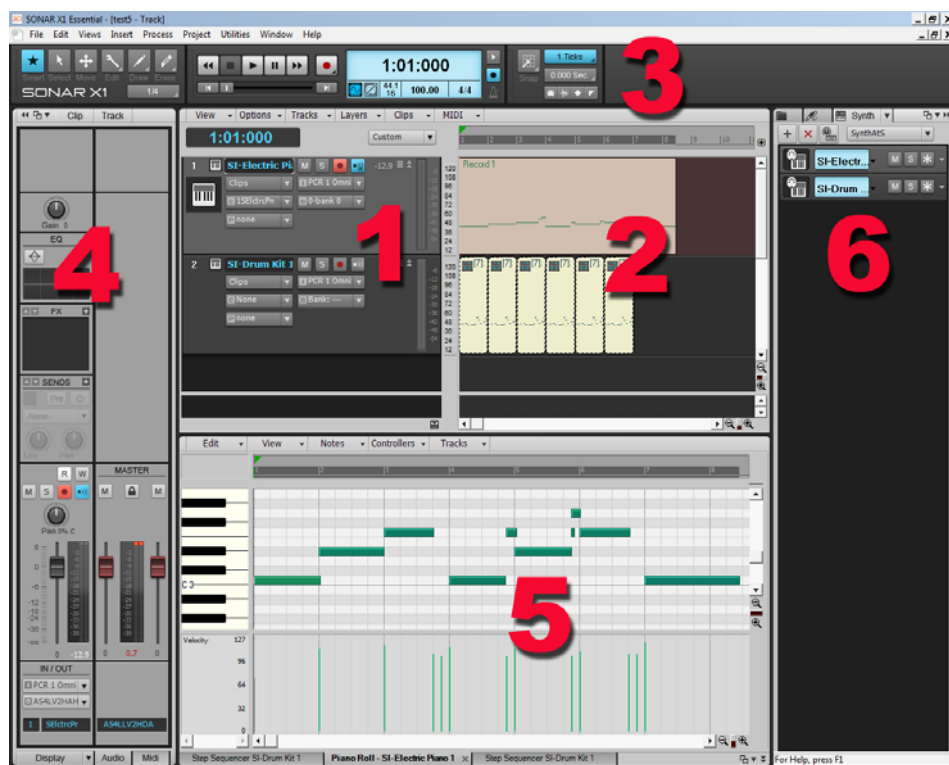


# WHY USE A MIDI SEQUENCER IN THE CLASSROOM?

## Introduction to SONAR X1 Essential

*SONAR X1 Essential is the new entry-level Digital Audio Workstation from Cakewalk. It features comprehensive audio and MIDI recording and editing features, as well as a host of virtual instruments. The low cost of the software (\$109) makes it a viable option for schools and classrooms.*

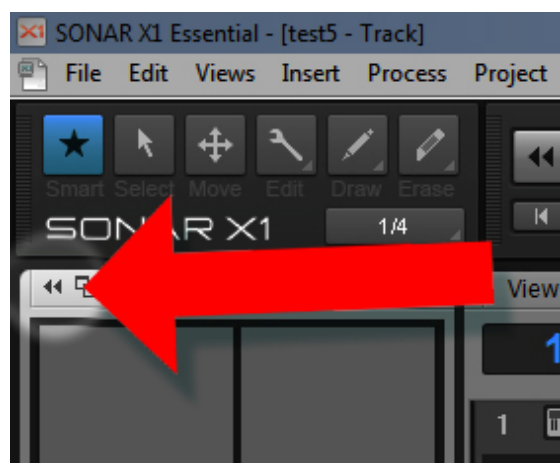
### THE SONAR X1 INTERFACE



1. Track Pane – can be configured to display input/outputs, MIDI assignments, automation and volume and pan information.
2. Clip Pane – shows audio and MIDI regions

3. Control Bar – by default holds transport and tool bar can be customised to show a variety of project information and specialty tools.
4. Inspector Pane – contains detailed information on the currently selected track, such as volume, pan, FX and bus assignments.
5. Multidock – can contain a variety of panes, which appear as tabs along the bottom of the screen. Panes can be added to the multidock via the Views menu.
6. Browser – find and import various content into your project such as soft synths, loops, MIDI files and effect plug-ins.

While the SONAR X1 interface has the potential to display many different types of information on the screen at one time, this is not always preferable, especially when working on smaller screens. Each element features two arrows that when clicked, will minimise that pane:



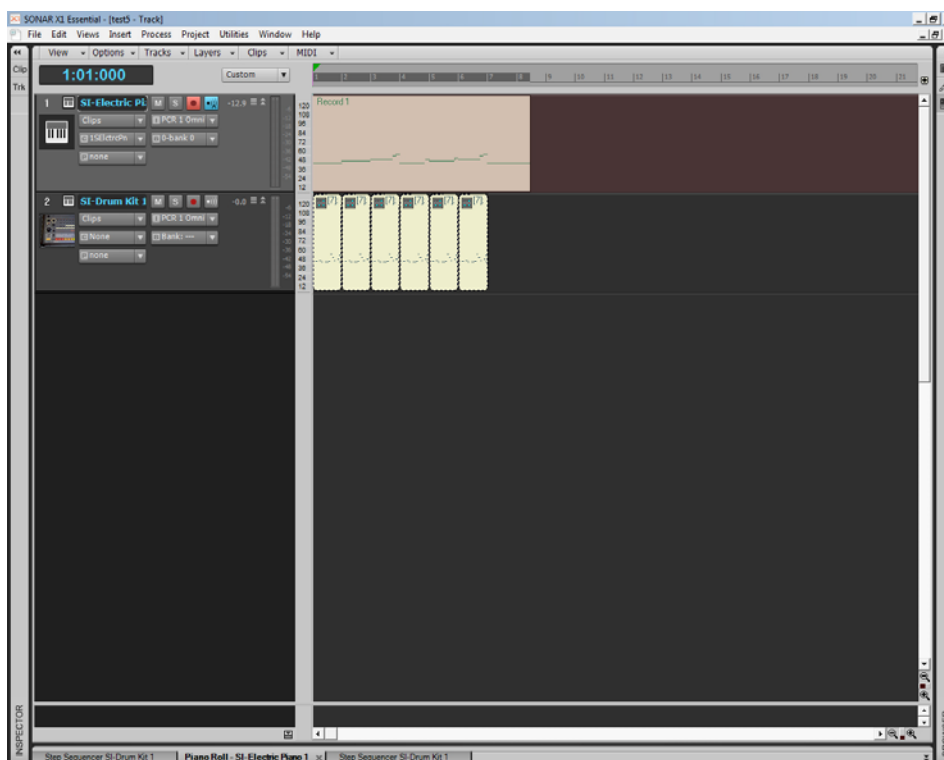
Here is the inspector pane after it has been minimised:



Luckily, there are a number of single key short cuts to minimise and maximise the different elements of the interface.

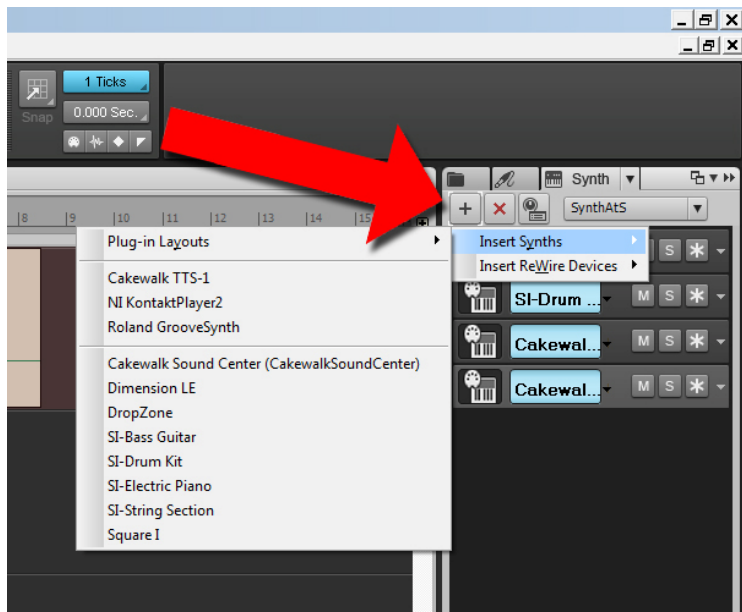
Show/Hide	Keyboard Shortcut
Inspector	I
Multidock	D
Browser	B
Control Bar	C

Using these shortcuts allows to quickly control what is displayed on screen, while keeping the interface uncluttered enough to maintain good workflow. Here is the same SONAR X1 interface with all of the panes turned off:

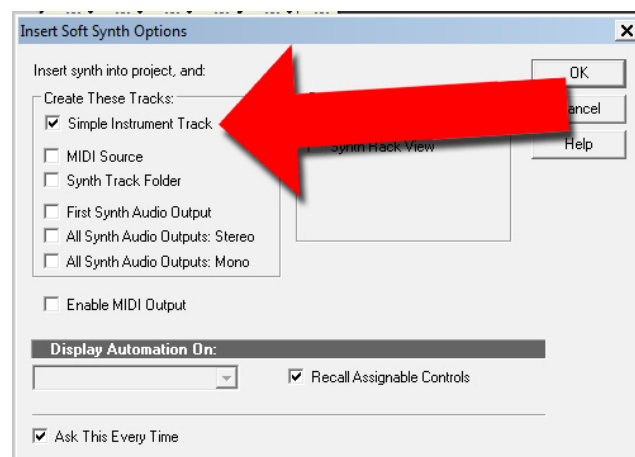


## INSERTING A SOFT SYNTH

From the Browser pane, press the '+' button to display a list of the soft synths installed on your system (Alternatively, you can go to the Insert menu and choose Soft Synth):

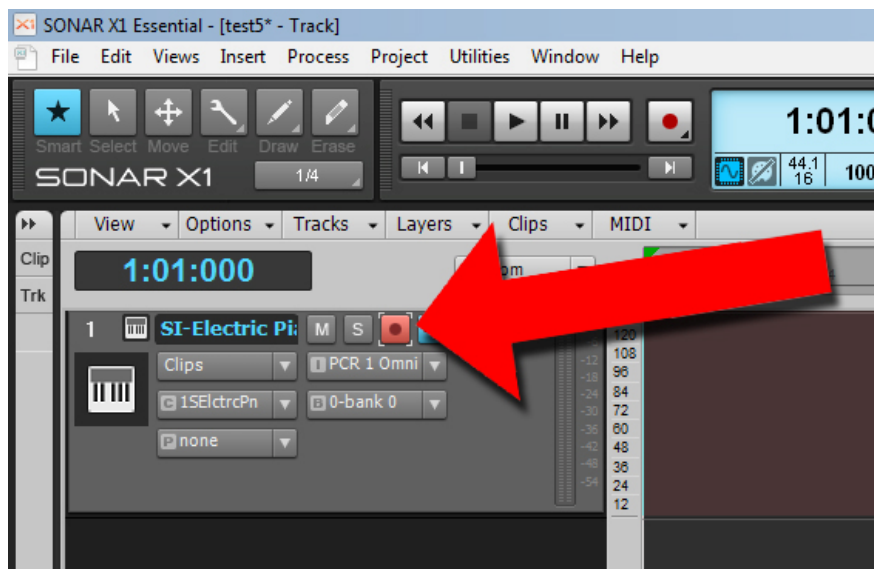


The dialogue box that appears that allows you to choose different types of tracks to be created along with the Soft Synth. By choosing Simple Instrument Track, you create a track that is able to record and playback MIDI information as well as output the sound of the synth.



## RECORDING A SOFT SYNTH PERFORMANCE

Use the Record Enable button to ready the track for recording. You'll notice that the track lane changes to a red hue to indicate that Record Enable is turned on.

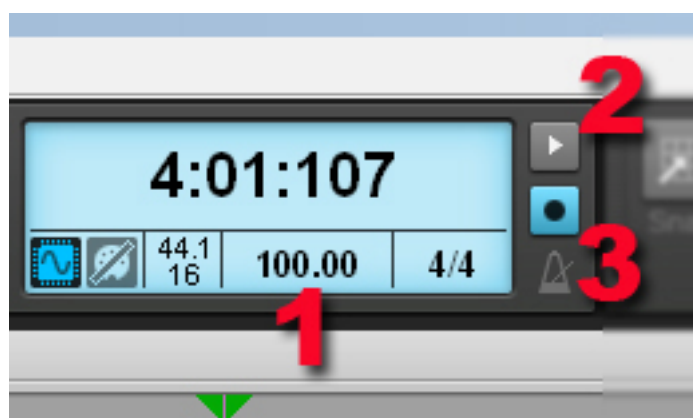


When you are ready to start recording, click the Record button. Alternatively, type 'R' on the keyboard. The playhead will begin rolling.



Recording can be stopped by clicking the Stop button or hitting the spacebar.

## SETTING THE METRONOME

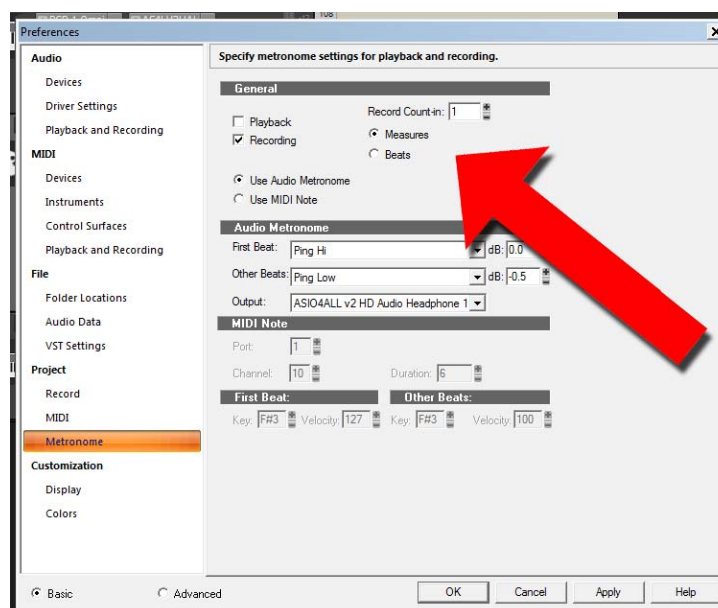


The main metronome settings can be accessed from the Control Bar at the top of the screen.

1. Tempo – set the BPM value for the entire project. Changes in tempo can be set in the project by selecting Insert Tempo Change... from the project window.
2. Metronome During Playback button
3. Metronome During Record button

## SETTING A COUNT IN

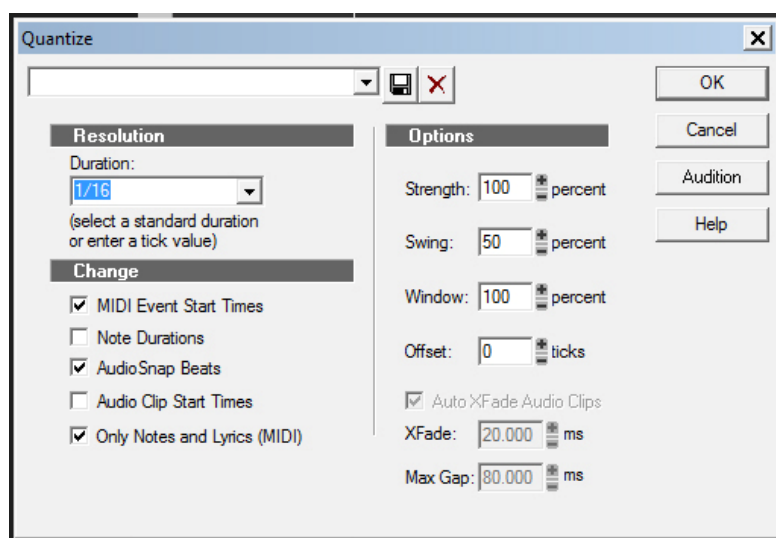
To set up a count in, type 'P' on the keyboard to access the Preferences window



Under Project, the Metronome settings will allow access to more detailed metronome settings. The Record Count-in can be set here, along with the number of beats or bars of count in required.

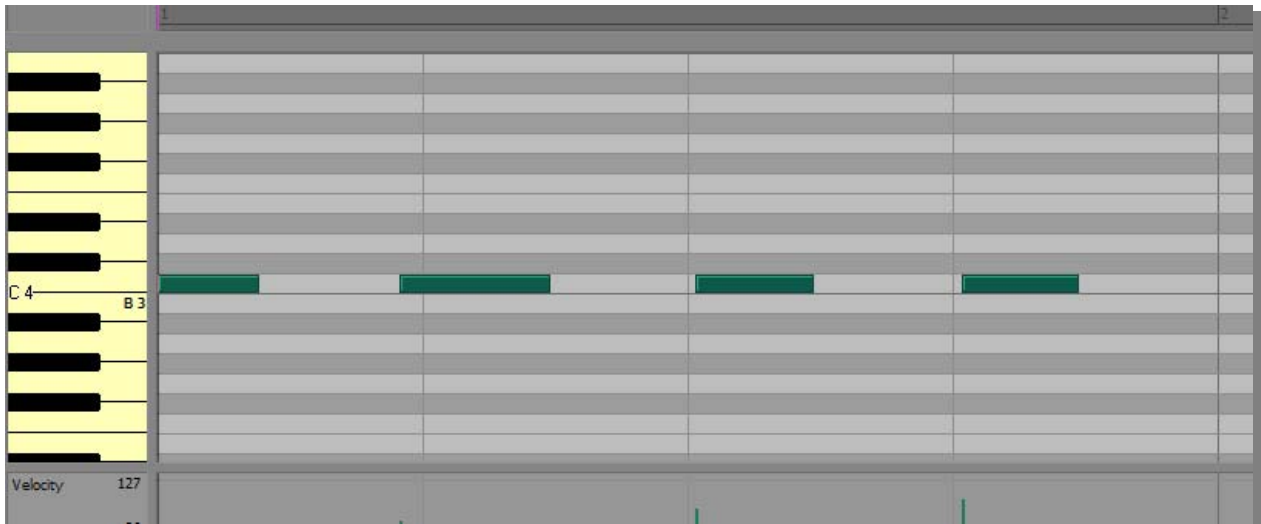
## QUANTIZING A MIDI PERFORMANCE

Once a MIDI performance has been recorded, the notes can be quantized, or aligned to bars, beats or divisions of beats. Quantizing can tidy up a performance and make it sound more accurate. With a MIDI region selected, type 'Q' to bring up the Quantize window.



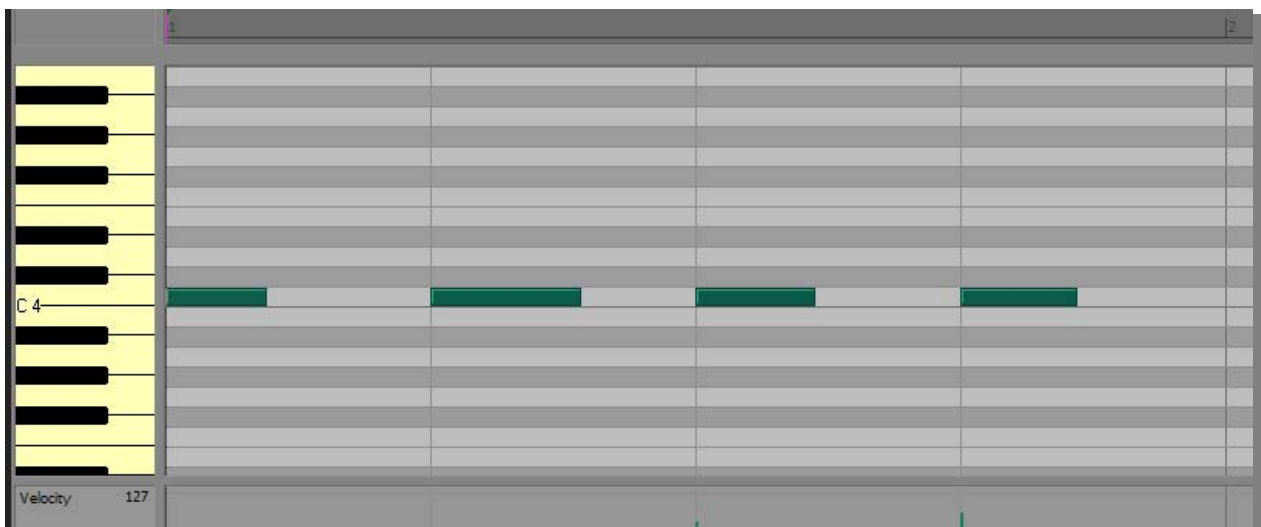
The 'Duration' value determines the division of the grid that the notes will be aligned to. In the above example, MIDI notes will be moved to the nearest 16<sup>th</sup> note.

It is possible to adjust how strong the quantisation is applied to the notes by changing the 'Strength' setting under 'Options' in the Quantize menu. Here are four notes recorded into SONAR:



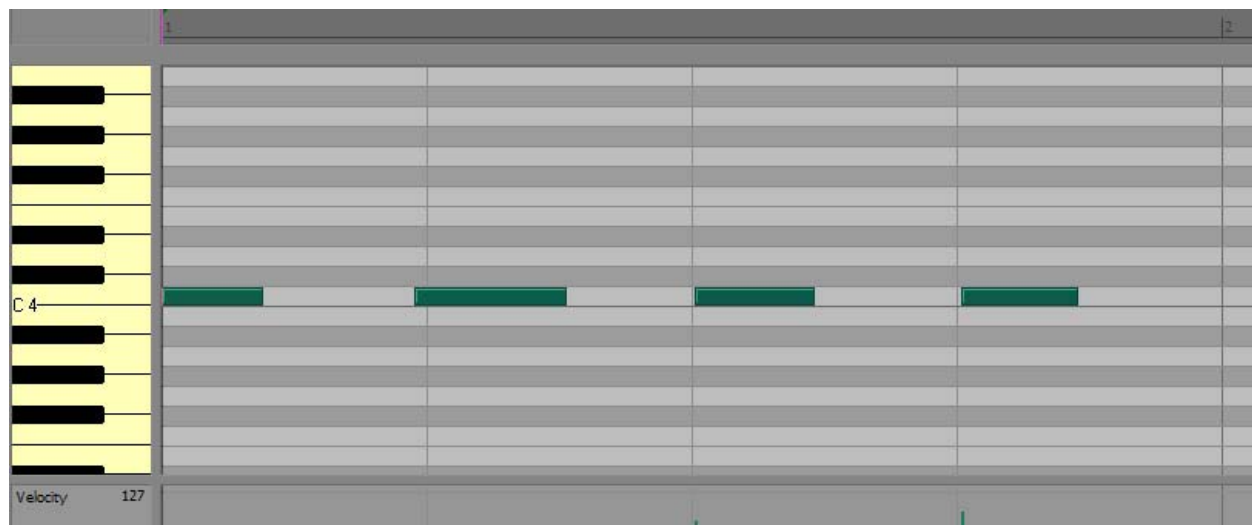
Notice that the first note is exactly on the first beat, the second note is before the second beat and the third and fourth notes are after their respective beats.

Quantizing this selection with Strength set to 100, locks the notes to their closest beats, as seen below:



While quantising creates very accurate performances, they can sound robotic as humans very rarely play exactly on the beat.

Here is the same region quantized with a Strength setting of 50:



The notes have been moved towards their closest beats but not locked exactly to them.

## QUANTIZING A MIDI PERFORMANCE DURING RECORDING

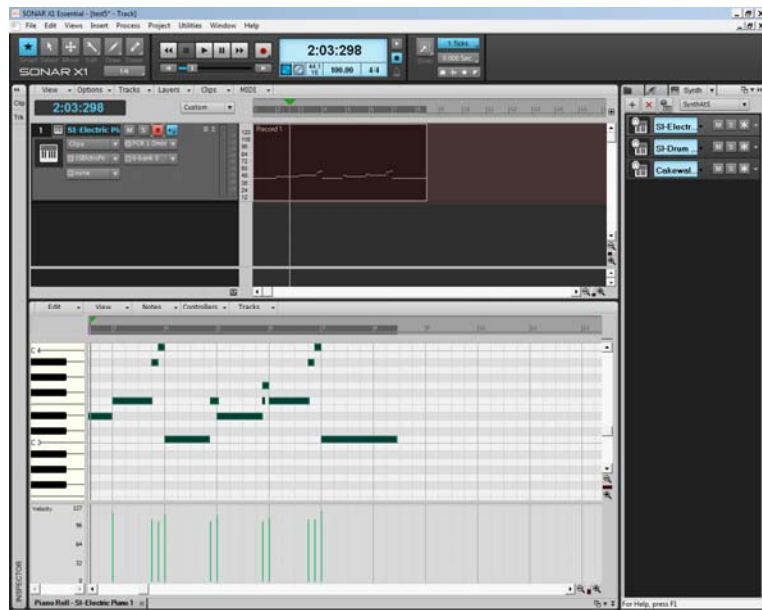
SONAR allows notes to be quantized during recording. To set this up, select the relevant track and maximise the Inspector panel by typing 'I' on the keyboard.



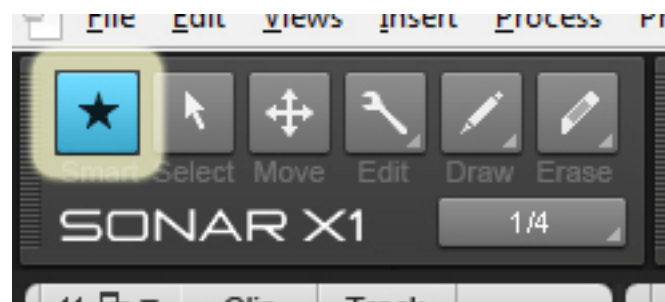
1. Click the MIDI tab to inspect the track's MIDI properties.
2. Enable Input Quantize by clicking the button. The drop down menu sets the resolution of the quantization. In the example to the left, notes will be locked to the closest quarter note.
3. When Input Quantize is enabled, the record button will display a 'Q' as a reminder.

## EDITING A MIDI PERFORMANCE

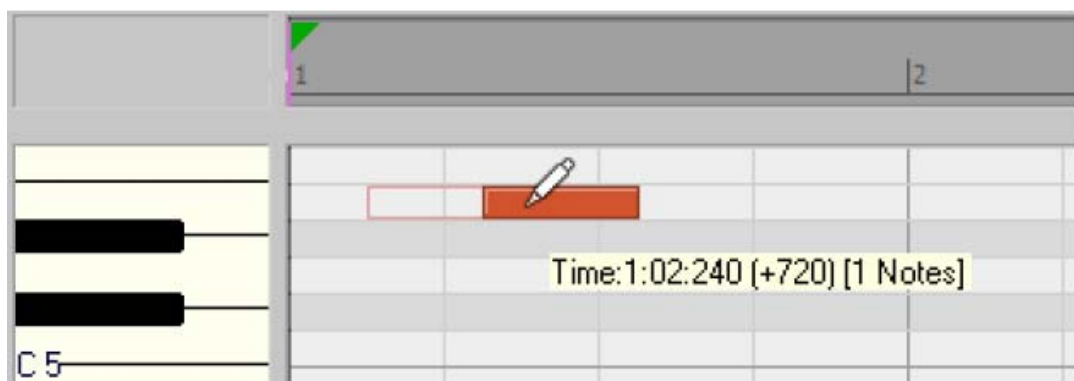
SONAR allows notes to be quantized during recording. To set this up, select the relevant track and maximise the Inspector panel by typing 'I' on the keyboard. This maximises the Multidock, where the MIDI editor resides.



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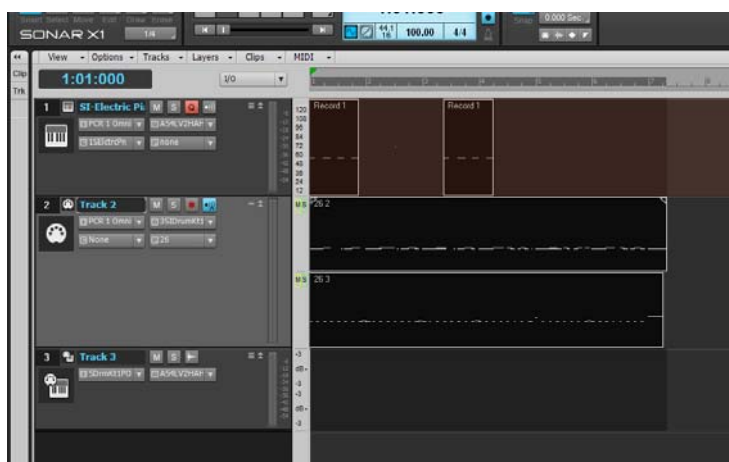
Selecting the Smart Tool from the Control Bar allows a number of different editing actions from the one tool.



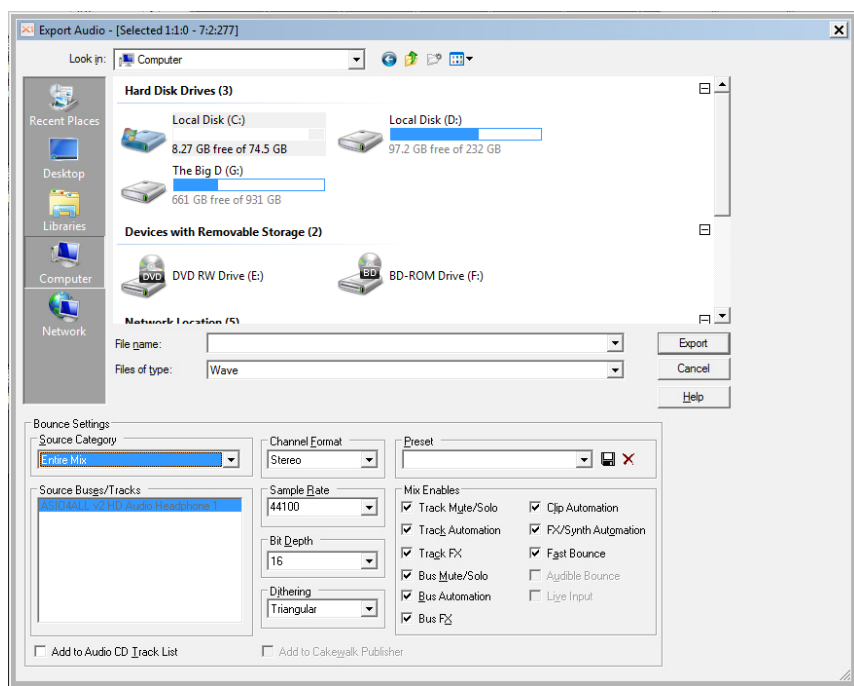
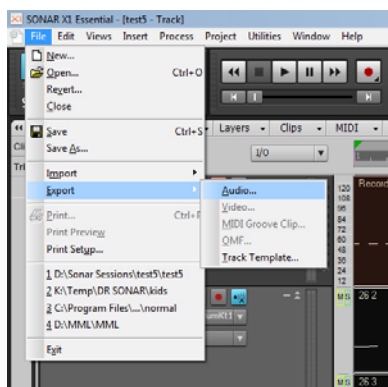
Action	Smart Tool
Draw a note	Hold ALT and click
Adjust start time	Click on left edge of note
Adjust note duration	Click on right edge of note
Adjust velocity	Click on top edge of note
Adjust note pitch	Click on bottom edge of note

## EXPORTING AUDIO

When you have finished your track, use Ctrl-A to select all of your regions. The selected regions will darken to confirm the selection.



Go to the File menu and choose Export then Audio...



The Export Audio window allows you to name and select the destination of your finished song. Under the 'File of type' drop down menu, you can choose the type of file which will be rendered. In the example above, a Wave file will be created.

Under 'Channel Format' I can choose the sample rate and bit depth. The example above is being burnt to CD so I have chosen 44100Hz at 16 bit.

When the settings are correct, click 'Export' to create a file of your music.