Q&A FOCUS

Drum machines

YOUR QUESTIONS ANSWERED

Mac PC This month we've drummed up the answers to your beats-related techincal and creative questions...

Beat goes on

Q How can I get the patterns from my old hardware drum machine into Sonar? I desperately want to use my old beats, I don't fancy doing them all over from scratch and I reckon I should be able to do it with software, but I'm damned if I can figure out how to get the sounds in there!

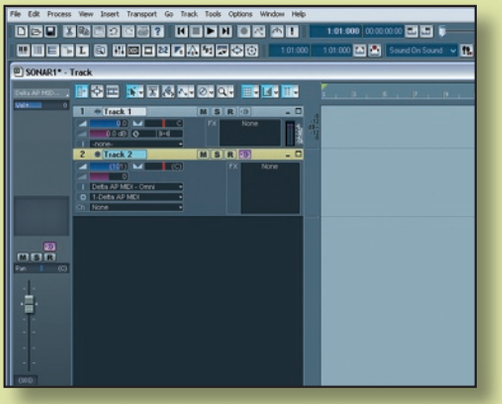
Alex Baden

A More than a few of us here at **cm** have still got hardware drum boxes lying about and have faced this very same dilemma. If your drum machine has MIDI input and output ports, then getting your patterns into Sonar is no problem at all. All you need to do is set your drum machine's **Sync** function to **External**, then make sure that Sonar is sending its MIDI Clock signal to the same MIDI port that your drum machine is connected to. Create and arm a MIDI track for recording. Now, when you hit record in Sonar, your drum machine should start playing, although you may have to first put it in **Play/Pause** mode (consult the manual for your particular unit). Sonar will dutifully record every note.

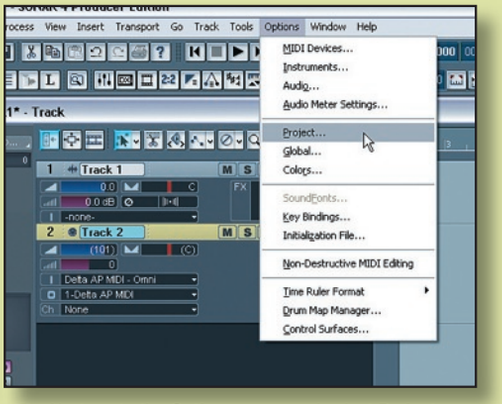
Obviously, this will only record the patterns themselves into Sonar. Y hardware drum machine as a tone module, triggering it from Sonar, or you could use the patterns you have recorded to trigger a software drum machine.

If you want to use the sounds from your hardware beatbox in your plug-in drum machine, you will need to record the individual drum hits onto your hard drive and edit them with an appropriate sample editor. Then you can import them into your software instrument of choice. They will have to be mapped in the software so that they're triggered by the same MIDI note numbers they responded to on the hardware device.

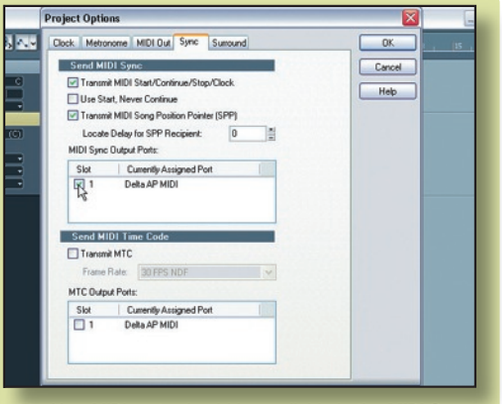
STEP BY STEP Setting Sonar up to send MIDI Clock



1 To record an external drum machine's patterns into Sonar, the hardware device must have MIDI inputs and outputs. Choose the pattern you want to record and note the tempo. Now, create a project with at least one MIDI track in Sonar. If you like, you can adjust the tempo to match that of your drum machine pattern. »



2 Next, go to the **Options** menu and select **Project** from the list of available options. A dialog will open up with tabs along the top, one of which is labeled **Sync**. Click on that tab to bring up the **Sync** dialog. »



3 Your MIDI ports should be available in the **MIDI Sync output ports** box. Click on the port your drum machine is connected to. If you want to send a Song Position Pointer to the drum machine, check that box and tell Sonar what sort of SPP to send.

Why bother?

Q I already have a sampler, so why would I need a drum machine? Are they not merely sample players? Is there any benefit to playing my existing drum samples in a drum machine?

Geoffrey Symonds

A True, many drum machines are merely sample players in a funky disguise. However, there are a number of benefits that can be gained by using a dedicated drum machine plug-in. First, they are specifically designed to work with one-shot percussion. Most of them have a sort of 'pad' layout, in which each note (or drum) is given it's own pad. This makes editing single drum sounds much easier than in a sampler. If you've ever tried to locate a single drum sample in a keyboard-based sample map, you'll understand what we mean. Furthermore, drum machines often have included effects and filters that are specifically designed for working with percussion. In addition, a dedicated drum machine will offer easy velocity-layering, choke functions and other editing tools designed for working with drums. Finally, many software drum machines these days have built-in synthesizers aimed specifically at creating percussion sounds not from samples, but by analogue or FM synthesis.

Too many outs

Q When I open up my drum machine, I get loads of outputs. Do I really need all of these?

Ken Bielek

A In most modern productions, drum sounds are recorded onto separate tracks so that they can be individually treated. For instance, the snare might demand a different sort of reverb to the kick. For this reason, most drum machines offer individual outputs. You can easily send any onboard sound to its own channel for treatment.

All-in-one

Q I come from the old school of hardware drum machines. All of mine had built-in sequencers. However, I can find no such thing on the software drum machines I've tried. What good is it if I can't produce my own beats?

Zachary Hedlund

A Since most software drum machines are made available as VST, AU, RTAS, or DX plug-ins, it's usually assumed by the developer that you're using them in a host sequencer/DAW such as Cubase SX, Sonar, Tracktion or Logic. That host program will have some facility onboard for creating your patterns and entering notes, velocities and other information. Some of them even have dedicated drum editors designed specifically for creating beats (more on this a bit later).

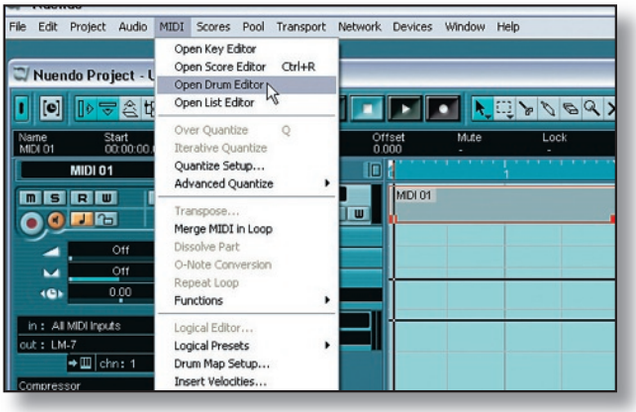
SOME HOSTS HAVE EDITORS DESIGNED FOR CREATING BEATS

Other programs, such as FL Studio, also offer the familiar step-based 'drum machine' system.

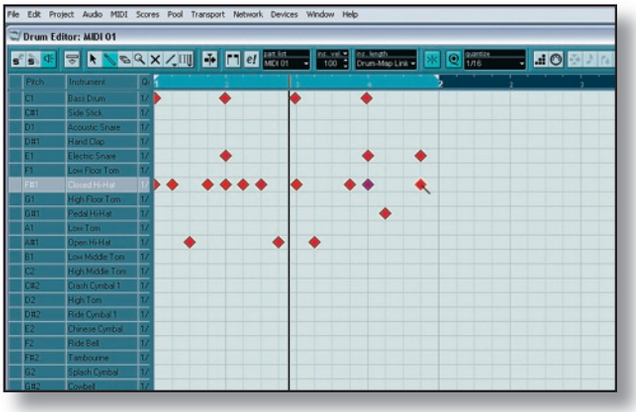
Rest assured that you are not alone in your desire for an all-in-one package. The ReDrum device in Propellerhead's mighty Reason package has a built-in sequencer, and we can't count the times we've heard pleas for this device to be recreated as a dedicated plug-in. Still, some developers have begun to catch on. Glaresoft's iDrum (**www.glaresoft.com**) has a built-in sequencer, as does Sonic Charge's Microtonic (**www.soniccharge.com**). These lock to your host sequencer's tempo. It would be remiss of us not to point out that Image Line's hugely popular FL Studio began life as a software drum machine many, many moons ago. As such, it still stands as an excellent tool for creating beats and patterns. You can even use it as a VSTi, so you don't have to give up your host of choice.

STEP BY STEP Using the Drum Editor in Nuendo

1 Some DAWs have dedicated drum editors. Steinberg's Cubase SX3 and Nuendo are no exception. To use it, first launch an instance of a drum machine or sampler. Here we've opened Nuendo's LM•7. Then create a MIDI track and assign its output to the drum machine. »



2 Next, locate the **Open Drum Editor** command in the **MIDI** menu. Click on it to open the Drum Editor. You should now see an editor with the names of the individual drums running down the left-hand side. In our case, they're assigned to a standard General MIDI keymap. You can also create your own custom maps. »



3 By using standard editing tools such as the brush (which amusingly looks like a drumstick), eraser, etc, you can enter notes in the grid for your drums. The notes can be forced to snap to the selected quantize value and you can edit the velocities for each drum individually.

SR-202 sounds

Q I am using the SR-202, but the sounds that come with it are not the sort I want. How can I get more? I try to load my own sounds in, but they don't seem to work. I get errors that say something about the wrong format.

Darren Cressenti

A One of the coolest things about sample-playing drum machine plug-ins is the ability to 'roll your own'. We suspect you might be making the common mistake of trying to load samples by using the same **Load** button used to import SR-202 kits. You need to use the **L** buttons on the individual pads to import samples. Keep in mind that the SR-202 makes use of 16-bit mono WAV files. Attempting to load anything else will earn you an empty drum pad. It's a simple matter to use an audio editor to convert a stereo sample into a mono sample (although some only allow you to do so with an export function). Watch our DVD for new drum sounds – there are loads on there this month, in fact. If that isn't enough, there are millions of them all over the net. It's safest to get them from a known sample provider to avoid copyright hassles.

Program phobic

Q I really can't stand programming drum machines, but I like the flexibility that comes with having all those sounds. I'm a drummer and it is frustrating entering my beats one note at a time on a grid. Can I use recordings of myself playing to program them, or at the very least as part of the song?

Art Welsh

A Yes, you can, but it might not be as easy as programming them from scratch. There are a couple of ways to go about getting your own performances into your computer. One of them is expensive and the other is fairly inflexible but can come into use with a bit of work.

The first method is to play rhythms directly into your DAW with MIDI drum pads. Unfortunately, these can be costly. A full kit that meets professional standards will cost thousands. Yet there are less expensive alternatives: Roland's HandSonic is a single divided pad that can be played with your hands, while their SPD series can be played with sticks or hands. Neither of these will give you the realism of a pro MIDI kit with a dedicated controller for each drum though.

▲With a beatslicer like Intakt, you can take total control of your drum loops

The second method is to use recorded loops of yourself playing your own kit. Of course, this assumes you have the ability to get a decent recording of that performance. This is not an easy task, but it's one that we can help you with. See our cover feature (*101 Recording and Mixing Tips*, p30) for lots of professional tips on achieving good recordings. There's a whole section just for drums!

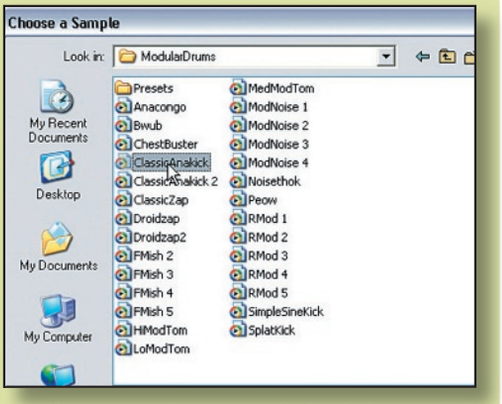
Once you've recorded your performances, you can then edit them into bite-sized loops of one or more bars. Having done that, they can be dropped into your host program and arranged just as if they were sequenced patterns. Some DAWs have built-in support for loops that will allow you to force them to the project's tempo. Alternatively, you can make use of a beatslicing plug-in such as pHATmaktik Pro or Intakt to perform the same duties.

The one drawback to working with drum loops is that they are somewhat inflexible. For example, if you decide that the snare is not tuned to your liking during mixdown, you'll have to go back to the drawing board. Plug-ins such as those mentioned above can be effective in gaining control over the individual elements in a loop, but

STEP BY STEP Loading a sample into the SR-202

1 Loading a sound into Computer Music's SR-202 drum machine (yours for free on the DVD-ROM) is simplicity itself. First, you must load an instance of the plug-in into your VST host of choice. Here we've opened it in Tracktion. »

2 A common misconception that people often have is that samples can be loaded from the Kit **L** and **S** buttons at the top of the interface. Those buttons are only used to load complete kits in .202 format. Look closely at the screenshot. See where that cursor is? On pad 1's **L** button. Click on that button to load a sample. »



3 You can now choose a sample from the browser. The SR-202 can load only mono 16-bit WAV files. Use an audio editor to convert stereo to mono if you need to. Once you've imported all of the samples you like and edited them to taste, you can save the entire kit in .202 format using the **Kit** commands.

you are still pretty much stuck with that original recording.

However, once you've made your loops and imported them into a beat-slicer, you can (with a little patience) put them to use with your drum machine. You see, the previously noted beat-slicers examine your loop, detect the transients and then slice it up according to where those transients occur. Once this is done, they generate a MIDI pattern based on the results, with each slice representing a MIDI note.

Normally, the slices are then assigned to notes on your keyboard (or piano roll) with the first notes at the left-hand side of the keyboard, working their way up. The MIDI pattern is used to trigger these newly assigned slices. However, no-one says that you can't use the same MIDI data for triggering samples from your drum machine plug-in. It'll take some dragging around in your MIDI editor to make it happen, since the notes of the sliced beat will not correspond to the pads of your drum machine. This is known as 'stealing the feel', since it uses the genuine performance, but applies it to different sounds.

The most practical advice though? Get good at tapping out rhythms on your keyboard.

Faking it

Q I can't seem to get a realistic sound from the CM-505 drum machine. My mate has an MC2000, and his drums sound cool. Am I doing something wrong?

Kenneth Ferguson

A We assume that you mean your mate has the Akai MPC2000. Well, there's a distinct difference between the MPC and the CM-505. The former is designed to work with sampled drum sounds, while the latter is a dedicated drum synthesizer. The CM-505 is conceived as a way to create electronic drum sounds from the ground up. It's best suited for tasks that demand a synthetic sound (think Kraftwerk or techno).

▲The CM-505 is an excellent source for synthetic percussion, but it certainly wouldn't be your first choice for acoustic type sounds

As much as we like electronic percussion, there simply is no way to make a synthesized drum sound exactly like a sampled drum (though it is somewhat easier to do the reverse). If you want to work with samples of real drums, then you'd be better off using a sample-based drum machine such as our own SR-202 (it's on the cover DVD as well, not too far from where you found the CM-505). If you need more than that, then you might like to take a look at some of the commercial drum machine plug-ins out there, such as FXpansion's DR-008 or LinPlug's RMIV.

Chokey cokey

Q What the hell is this 'choke' function good for? I don't hear any difference in the sound at all! Come on, help me out, cm!

Ryle Feld

A The choke function found on drum machines doesn't make any sound itself. It's a performance tool used to simulate the way a real drummer would play. For instance, a drummer can't play both an open and closed hi-hat at the same time (well, not on the same hi-hat, anyway). If a drummer hits the hi-hat when it's open, it rings out. If it's closed when he strikes it, it produces a shorter and drier tone. Closing the hi-hat while an open hat hit is ringing out will 'choke' off the sustained portion of that hit. Operating the hi-hat's pedal while playing a rhythm can produce many interesting percussive effects, and your drum machine's choke function simulates this playing style. If you assign any two sounds to the same 'choke group', you won't be able to play them simultaneously. When played in succession, the second hit will choke off the first. When used with discretion and skill, it can add loads of realism to your rhythm patterns.

Built-in beats

Q My old Boss DR-550 has a bunch of preset beats. I am awful at making beats. Do software drum machines have them built-in? Ta for the help!

James Blamer

A At first, most software drum machines didn't come with built-in patterns. It was assumed that you'd be creating your own, or would be using a MIDI file from another source. MIDI files are really pre-composed, prearranged performances stored as MIDI data. These files can be imported into your sequencer, where they can then be edited and arranged to taste.

Nowadays, more and more drum machines are being bundled with beats of their own – Spectrasonic's Stylus RMX being a good example. If your drum machine doesn't come with beats, we'd suggest checking out Keyfax's excellent Twiddly Bits series, which, for a nominal fee, will give you access to some of the best drummers on the planet. Check 'em out at **www.keyfax.com**. Another thing worth bearing in mind is that we also include MIDI files on our cover DVD from time to time, as well.

In the grid

Q I see a lot of software recorders that mention a 'drum grid'. Is this anything like a drum machine? If my sequencer has a drum grid, is it possible for me to use that instead of shelling out for a drum machine? I appreciate your advice!

Michael MacBethi

A A drum grid is not a drum machine. It doesn't feature any sounds at all. It is, rather, a 'piano roll' or 'matrix' type of MIDI editor designed specifically for use with drum machines. The drum grid works in conjunction with the sampler or drum machine's keyboard map, and allows you access to a number of specialised tools to enter, edit and arrange drum patterns. You'll still need a drum machine or sampler to make use of the drum grid. Luckily for you though, you already have several on the disc that came with this very magazine.

COMING SOON: BASS!

In issue 85, our experts will be solving your **bass-related** problems. Mail your bottom-end sound design, recording and programming questions, no matter how basic or advanced they may be, to **ronan.macdonald@futurenet.co.uk**.