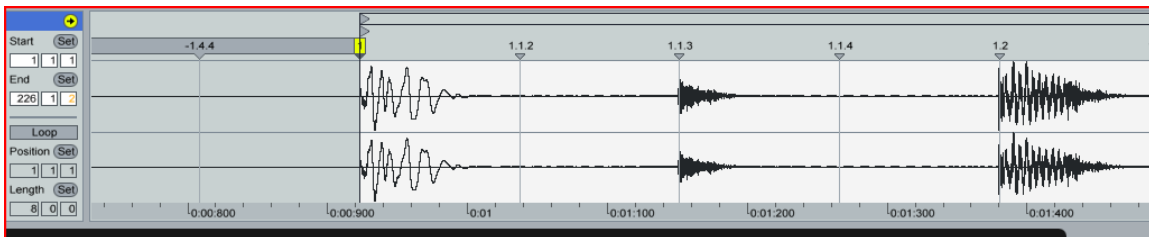


This method will work for you consistently but the thing to take away from this is *live music takes a lot more work to warp*. Don't expect to be able to drop a live track in and use it right away. All those mash-ups that people play took a lot of work to set up, at least the ones that sound good anyway.

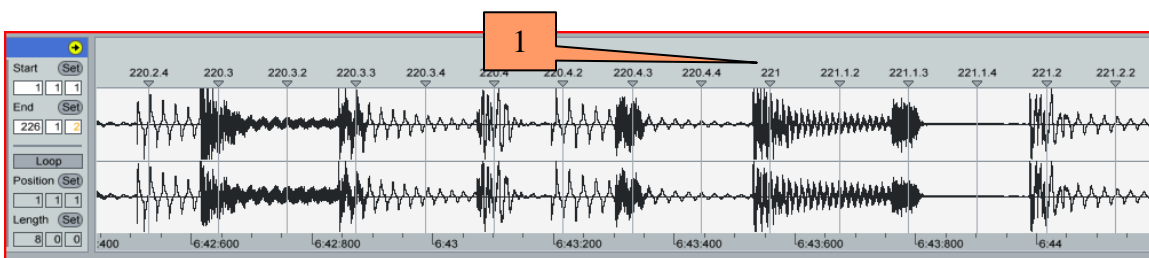
## THE TWO WARP POINT METHOD

This method works great for most electronically produced tracks. For more advanced users who are looking for the ultimate in sound quality, this method may not be enough. But combining this method with the next method in the guide is really all you really need to do.

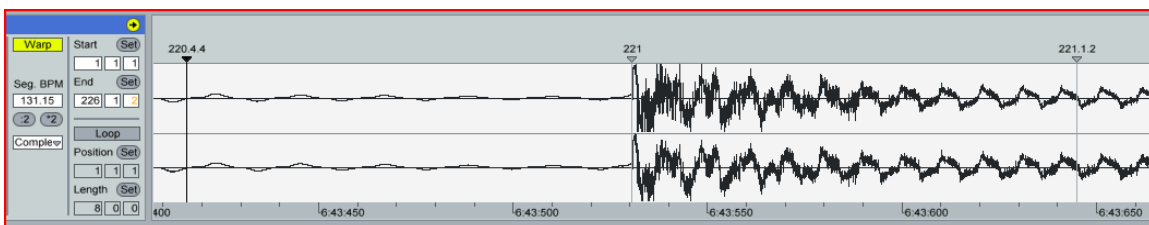
Start out like you did in the last method. Set the 1.1 marker *as precisely as you can*. Don't be afraid to zoom. Have the loop button turned off.



Right-Click (control-click on Mac) the 1.1 warp marker and select "Warp From Here". Now move your track view all the way to the end of the track and then zoom in.



Look at the 221.1 marker.<sup>1</sup> You'll see that it's too far to the right. This is because even though the 1.1 warp marker was placed correctly, the warp lines drifted over the course of the track. Zoom in really close and the move the warp line to where it should be.



Now double-click the 221.1 and drop a warp marker. Hit the save key and you're done! Technically you could have not made a warp marker at 221.1 and been ok, making this the *one warp marker method*. Note that this method is not foolproof. I would still recommend going back to the start and middle of the track and see if things look and sound good. If not, proceed to the next method which is just an extension of the one/two warp point method.

## **PERSONAL FAVORITE WARP METHOD**

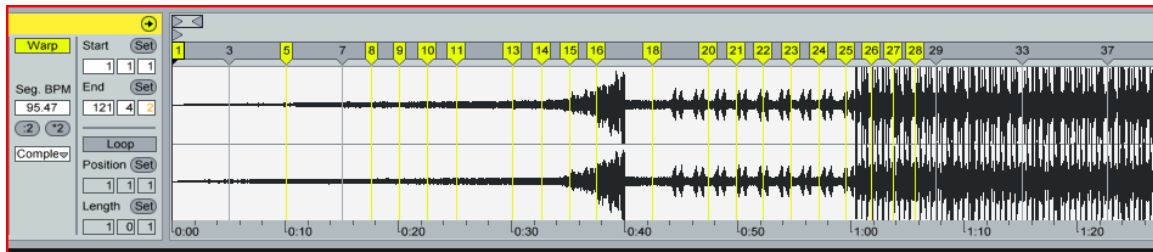
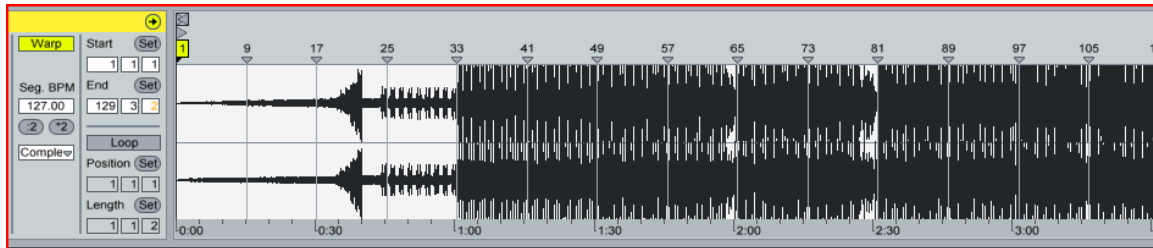
Use Ableton for a while and you'll see that there's lots of ways to get things warped. This one works well because it goes fast and is very accurate. This method is geared towards electronically produced tracks. If you are working with live music, stick to the method listed above with a short 1 bar loop.

Warp a track the same way as the one in the previous section but don't drop a warp marker at the end. The reason the one warp marker method works is because most tracks have a very consistent tempo. You might be surprised to find that many electronically produced tracks *do* vary slightly. Who knows why, but they do. Anyway, going to the end of the track first, gets things in line to continue working on the track. Go back to the beginning of the track now and look at the first 16 bars. Zoom in and drop a warp marker on 17.1. Make sure that the 17.1 marker is as accurate as possible. Right-click the 17.1 marker and choose "Warp From Here". Now go to 33.1 and drop a marker and then hit warp from here. Do the same thing at 65.1. Keep doing the same thing down the track, but double then length between markers. Having trouble figuring out the next correct place to drop a marker? If you are starting at 17.1 (16 bars) the next place to drop it is at  $((17 - 1) * 2) + 1$ . Confusing? Not really, just replace the "17" with the last marker you dropped. For example, the next marker after "17.1" is  $(16*2)+1 = 33$ . The one after that is  $((33 - 1) * 2) + 1 = 65$ . If this still seems confusing, don't worry about it. Once you have this method down, figure out what intervals work for you. You don't even have to have intervals. Do random checks in the tracks and drop warp markers and adjust if necessary.

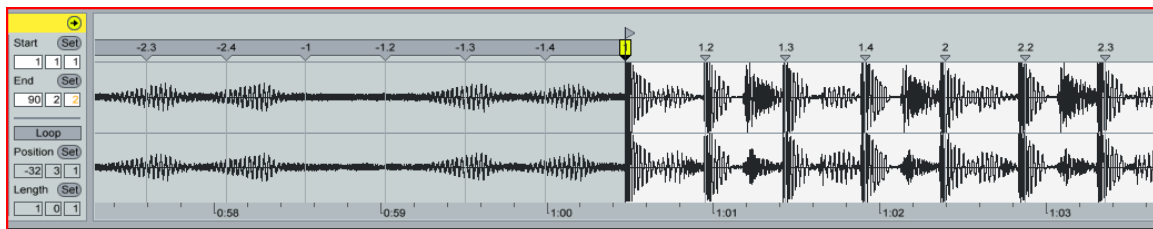
Note that if you really want any method to be iron clad, you need to confirm the track against a beat that you know is consistent. Once the track is fully warped, play the track and the comparison beat and then jump around the audio track. Take a few random samples and if everything sounds good, hit "save" and move onto your next track.

## WARPING TRACKS WITH INTROS

Not all tracks start out with a really clear beat. We all have those tracks with the cool intros we want to use, but how do you warp them without beats? Easy, you don't. You start warping where you know where the beats are. Here's what not to do. In the picture below we can't just set the start marker to the start of the track and the hit "Warp From Here". If you do, you get what's in the bottom picture. If you ever see that again, pretty much know something isn't working.



Start over. To get rid of all the warp markers that you aren't going to use, click the last warp marker, hit "delete" and hold it down until all the markers other than the 1.1 marker are gone. Looking at the WAV form, we can't say where the first beat of the track is with any certainty. What we *can* see though is there are some clear beats down the road. Zoom in where you can see some clear beats. Right-click a warp marker near the first beat and select "Set 1.1 Here".

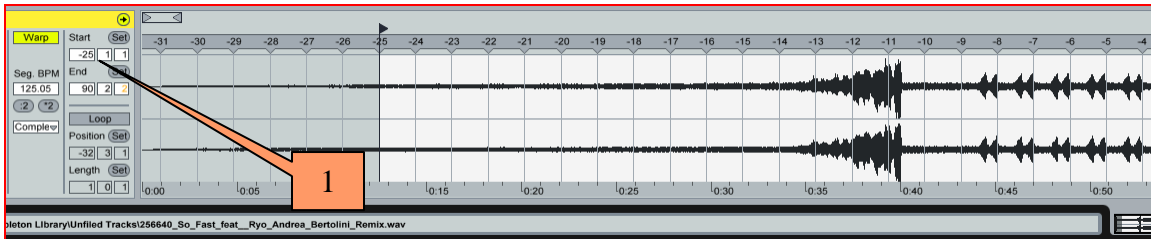


Warp the track however you want, pretending that the intro isn't even there.

Now we'll learn while the play head we talked about in the beginning was important. While the warp markers start at the 1.1 warp marker, we don't necessarily have start playing there.

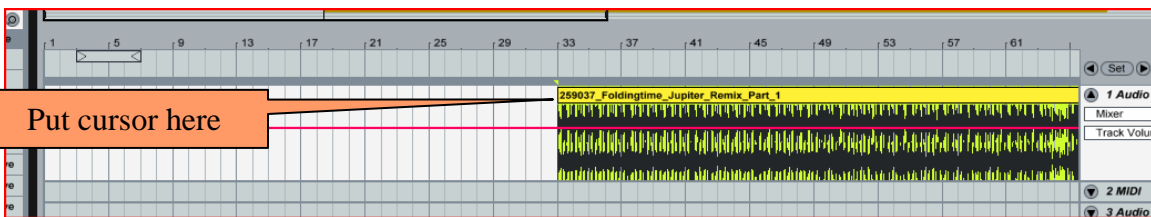


Move the play head back to the start of the track where the track should start when triggering the clip. If you're working music that follows the 8 bar rule, make the start in multiples of 8 (-9.1, -17.1, -25.1, -33.1). Move the play head by hand, or easier, type the play head start point in manually.<sup>1</sup>

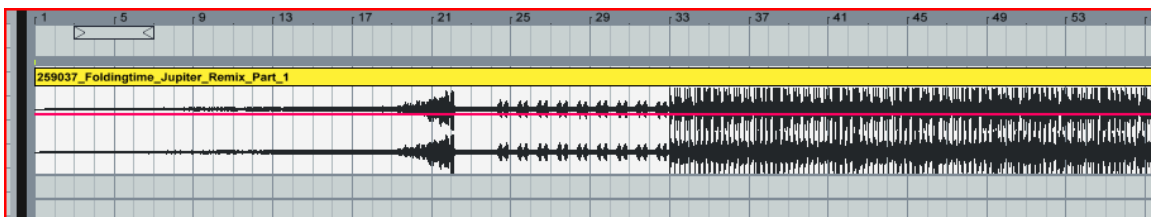


Notice that in this case I chose -25.1 instead of -33.1. The track is completely visible in the picture above, there no way to set the start at -33.1 so you have to go with the next best thing and go with -25.1. When you're playing with tracks live it's a lot more important to warp the tracks this way, with the right start. If you're using the arrangement view to make mixes this is much less of an issue.

Arrangement view users get a little easier time warping tracks with intros. Start by dropping the 1.1 marker on the first beat of the track. The play head is at 1.1. Warp the rest of the track using your method of choice. Don't worry about the intro and save the track. Drag the track into arrangement view and leave some time at the front.



The key thing to note here is that the start of the clip is on a solid line. Now go to the start of the clip until your cursor becomes "[". Drag the front of the clip back until it stops.



Done! You get to start the track and get all the intro, and the rest of the track where it counts is following the global quantization. The thing you have to remember is that right now the track is following the global quantization because we took care of that by dropping the start at 33.1. If you now move the track, it's going to lock onto a line based on the start of the intro and not where beats line up. If that doesn't make sense, you'll understand after you make that mistake once.

## **WHY WARPING'S SUCH A PAIN**

If you find asking yourself this question you're either new to Ableton (likely) or you're trying to warp difficult tracks. If you're new, give it some time and all the issues will go away. You may even be having a hard time warping electronic music tracks that should be easy. There are two main reasons that electronic music tracks are hard to warp; if they were originally ripped from vinyl or they were downloaded illegally through P2P networks. When tracks are ripped from vinyl, the tracks' tempo changes slightly as the turntable speeds up and down as all turntables do. If you have a track that's changing tempo slightly, you're going to have to drop many more warp markers to make sure that the warp lines are staying in step with the beats in the track. If you are warping tracks downloaded from P2P, those tracks *often* have imperfections and bits missing from the track throwing off the tempo. Stay away from those tracks, you'll be a lot happier. Why steal them anyway? It's so easy to buy them now that the money you'll save isn't worth the poor sound quality and the warping headache you'll end up with.

Assuming that your tracks are from valid sources (purchased) you're going to have an easy time warping unless they're performed live. Those types of tracks are *always* time consuming to warp. A lot of times you'll end up using only select live tracks since the warping process is so painful.

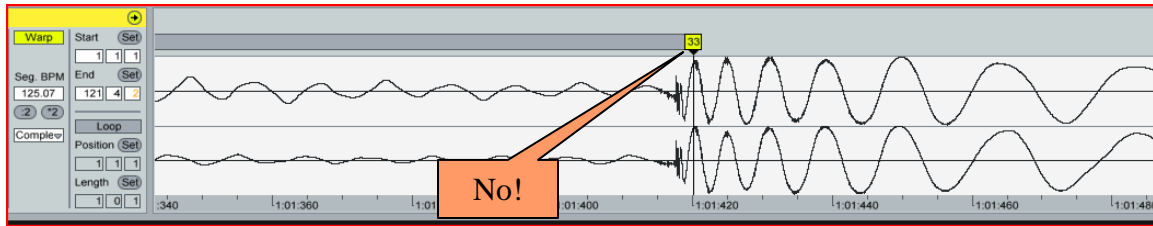
## **WHERE THE WARP MARKER GOES**

A question that comes up a lot, is where the warp line should be dropped. Should it be at the start of the beat? Should it be at the top of the beat? The answer is that the beat should fall on the transient. A transient is where the beat starts. In the picture below, the signal drops to zero and the suddenly spikes up again. That's the transient. The warp line should line up where the transient starts.



Some people go with the idea that the marker should go at the top of the beat as in the picture below. I wouldn't recommend this. A way that you can tell the difference between correct (above) and incorrect (below), start a comparison beat like you did earlier. Move the warp marker around and listen to how the

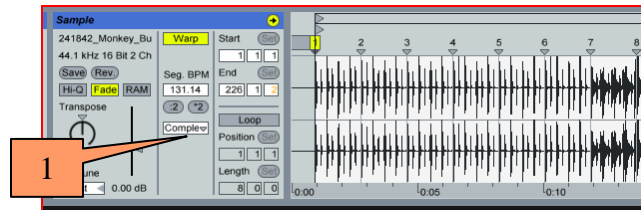
bass sounds. If you have the marker in the right spot the bass will sound full and tight. If the line is in the wrong spot the bass will sound dull and muffled.



A good lesson here, warping by site works really well once you know what you're doing, but if you want the best possible sound quality, do the compare against a know beat. Midi beats are the best option.

## ABLETON'S WARP MODES

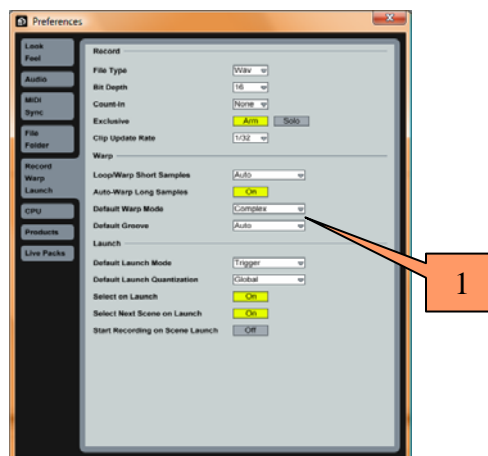
Once you have the hang of warping, you're going to need to choose a warp mode. The warp modes are different ways that Live uses to stretch and compress tracks in order to make them longer or shorter to play in time with other tracks. Some warp modes work well for some types of tracks and not others. If you are new to Live, I would suggest only using "Re-Pitch" and "Complex". To make it easy on yourself, use "Complex".<sup>1</sup>



The reason to choose one warp mode over another is the sound quality. The best sound quality you are going to get, outside of turning warping off, is "Re-Pitch" mode. It does have a catch though. When playing tracks that are warped with Re-Pitch, the track will pitch up and down with global tempo changes the same way that a track played on a turntable will pitch up and down as the pitch slider is moved. "Complex" mode, on the other hand, keeps the pitch constant regardless of where the global tempo is. This mode is *very* useful when trying to mash-up two tracks that have very different tempos. The catch on "Complex Mode" is that the tracks will sound a little bit flat and muffled. The sounds still sound great considering everything that Ableton's doing to the tracks.

If you are using finished tracks while DJing or making mixes, *do not* use "Beats" mode. "Beats" mode leaves all sorts of artifacts in the sound that's especially noticeable when listening to vocals, strings, or anything with a sustained sound. People tend to end up using "Beats" mode when they're new because that's the default warping mode. Do yourself (and your listeners) a favor and don't use "Beats" mode. "Beats" mode does have a use though. It works very well for clips, not tracks, that are basically beats. So if you are warping a drum loop, for example, give "Beats" a try.

You can set the default warp mode for tracks in preferences on the "Record/Warp/Launch" tab.<sup>1</sup>

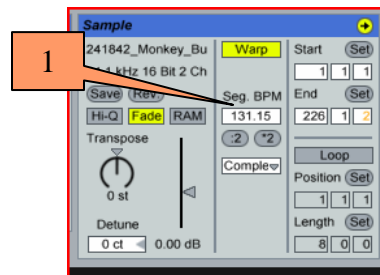


This setting only controls the warp mode on *new* tracks. It doesn't do anything to tracks that you have already warped. If you have tracks that are warped in "Beats" and you want to change to "Complex", you will need to open each track, change the warp-mode. Don't forget to hit the "Save" button on the clip.

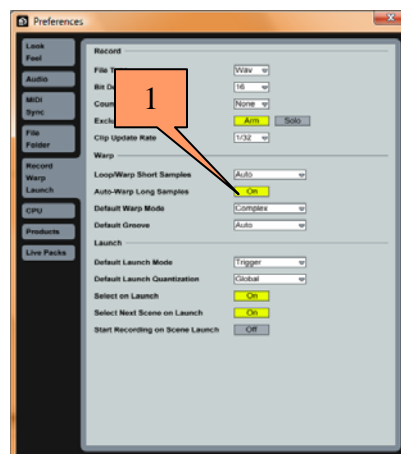
No matter what warp mode you choose, they will all sound poor if you are trying to play a track too far from its native tempo. For example if you are trying to play a 90 BPM track at 137 BPM, it's not going to sound good. The inverse is also true. Trying to play a fast tempo track at half speed is also going to cause the sound quality to suffer.

## ODDS AND ENDS

- If you don't want to listen to the metronome and don't want to set up a comparison beat through midi, make a loop out of a track that you know is warped right. Drop that loop into session view and play it while you warp your tracks. Do I need to mention that the comparison loop should be warped perfectly?
- However you warp your tracks, starting at the beginning of the beat or at the top of the beat (not recommended) be consistent. If you warp all your tracks the same way things will sound good.
- When starting out warping tracks things will likely sound good to you. Over time as you get better warping, you may find that you need to re-warp older tracks as your skill level will be higher than when you originally worked with the track.
- Be *patient* when warping live tracks, it just takes longer. Use a short 1 bar loop and follow the directions in the "Method that Works Every Time" section.
- People confuse themselves by trying to set the "Seg. BPM" box<sup>1</sup> in the clip's view. Leave it alone, 99% of the time it's not important to warping. On occasion you may see that the tempo displayed is 2 times the tempo it should be, or one-half what it should be. In those cases, hit the "\*2" or "/2" button right below the "Seg BPM" field until the tempo looks correct.



- When you right-click a warp marker, you get several options including "Warp From Here". I myself stick to "Warp From Here", the other options are described in the Ableton Manual.
- Auto-warp is a good tool to get *most* tracks into a good starting state. It really doesn't work so well on non-electronic tracks. For those types you'll need to erase the warp markers and start over. If you would prefer that Ableton doesn't auto-warp, you can turn it off in preferences.



- Sooner or later you'll run into a track that just seems to be impossible to warp. It's very possible it *is* impossible to warp. It happens once in a while. Sometimes stepping away from a track will give you fresh insight. You also may discover you don't like the track enough to warrant the headache.
- Currently live doesn't allow you to make any notes or marks on tracks. Want to be reminded when to bring the next track in to get that perfect drop? Put a warp-marker where you want the visual reminder.

## **CREDITS**

- Title and header font: PROPOGANDA by Apostrophic Labs available on [www.dafont.com](http://www.dafont.com).