



Review: Cakewalk SONAR 8 Producer Edition by Rick Paul - 8th January 2009 -



It happens pretty much every year at the same time. No, I'm not talking about the arrival of Santa Claus, but rather the introduction of the latest, greatest (we hope anyway) version of Cakewalk's flagship SONAR DAW. This year was no exception, and SONAR 8 Producer Edition was announced a bit before the Fall AES show, then exhibited at the show and shipped to customers all in fairly short order thereafter. In fact, there have already been a couple of patch releases by the time of this writing.

While it might be tempting to make a comment like, "same old, same old," at this point, Cakewalk's slant on SONAR 8 took a decided left turn from the bullet list of bells and whistles that frequently dominate new feature lists for SONAR (and its competitors, for that matter). Sure, there were enough bells and whistles to keep those of us who love new toys happy. We'll take a closer look at those in a bit. The heart of the SONAR 8 upgrade, though, was the work Cakewalk did "under the hood" to improve the everyday experience of SONAR users in areas like performance and stability. That's the sort of thing that may not look sexy on a marketing bullet list, where it constitutes exactly two bullets, but warranted an entire white paper to detail "[the fine print](#)". More importantly, though, it is the sort of thing that is likely to make SONAR 8 a "must have" upgrade for anyone using any past version of SONAR, whether or not they find the bells and whistles that make for great marketing bullet lists of interest.

Let's take a look at Cakewalk's latest SONAR release. (See also our earlier reviews of [SONAR 2 XL](#), [SONAR 4 Producer Edition](#), and [SONAR 7 Producer Edition](#).)

Background

The bullet list of new features in SONAR 8 Producer Edition is actually quite long. I'll refer you to the [Cakewalk web site](#) if you'd like to read the detailed list. However, here's a condensed rundown -- a bulleted list of the bullet list so to speak:

- **New features, optimizations, and workflow enhancements:** Loop Explorer 2.0, dedicated instrument tracks, performance optimizations, user interface optimizations.
- **Editing enhancements:** clip selection groups, aim assist cursor, split and mute tools, free edit tool.
- **Recording enhancements:** live effects and softsynth rendering, anytime recording.

- **Mixing enhancements:** exclusive solo mode with solo override, bus inputs QuickGroup command, mono hardware inputs.
- **Control enhancements:** transport updates, control surface enhancements, Track View and Console View sync.
- **Additional enhancements:** enhanced sample rate conversion, Vista audio, QuickTime 7 import/export.
- **Workflow enhancements:** insert send assistant, updated ACT presets, drum maps, and plug-in presets, new drum patterns for the integrated step sequencer.
- **New instruments:** Beatscape loop performance instrument, Dimension Pro, TruePianos Amber VSTi module.
- **New effects processors:** TS 64 Transient Shaper, TL-64 Tube Leveler, Channel Tools, Native Instruments Guitar Rig LE.

Of course, these are only the latest additions and improvements to what was already a mature, stable DAW.

SONAR 8 is still a Windows-only application. The 32-bit version of SONAR 7 is supported under Windows XP and Windows Vista. The 64-bit version of SONAR 8 is supported only under Windows Vista. Mac users who want to run SONAR will need to do so by running Windows under Mac OS X with Boot Camp.

The minimum hardware system requirements Cakewalk lists for SONAR 8 include an Intel® Pentium® 4 1.3 GHz or AMD Athlon™ XP 1500+ or higher CPU, 512 MB of RAM, 16-bit color graphics with a minimum of 1024 x 768 resolution, 200 MB of disk space for the core program (on any type of hard disk), and a DVD drive (dual layer capability is required for installation of SONAR 8 Producer Edition content). Cakewalk recommends your system include an Intel® Pentium® 4 2.8 GHz [EM64T] or AMD Athlon™ XP 2800+ or higher CPU, 1 GB or more of RAM, 24-bit or higher color with at least 1280 x 960 resolution, 30 GB of disk space for the program and contents on EIDE/Ultra DMA (7200 RPM) or SATA hard disks, DVD drive with dual layer support, and available web server space with FTP access privileges. If that last recommendation sounds a bit odd, note that it is intended for use of Cakewalk Publisher, which allows uploading audio recordings produced in SONAR (or elsewhere) to your web site. That would not be needed for most SONAR uses. One thing worth noting on the hardware requirements is that, disk space needs aside, if you were happily running SONAR 5, 6, or 7 on your current system, the performance improvements in SONAR 8 will likely result in your being even happier running SONAR 8 on that same system.

The U.S. list price for SONAR 8 Producer Edition is \$619, with current street price just under \$500. Upgrades from SONAR 6 Producer Edition go for \$179, and various other upgrades are available. There is also a SONAR 8 Studio Edition, whose main differences from SONAR 8 Producer Edition are the lack of surround sound and the omission of number of other extras (e.g. POW-r dithering, various software instruments, various plug-ins -- see the [SONAR 8 Producer Exclusives](#) web page for the full list). SONAR 8 Studio Edition lists for \$369, with a street price just under \$300. SONAR 8 Studio Edition upgrades from any prior version of SONAR Producer or Studio go for \$99.

The contents of the SONAR 8 Producer Edition package include the 206-page *SONAR 8 Producer & Studio User's Guide*, a 1-page "Read This First!" document, and a squarish cardboard box with the four DVDs containing the software, each in a paper media envelope. You will need a dual layer-capable DVD drive to read some of the extra content media, but the basic SONAR software installation itself is on standard 4.7 GB DVD media. The media also contains an Adobe Acrobat (PDF) file of the entire, 1180-page *SONAR 8 Reference Guide* for anyone who might want that. (SONAR's on-line help facility covers the same material, so it is more a question of how you want to use the information than the content itself.)

I was pleasantly surprised that my 2004 vintage Toshiba DVD+/-RW drive did read the dual layer media. It may be worth checking your drive's specifications if you have an older drive and want to be sure you can read the additional content, such as the sample libraries for Dimension Pro and Beatscape. I was less pleasantly surprised by the media packaging as I have a pet peeve about paper media envelopes (which greatly increase the likelihood of getting fingerprints on the media during handling), and Cakewalk has typically used much classier packaging. With many products I wouldn't care so much about this, as I'd just replace the envelopes with slim-line or standard jewel cases. However, with 4-disc set like this, doing that would increase the odds of pieces of the packaging getting separated. Also, because of the way Cakewalk has packaged extra goodies with SONAR over time, being able to

reinstall all the components in the event of a disk replacement or system upgrade has required keeping all the older SONAR media and serial number information, going back even beyond SONAR 1.0 (i.e. since the MP3 encoder license goes back to Cakewalk Pro Audio 9, and requires reading that CD if the software needs to be reinstalled/reauthorized from scratch). Thus, longevity of the packaging is of some concern, and CD jewel cases and DVD cases inspire more confidence than a cardboard box containing multiple paper envelopes for the actual media.

Installation of the software was, by and large, standard Windows fare. Cakewalk has improved the main SONAR installation program by providing several preset templates for what you want to install, such as "Minimal", "Recommended", and "Custom", as well as additional presets for softsynths, audio plug-ins, and more. These were handy in that choosing one of these (e.g. "Recommended") did not commit you to a specific set of installations, but rather provided a starting point, from which you could check or uncheck individual components to tailor your installation as needed. That might sound on the surface like it the same as checking "Custom". However, the difference is that it gets you to a starting point much more quickly, as you can pick the preset that is closest to what you need, then modify things from there, rather than having to start with either most everything unchecked or most everything checked. Besides the main SONAR installation disc (which also included most of the basic softsynths and plug-ins), there were separate discs for Beatscape (and its loop library), Dimension Pro (and its basic sample library), and an additional content disc (with additional Dimension Pro libraries plus sample SONAR projects for study).

I encountered a few minor installation-related issues. First, the main SONAR installer hung near what I'm pretty sure was the end of the installation. I let it go for over half an hour before deciding to kill it off, and I did not detect any ill effects, so I'm not sure what was going on. When the Beatscape installer ran, I must have glossed over the part where it tells you where it will install the VST plug-ins, thinking it was the standard place most Cakewalk VST plug-ins go, but only learning later that it was not. In particular, when I went to apply the update to Beatscape that was already available by the time I installed the basic software, it couldn't find the Beatscape DLL, and refused to upgrade the software as a result. I had to look around my system to find it -- it had installed it under a directory that somehow ended up being a default VST directory on my system, and which happened to be under my Toontrack plug-ins directory! Manually moving Beatscape to a more intuitive location, then pointing the upgrader to that location did the trick. I would have also preferred if this version of Dimension Pro had installed the latest version of the software, which has been around for quite awhile now. However, it installed V1.0, so the upgrades needed to be located on Cakewalk's web site, downloaded, and installed. The additional content disc did include the free Dimension Expansion Packs 1 and 2, so at least it was not necessary to also download those from the net (they are quite large).

Cakewalk remains a class act on the software protection front, being one of the few companies that truly trusts their users with a software protection mechanism that doesn't require a dongle or the kind of hard disk-based authorization that will need a different key anytime you have to move the software or reformat your disk. As with recent versions of SONAR, SONAR 8's software protection involves a serial number and an authorization key tied to your e-mail address. Once you get the authorization key, it doesn't matter if your e-mail address changes, because you can still use the same e-mail address and authorization key if you ever need to reauthorize -- i.e. it isn't checking your e-mail address behind the scenes or anything. Just make sure and remember to write down those two extra pieces of information and keep them with the serial number in case you need to reauthorize. Cakewalk even provides spaces on the serial number sticker for writing down these values. This brings up my other beef with the current SONAR disc packaging. The sticker with the serial number and spaces for the other authorization fields is on the outside of the cardboard box with the media. This makes it susceptible to the effects of light and handling, whereas the sticker for recent releases was on the inside of a DVD case, where it would be protected from light and most handling considerations. If this concerns you, I'd suggest copying down the information in a better-protected place, be that inside the front cover of the manual, tucked away in a file folder of software authorization information, or whatever you personally prefer.

This review cycle was begun using SONAR 8.0.1, the first patch release, which had already been issued by the time I received the software. A second patch release, SONAR 8.0.2 was issued about a week later, and that was used for the rest of the review. My review system was running Windows XP SP3 on a Core 2 Duo E6600-based system with 4 GB of RAM, and an E-MU 1820M audio and MIDI interface.

Let's take a closer look.

Quest for the Optimum

Let's start with what is almost certainly not sexy, in terms of the kind of features that make marketing folks drool, but which will almost undoubtedly be the highlight of the SONAR 8 release for many, if not most, existing SONAR users. To put it in simple language, SONAR 8 just runs better than previous versions of SONAR. There is a long list of specific performance and user interface optimizations the Cakewalk engineers have made, but, since I can't get under the hood of SONAR myself, I'm not going to recite a list you can easily get directly from Cakewalk. (I do, however, recommend you check out their ["The Fine Print"](#) white paper, which discusses many of those changes. Cakewalk has also published some [benchmark comparisons of SONAR 8 versus SONAR 7](#), but the bottom line isn't how it runs on an average of multiple benchmark systems, but rather how it runs on your specific system.)

I will, however, note that, at least on my system SONAR's behavior was snappier in general, from project loading time to the responses to user interface manipulations. I could also run much more reliably at lower ASIO latencies than I've been able to do in the past. From having read Cakewalk's documentation on these changes, it is my expectation that many of the internal optimizations will be of greatest benefit to users running high track counts at low latencies, but most, if not all, of us are likely to see some improvements.

I have heard some users report that SONAR 8 has been more stable for them, as well, for example crashing less. I can't report any such observation on my system for two reasons. First, SONAR 7.0.2 was already quite stable on my system, so it would be tough to observe that it SONAR 8 crashed less when SONAR 7 really didn't crash, for the most part. The second reason relates to my "for the most part" qualification in that last sentence. I have found some specific scenarios, especially in the presence of Native Instruments' KONTAKT 2 Player, where SONAR 8 would crash, either highly predictably or with at least greater than average odds. One such scenario was when freezing or otherwise rendering KONTAKT 2 Player tracks with SONAR's Fast Bounce engaged. While not every project would exhibit this crash, most did, and only fairly simple projects (as in ones I might try to build to recreate the issue) did not. Another such scenario was when tracking KONTAKT 2 Player parts, especially using multiple MIDI continuous controllers in parallel, with SONAR's multiprocessor mode engaged, where SONAR would either crash or "poof" (i.e. disappear with no error message). In the former case, the workaround was to turn off Fast Bounce when bouncing KONTAKT 2 Player tracks. In the latter case, the workaround was to turn off SONAR's MP mode when tracking KONTAKT 2 Player parts. These two scenarios are still issues as of SONAR 8.0.2, and the workarounds still work as in SONAR 7.0.2.

Some of the internal optimizations have also led to providing new functionality. For example, among the benefits that have come from Cakewalk's attention to enhancing the ASIO subsystem is the ability to change drivers -- even driver modes (e.g. ASIO to WDM/KS or vice-versa) -- without having to stop and restart SONAR. If you've ever needed to experiment with a different driver for any reason, and have a large project, especially one with lots of large, memory-resident samples, loaded, you know how much of a hassle it was to, for example, change from WDM/KS mode to ASIO mode, stop SONAR and restart it, go back into the Audio Options and possibly select a different ASIO driver than the one that came up by default, stop SONAR and restart it again, then finally reload your large project and try it in ASIO mode. Then, if it made no difference, it was time to do things in the reverse direction to return to your original WDM mode. No more! Now you can just keep your project loaded, go into Audio Options and change modes and drivers as needed, let SONAR run its profiling if necessary (only if you are changing from ASIO mode to another mode), then hit Play and try the new mode. This isn't the sort of thing most people would use every day, but it can be a big help when troubleshooting driver-related issues.

Some of the changes made in this area were also prerequisites for feature level enhancements we'll be discussing below. Even without those enhancements, though, the SONAR 8's performance optimizations would make SONAR 8 likely to benefit every existing SONAR user.

Two Shall Be as One ... or Two

For those who use lots of softsynths in their projects, SONAR's new instrument tracks, which combine the most frequently used controls for both the MIDI and audio sides of a software instrument, will both save space and make operations more intuitive. After all, if we're using a softsynth for a synth bass, for example, we think of it as one instrument, despite there logically being both MIDI data and audio data flowing behind the scenes and needing to be controlled. Still, there are times where the added control afforded by separating out the tracks may be important, such as when working with a multi-timbral instrument playing multiple parts. Cakewalk addresses these considerations by making it possible to split and remerge the instrument tracks at any time, thus allowing you to either consolidate your view and controls or access additional functionality, depending on your needs of the moment.



Looking at an instrument track, it appears to be a hybrid. As long as the track is not frozen, you will see any MIDI data in the Track View's clips pane and a combination of MIDI and audio controls in the track controls portion of the track. (When the track is frozen, you will see its frozen audio clip in the clips pane.) For example, the track's input will be a MIDI device or "Omni" to respond to all MIDI devices, while its output will be an audio bus or device. Routing of a MIDI output to the softsynth and routing of the softsynth's audio output to the track's audio input still goes on behind the scenes. The user doesn't need to be bothered by those details, though, since they won't change as long as the same software instrument association is maintained. Similarly, there are some MIDI controls, like transposition, time sliding, and scale quantizing since the user is controlling those aspects of it in the MIDI domain, and some audio controls, such as output volume fader, panning, and metering, since those are more applicable to the audio domain. The FX bin is used for audio effects, which is generally what is desirable. However, what if the user wants to use MIDI effects? This is where the ability to split the track back into its MIDI and audio components might come in handy. Just split the tracks out, add the MIDI plug-in to the MIDI track's FX bin, set it as desired (and keep it open if you like), then run the Make Instrument Track operation to recombine the tracks into a single instrument track. The MIDI plug-in is still there and operating behind the scenes. It just isn't visible in the merged track.

In many ways, Cakewalk's implementation of instrument tracks provides a best of both worlds scenario, especially when you consider the flexibility to switch back and forth seamlessly between the hybrid instrument tracks and the separate audio and MIDI tracks. Speaking of which, users with pre-SONAR 8 projects may be happy to know that it is an easy matter to upgrade their old projects to combine the separate MIDI and audio tracks into instrument tracks. Simply go to either the MIDI or audio track for the instrument you want to combine, right click on it, and choose "Make Instrument Track" from the pop-up menu.

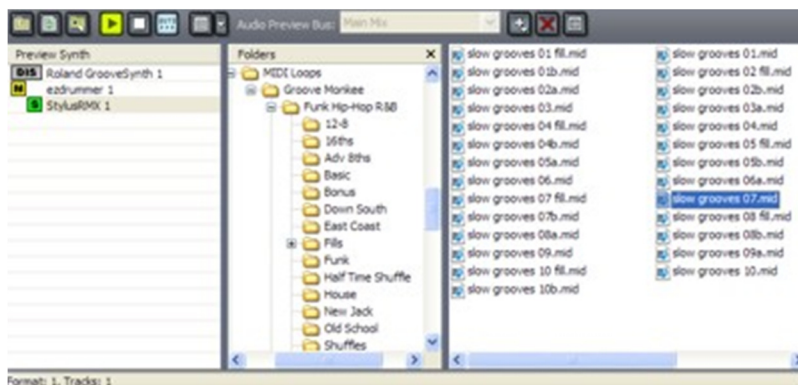
If there are limitations in this approach, they likely fall into two categories. The first is, if the hybrid track design choices, in terms of which controls to display and which controls to omit, don't line up with your personal preferences, you may need to either stick with the split tracks or do a lot of splitting and recombining. For example, if you frequently use MIDI plug-ins, and frequently want access to the MIDI plug-in bin, you would need to split the tracks so you can access the MIDI track directly. The second is what I consider to be a combination of bugs and design oversights. In the area of bugs, there seem to be some issues with track numbering math when multiple instrument tracks are located consecutively within a SONAR project. See the "Getting Loopy" section below for one specific example. As for the design oversights, I believe there are opportunities for additional integration that would

make things smoother, especially in the case of needing to split and recombine instrument tracks from time to time. For example, let's say I've got a Roland GrooveSynth track with a TR-808 patch, but I'm also using GrooveSynth tracks for other instrument sounds. So, instead of keeping the default "Roland GrooveSynth 1" track name for the instance with the TR-808 patch, I rename it "TR-808" and also assign a track icon to let me see it is a TR-808 part when looking quickly. Now I decide I need to use a MIDI plug-in on the track, so I split the track into its MIDI and audio components. The audio track still has its default softsynth icon and the name "Roland GrooveSynth 1 Output 1: Stereo". It would have been nice to have changes that intuitively apply at the instrument level apply to both component tracks. Another area I consider an oversight is that you can't insert an instrument track from the Track View in the same way you can right click to insert an audio and MIDI track. You can only do that by going to the Synth Rack and inserting a softsynth. That means, if you want to insert the instrument track above a particular track, instead of being able to position your cursor that the appropriate place to do that directly, you have to make a two step operation where you first insert the instrument track from the Synth Rack, then drag the newly inserted instrument track to your desired location.

To be fair, this is the initial implementation of instrument tracks in SONAR, and maintaining backward compatibility with the separate tracks, which does have benefits beyond just backward compatibility with old projects, does bring extra considerations. However, these are the sort of considerations I'd have ideally hoped would have been ferreted out in design reviews or beta testing, rather than still being here in the released product, no less a second patch release of that product. The bottom line is Cakewalk's overall design is good, and provides flexibility that would not exist, or would at least be more cumbersome to use, in a simpler instrument track implementation. However, at this stage, there are still some wrinkles that need to get ironed out.

Getting Loopy

A longstanding request from SONAR users has been to make MIDI loop previewing as easy as audio loop previewing has been all along. This has been a particular request from SONAR users who have also used Cakewalk's Project5 softsynth-based virtual studio program, which has long had integrated MIDI loop previewing. In the meantime, some SONAR users made do with external MIDI loop previewers, be it instrument-specific ones, like the groove browser built into Toontrack's EZdrummer®, or softsynth-independent products, like Toontrack's EZplayer® pro. While this may have lessened the urgency of providing an integrated MIDI loop browsing facility in SONAR for those users, most would still maintain that having an integrated MIDI loop previewing capability in SONAR was still highly desirable.



Cakewalk calls the enhanced Loop Explorer in SONAR 8 "Loop Explorer 2.0". Its key new feature is the ability to preview MIDI patterns through your virtual instrument of choice. A new left-hand pane in the Loop Explorer provides a list of the project's available softsynths, and you can choose which one will be used for previewing by clicking on the one you'd like to use. Alternately, changing the focus to the relevant track in SONAR's Track View will also change which softsynth is used for MIDI previewing. Note, though, that the change of preview softsynths does not take effect immediately, nor at the next loop boundary. Rather, it only takes effect once you change which loop is being previewed. Once you've found the loop you want, just drag it to the MIDI track for the relevant instrument to construct your arrangement.

The left-hand pane of the Loop Explorer also shows some basic softsynth status information, such as if that instrument is soloed, muted, or disconnected. This makes it easy to see instrument status at a glance, for example for troubleshooting purposes.

In general, this is a handy facility, and having MIDI loop previewing flexibly built into SONAR makes it easy to mix and match loops and instruments, which is the key reason for using MIDI loops in the first place. However, I encountered two issues when using this new facility, only one of which is actually a Loop Explorer consideration. The other greatly affects its use with instrument tracks.

In the first scenario, I was previewing some third party MIDI loops with three different drum softsynths, trying to decide which drum box to use for a hip-hop-oriented feel. I'd configured all three softsynths so I could simply alternate between them in Loop Explorer. It would have been handier to be able to just toggle the softsynth's name to switch immediately between modules, but having to change loops wasn't a big deal. However, when I switched to one of the softsynths, I noticed there was no sound, despite everything seemingly being configured properly and the MIDI loops' being played properly if they were dropped onto the softsynth's MIDI track. The issue turned out to be that the loops had been configured with data on MIDI channel 10, which is used in General MIDI as the drum track. The particular softsynth defaulted to using channel 1, but the SONAR MIDI track had also been configured to send information on channel 1, so everything was hunky-dory when playing the same loops from the MIDI sequence. However, it seems that Loop Explorer is sending its MIDI data directly to the softsynth, rather than through the routing of the MIDI track. The workaround was to configure the synth itself to receive on channel 10, then reset the MIDI track to do the same. This could have been more difficult, though, if it turned out that different loops were configured for different MIDI channels. That probably isn't likely with drum loops due to the GM standard, but it is conceivable it could happen with other instrument loops.

In the second case, I noticed that, when I dragged MIDI loops from Loop Explorer to SONAR's new instrument tracks (see above), sometimes the loops would seem to disappear, and would not play back. In other cases, sometimes the loop would show up on the wrong track altogether after it was dropped, and would play back from the wrong instrument afterward. While I initially thought I was just doing something wrong, once I split out the instrument tracks into separate MIDI and audio tracks, I discovered what was going on. In the cases where the loop just seemed to disappear, it was actually landing on the audio track for the instrument above the track I was targeting. In the cases where the loop showed up on the wrong instrument, it was landing on the MIDI track of an instrument track that was higher up in SONAR's Track View and track numbering. The issue thus appears to be some kind of track math error in the case where there are multiple instrument tracks in a row. For example, if the first three tracks were being used, the instrument track numbers would show 1, 2, and 3. Dropping a loop onto track 1 would result in the appropriate placement of the loop. Dropping a loop onto track 2 would result in the loop's being placed on the audio track associated with instrument track 1. Dropping the loop on track 3 would result in the loop's being placed on the MIDI track associated with instrument track 2. This suggests some hidden tracks are used in managing the instrument tracks, and things get a bit mixed up when there are multiple consecutive instrument tracks in the project. Splitting the instrument tracks out to separate MIDI and audio tracks provided a workaround, but this is a nuisance for projects that are highly softsynth-based in the sense that it defeats the purpose of having instrument tracks in the first place, making it much more difficult to pick out the correct track at a glance and taking up considerably more vertical space. Hopefully this bug will be fixed in the next SONAR 8 patch update.

For the Editor's Desk

If you spend significant time comping and editing, you know that small changes in workflow efficiency can add up to a good deal of time over the course of an entire project. It's not so much whether the tools at hand allow you to do a task -- where there is a will, there is almost always a way. Rather, it is how long it takes you to do that task given the tools at hand and your familiarity with them. A few extra mouse moves or clicks might seem trivial when looking at a single operation. If similar operations are carried out hundreds of times over the course of a project, though, all those little bits of time can add up to quite a lot of time. SONAR 8 provides several new and enhanced facilities aimed at streamlining editing workflow.



A new Aim Assist Cursor mode for SONAR's Track View provides a vertical line, as well as a precise time readout, to make it easier to see the precise position of the cursor in time, and in relation to visible attributes of the clips (e.g. audio wave diagrams, MIDI notes, clip borders, etc.). This makes it easy to line up the cursor precisely ahead of starting an operation that is highly sensitive to the cursor's position. An example might be importing a trimmed audio file with a sound effect, where you want that effect to begin at a precise point in time, be it within the overall timescale of the project or to align with events in other project clips. In the former case, the Aim Assist Cursor's time readout up in the time ruler area would be used to position the cursor precisely prior to right clicking and invoking the Import Audio operation. In the latter case, the vertical white line would be used for aligning the cursor with the reference events, before right clicking and invoking the Import Audio operation. Another example might be using this feature when needing to get very precise in making time-based (as opposed to clip-based) selections using the

Select tool or muting by time range using the Mute tool.

I find the Aim Assist Cursor helpful, and expect I will keep it engaged most of the time (I really can't see any downside at this point). However, I have to confess that, when I first saw this feature noted in a high-level bullet list, I was hoping for even more than it provides. In particular, I was hoping the aim assist information, especially the vertical line, would continue to track the cursor when moving clips around, and was also hoping it would also be applicable within the piano roll view when moving objects around. The vertical line could have proven extremely helpful when selecting a clip to move at a strategic position (e.g. the start of a transient) and wanting to slide that in time to align with another strategic position (e.g. the start of a transient on another track). This is one of those scenarios where I already have a way to accomplish what I need to do -- I set the Now Time to the target position, then drag the strategic location on the clip to be moved until it lines up with the Now Time's vertical line. However, having the aim assist line work while dragging (instead it stays at the location where you started the move of the clip), would have saved the time taken to reset the Now Time before the operation, as well as the time needed to set it back to where you want it to be afterward. The net is that I have mixed feelings on the Aim Assist Cursor. I like having the extra information it provides, and I can see a few operations, which I personally don't do very frequently, where it will be invaluable. On the other hand, had it kept moving during the course of a drag edit, it would have saved me significant time in most every project. I also believe that additional functionality would provide even greater benefit for those whom the current implementation will most fully benefit (e.g. sound effects editors and individuals who prefer comping based on time range to clip-based comping).

I The new Free Edit Tool provides an alternate way of quickly alternating between selecting by time and selecting entire clips. Using SONAR's Select tool, which defaults to selecting entire clips, selecting by time range can be accomplished by engaging the Alt key before clicking and dragging. The new Free Edit tool requires no modifier keystrokes. Instead, the Free Edit tool bases its use of clip- or time range-based editing on cursor position in relationship to a clip when you click the mouse. If you click near the top or bottom of the clip, the entire clip will be selected. If you click in the central area of the clip's vertical range, you'll be selecting by time range. If you do a lot of alternating between selection methods, this could remove the tedium of keeping your non-mouse hand ready to use keyboard modifiers.

SONAR 8 provides clip selection groups. The basic idea here is that selecting, or performing certain types of operations on, one clip in the group results in performing the same selection or operation on the other clips in the group. There are two ways to get clips grouped in the first place. The manual method is to select the clips you wish to act as a group, right click on them, then choose a command from the pop-up menu to group them together. (A similar facility allows removing clips from a group later.) More interesting, though, is an automatic method for grouping clips together. A new recording option in SONAR 8 allows SONAR to automatically group any clips recorded together into clip selection groups. This makes it easy to operate on, for example, multi-miked drum tracks or other instruments recorded across several tracks in a single recording pass. The tracks do not have to be contiguously located. You can think of this as editing at the performance level, rather than at the level of the individual underlying tracks that add up to that performance. This can be handy for maintaining the integrity of a performance while still allowing the flexibility of moving things around in the ways we've gotten used to in the DAW world. It saves the user from having to remember what goes together and take all the extra steps needed to

deal with selecting, and/or otherwise editing, all the related bits and pieces. Here are a couple of examples to demonstrate how this new capability might be used:

In a live recording studio environment, a drum set is typically recorded with multiple mics, with each mic going to its own track. Enabling the automatic clip grouping feature would result in the clips from all the tracks recorded in one pass' being grouped together. Perhaps two passes are tracked, then it is time to comp those two sets of takes down to one composite part. Due to mic bleed and general feel issues, we probably want to avoid using the track from, say, the snare mic on the first take, with the tracks from the rest of the mics from the second take. We'll want to either cut the clips we have from each take down into smaller clips to enable clip-level muting or deletion of the unwanted clips or to use time range muting on the various clips to result in only one set of takes' being heard at a time. This is doable without clip groupings -- you simply have to operate on each clip separately, or, in cases where it is applicable, use existing multi-selection techniques to tell SONAR which clips you want to tweak. With clip grouping, though, you only have to operate on one of the clips in the group, and the same operation will be applied to all other clips in the group. For example, if you are cutting around the chorus section to allow changing which take is being used in that section, you can just cut whichever clip is most convenient to cut (e.g. the hi-hat track), and the same cut position will be applied to all the other drum tracks. Similarly, if you apply a time range mute to one clip in a clip grouping, that same time range mute is applied to all the other tracks in that clip selection group. Note that this use isn't specific to audio tracks. For example, I use multiple MIDI tracks when recording NI B4II organ parts, with one track for the upper manual of the organ and another for the lower manual (I use my two MIDI controller keyboards to record the two parts concurrently). Needless to say, I want these tracks to go together to preserve the nuances of my playing, but I also want them to maintain their separate track locations, both for readability in Sonar's Staff View and to preserve the proper routing to B4II organ manuals.

In another scenario, we might be building multiple instrument tracks up through overdubbing a track at a time. We've got everything working nicely in one chorus of the song, and we want to use those identical parts, or some subset of them (e.g. the basic tracks or background vocals), to fly into one or more additional choruses of the song. In this case, the parts weren't recorded together, but we can use SONAR 8's ability to group clips together after the fact to group the relevant tracks. Once we've done that, we can simply do the needed editing on one of those tracks, Ctrl-drag the isolated chorus to its new location to copy it, and have all relevant tracks stay together in this process.

At that point, we may want to ungroup the group for further editing.



When clips are grouped, the Split and Mute tools will work on all clips in the group in parallel. This can be a big timesaver when dealing with time range mutes across multi-miked tracks or cutting up multi-miked tracks ahead of clip-level comping.

There is at least one key idiosyncrasy with clip group behavior. Let's say I've just tracked a multi-miked drum set for an entire song. Everything is great, except the second chorus. I can fly the first chorus in to replace the second chorus, and the timing of both choruses is such that I can make easy cuts at the beginning and end of the chorus. What I'd like to be able to do is split the first chorus out at its beginning and end, cut the second chorus at its beginning and end then delete it, then drag copy the first chorus to the location of the second chorus, using SONAR's "move by measures" grid to maintain timing. My expectation is that I should only have to operate on one of the tracks in the clips to do all this, thanks to clip grouping. In fact, cutting up the tracks goes just as expected, but when I try and delete the second chorus, then entire drum part gets deleted. Similarly, if I just try to move the first chorus to the position of the second chorus, the entire drum part moves.

What is happening is that the splits in these clips are not creating new clip groupings with the same set of tracks but different horizontal positions. Both the clips before and after the split remain part of the original clip group. There are possible workarounds. One is to ungroup all the clips, then manually create new groupings with the same set of tracks but the different horizontal positions, then finally do the deletion and copy. It seems to me, though, that this

having to ungroup and create multiple new groups significantly impairs the potential for gaining efficiency through clip edit groupings. Another possibility would be to use the grouping override facility, which is basically hitting shift when using the tool you want to use, such as the Select tool, to override the groups. In this case you would manually select the second chorus clips, delete those, then manually select the first chorus clips and copy those into the place of the second chorus. This also feels like extra work, though, when it would seem the point of the groupings is to keep parts recorded at the same time together, and an explicit splitting of a track into multiple horizontal pieces should keep the vertical pieces on each side of the split together, but create a new horizontal group.

Whether this behavior is a bug or by design I can't say, but, for the benefit of workflow efficiency in clip group-based editing, I'm hoping the former, and that a fix will be forthcoming in the next patch update. Meanwhile, this idiosyncrasy won't affect other key applications such as muting by time range when doing time range-based comping. If, on the other hand, you prefer clip-based comping, and cut things up into phrases ahead of comping, the issue will have a similar effect as in the editing case. In fact, it will have even greater workflow impact there because, unless you manually get rid of the groups and recreate new ones after cutting things up, you'd have to be doing manual selection every time you want to try comping a new segment, and possibly also each time you want to try a different take if there are more than two takes.

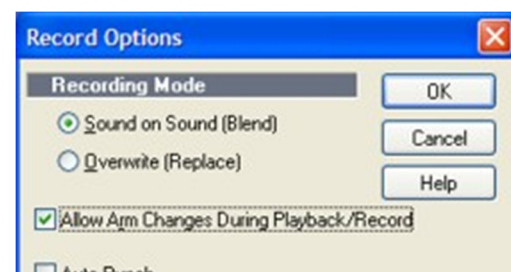
SONAR 8 also significantly enhances keyboard-based editing operations, providing three modes of operation for using the keyboard's number pad. A navigation mode provides the ability to scroll or zoom using the keypad's arrow keys (8 for up, 6 for right, 2 for down, and 4 for left). A selection mode allows using those same keys to move the cursor around the clips pane, and select based on entire clips or by time range. Finally an edit mode allows slip editing of clips and manipulating clip fade-ins and fade-outs. The edit mode uses the numeric keypad's arrow keys to select what gets affected, along with the plus and minus keys (also on the keypad) for actually performing the operation. While these enhanced facilities may find some favor with mouse-challenged users, I suspect their primary purpose is for enhanced integration with control surfaces, such as the new [Cakewalk SONAR V-Studio 700](#).

Teaching the New DAW Old Tricks

Here in the modern DAW world, we can do all kinds of things that were unheard of back in the tape-based world where many musicians and engineers cut their recording teeth. Occasionally, though, there are also things that could be done in the tape-based world that, for one reason or another, do not appear in a given DAW.

One such feature that has long been requested by SONAR users is the ability to arm and disarm tracks for recording while SONAR's transport is running. This may not seem like a big deal for those of us who operate in a solo environment where we're playing engineer and musician at the same time. However, in an environment where multiple musicians are working together in parallel, with an engineer trying to make sure the results are captured with little or no impact on the musicians' creative flow, the feature could be a life saver. For example, consider a jam-oriented session, where a core group of musicians are playing together in an extended jam. All of a sudden the session leader gets an idea and points to another musician who is present, but not involved in the current take, with the idea that this additional musician join the jam in progress. The mics are all configured to support additional musicians, but, because you, the engineer on the session, weren't expecting this musician to be playing on the current take, you hadn't armed his track for recording. What do you do? Somehow the words, "sorry, guys, you'll have to start the jam from the beginning so we can record Charlie's track," don't seem like they'd go over too well. Prior to SONAR 8, though, that and the almost as undesirable option of having Charlie wait to do his part as an overdub would be your main options. (A third option might be hoping Charlie can just share a mic or other audio input with another musician whose track is already configured for recording.)

SONAR 8 provides the capability of arming and disarming tracks while the transport is running. The capability is disabled by default due to the potential for significant CPU overhead if there are many input devices enabled on some WDM devices. (This is not an issue with ASIO drivers. A potential workaround in the case of affected WDM devices is to disable any input drivers that you can be certain



will not be needed.) To enable the capability, go into SONAR's Record Options, and check the "Allow Arm Changes During Playback/Record" flag. Once you've set this flag, you're ready to get the transport rolling and arm and disarm tracks (and turn recording on and off in general) as you please.

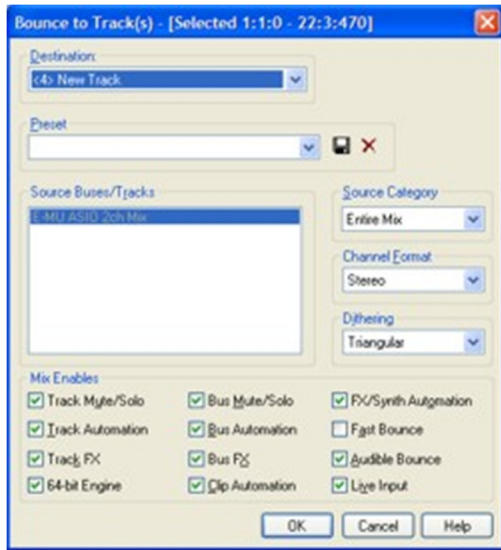
In addition to satisfying the unexpected additional musician scenario mentioned above, this capability could provide the potential for significant disk space savings in the case of an arrangement where some parts would only be playing for brief parts of the song. For example, consider a flute part plays at the beginning of the piece and then not again until an instrumental break two thirds of the way through the song in a case where multiple musicians are recording together, playing straight through the song. If the flute part stays armed throughout the song, all the parts where the flute is silent would still be recorded and taking up disk space. However, with this new capability, you could simply arm the flute track at the beginning of the piece, record it until the first part ends, then disarm the track and arm it just before the part comes in once again in the final third of the piece. Of course, you'll then have to be more on your toes to ensure you don't forget to rearm the track in time, but the tradeoff might be worthwhile in some instances. It's worth mentioning that this particular option goes beyond the tape world's capabilities. In the tape world, you'd either still end up using all the blank tape in between the flute tracks (i.e. if one tape track would be dedicated to the flute track), or you'd have to plan out which instrument was recorded where in order to allow one tape track to be shared by multiple instruments that were never playing concurrently, which, in addition to not being practical in all cases, makes for extra mixing challenges.

Back in high school, when I first started multitrack recording, I didn't have a multitrack recorder, so I used two cassette decks. I'd record a preliminary track on the first deck, then play that back while overdubbing another part to end up with a blend of the two tracks on the second deck. Then I'd repeat the process in reverse to add the third track, and so on. While things started degrading pretty rapidly on the sound quality front, I remember building up some fairly thick arrangements via this method. Later, when I had a multitrack reel-to-reel deck, and, still later, an ADAT digital recorder, I used a related methodologies to build up arrangements more complex than the number of tracks I had available would allow. One specific technique was to sequence a large number of MIDI tracks, then play those back, mixing the results to two tracks of my 8-track tape decks, leaving the remaining six tracks for vocals and other overdubs.

While I'm grateful those days are long behind me thanks to SONAR's virtually unlimited tracks, effects, and softsynths, a new SONAR 8 feature called live bounce brings similar techniques to SONAR. Before getting to what these techniques do, and how they might be used in SONAR, I want to point out something they do not do. In particular, the [SONAR 8 "What's New" page on the Cakewalk web site](#) for this feature reads, "**Live Effects and Soft Synth Recording**-- play and record effect and soft synth output into audio tracks in realtime using SONAR's live bounce feature." Cakewalk's ["The Fine Print" web page](#) elaborates on the live input bounce as follows:

When using the Bounce to Track(s) or Export Audio command to bounce audio in real-time, you can now choose to include any live audio input in the bounce. This allows you to capture realtime inputs as part of the bounce. This feature can be used to record soft synth outputs to a track in realtime - i.e. MIDI that triggers the synth will be printed to the track.

Based on the first passage, I was expecting I could record the actual audio of a softsynth part I was playing in real time to its own audio track, more or less like I might do if recording a guitar through a rack of effects, or recording the audio output of a synthesizer through a rack of effects, to an audio track in a tape- or DAW-based scenario. That is true, albeit with some caveats. Based on the second passage, I further expected the MIDI from my softsynth performance would be recorded to the softsynth's MIDI track. That is not true. Also based on the second passage, I expected that the audio from my take could also be incorporated into a mix bounce in parallel to having it going to its own track. The mix bounce incorporation turns out to be the most straightforward thing to do with this feature, but its going to its own track versus a mix bounce is an either/or proposition. Whether I was reading too much into what was written, what was written was simply ambiguous, or what was written was meant to describe something that was intended, but is not yet implemented in the current version of SONAR, I can't say. However, the actual feature as implemented in SONAR 8.0.2, in its default usage, is very much along the lines of what I'd been doing with my two 1970-something cassette decks.



SONAR's current live input bounce feature is available as an option in the "Bounce to Tracks" and "File/Export" dialogs when the "Fast Bounce" feature is not engaged. If you want to hear what you're playing you will also want to engage the "Audible Bounce" feature. If you also want to hear any other reference tracks that may have been recorded in the project, you will also need to select those in the project before engaging the bounce or export operation. This means they will also be included in the bounce or export operation. Thus, in the default case, using the entire mix as the source of the bounce, it is very much like the cassette deck to cassette deck recording I mentioned above. That is, the one part (or multiple concurrent parts) you are overdubbing is mixed in with the resultant recording -- i.e. the live input does not get recorded to its own track. In the case of a bounce, the blended audio goes to a new audio track whose name begins with "Live Bounce".

Instead of choosing "entire mix" as the source category, you can choose "tracks". In this case, the softsynth you are capturing live will get its own audio track. By default, so will every other track you have included in the mix, resulting in redundant tracks if some are already audio tracks (or previously rendered softsynth tracks). You can, however, manually deselect the tracks you don't want included in the mix. This may get tiresome if you have a large mix, but it will result in the live input part(s) getting its (their) own audio tracks.

MIDI data is not recorded at all. In fact, there is no user interface to trigger recording during these bounce or export operations, and any tracks that are armed do not automatically get recorded. The conceptual model truly is a bounce (or export) incorporating live track(s), as opposed to an interface geared toward tracking an instrument with its effects (i.e. as in the old days where you had to track with effects due to not having enough hardware effects devices to cover all the tracks you wanted to process at mix time). If your uses for the feature will primarily be in the latter area (e.g. for highly efficient tracking of parts to audio in situations where time is critical), be prepared for what, if aren't necessarily workarounds, are at least some user interface model inefficiencies.

It is also worth noting that, just as with any other bounce or export operation, the time range you select will govern the time range included in the bounce. Given the way this works, that is no big surprise. However, a subtle point is that, if the first track you are recording is a live bounce of a softsynth or some other audio source, neither the export nor the bounce operations will be available until you select a time range. If you don't know how long you need (e.g. maybe you'll be recording a freeform composition that will only take shape after you begin playing), make sure and select a time range that is plenty long for the longest you would need. When you get done playing, you can hit the Cancel button to end the tracking, and SONAR, thanks to another new SONAR 8 feature, will ask you if you want to keep the results of the operation to that point. Say you do, and you'll be off and running.

When I first read the bullet-level description of the live bounce feature, I'd envisioned it as sort of a real-time, live input Freeze for softsynth tracks. While the need for that didn't seem terribly critical, at least with a powerful enough CPU, I did at least think it might save time in projects where time is of the essence, and it makes sense to commit to mix decisions up front. For example, I envisioned this being a nice feature for work demos that weren't likely to be used as the basis of a more polished future recording. Don't leave options for the mix and things go more quickly because there aren't many choices left to make. It is possible to use the feature this way. However, the way the interface is set up is a decided drag on workflow efficiency, especially once you get past laying down the first track if you don't want to get into that cassette-to-cassette-like mode of adding a part at a time to a complete mix of everything laid down prior to that point.

My thoughts on this feature versus my original expectations made me wonder what sort of applications might be better suited for this facility. One that comes to mind is the case of a live performer playing with backing tracks and wanting to record the result. In that event, there would decidedly be a user interface bump in having to select the tracks and range of time for the bounce, along with selecting any other bounce options, but the default of rendering everything to one mix would be exactly what the doctor ordered. This feature would also be good for tracking an

instrument that combined software and hardware effects and/or synths. For example, if you were tracking a normal electric guitar, in which case there is no MIDI information, you could run it through something like NI Guitar Rig LE, hearing the sound you'd be tracking live, and committing the sound with its effects to audio while recording it. Here again, setting up the bounce might be a bit of a drag on workflow efficiency, especially if you wanted the bounced guitar to go to its own track. Still another scenario, this time where the bounce analogy seems more germane to the application, would be for doing a mix that involves external MIDI instruments, where those instruments come back into SONAR as audio tracks, and where capturing the audio from those tracks to SONAR tracks (e.g. in case you don't have access to the same modules sometime down the road when remixing the project) might be desirable. In this case, it also might have been useful to be able to bounce the audio to its own individual tracks while also including its audio in the larger mix.

The net is that, while there are certainly some areas where this feature will be useful, I can't help feel that the user interface mechanics and overall model have some practical limitations in most every scenario I've envisioned. These limitations generally come in the area of impacting workflow efficiency, which seems to rub against the grain of the main reason I envision using live input recording in this manner -- i.e. trying to capture creativity as quickly, and as effortlessly, as possible to avoid losing the creative flow. As such, it seems to me this feature could do with some refinement in a future release. It also would be nice if it could indeed record the MIDI from a softsynth being played in this way. That would allow getting the benefits of tracking the part directly to audio while capturing the raw materials for any later reuse, such as the case when a work demo is to become the basis for a more polished production.

Into the Mix

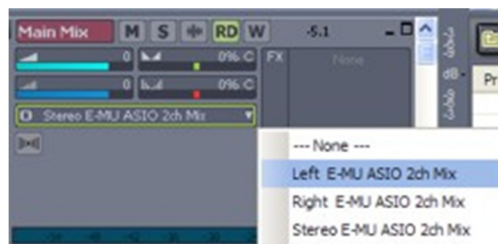
SONAR 8 supplies several enhancements that will be helpful come mix time, as well as during the editing stage in some cases. My favorite, and perhaps one of the greatest productivity enhancements added to SONAR this time around, is called exclusive solo mode. We've all been through the drill where we are trying to evaluate one track at a time. When we want to hear the next track, we unsolo the first track and solo the second, then repeat the same set of operations each time we're ready to listen to a new track. Exclusive solo mode provides a very simple enhancement. Each time you solo a new track, any previously soloed tracks are unsoloed. It might seem like a minor thing on paper (er, computer screen), but it can actually be a big deal, especially in the context of performing the operation on tracks that aren't located near one another and trying to make the switch in soloed tracks with tight timing. It really cuts down on mouse acrobatics, thus letting you pay more attention to the listening than the maneuvers. Not only does this improve efficiency in terms of literally halving the number of mouse moves for the operation, but it also means you're less likely to have to listen to the section you're reviewing additional times due to having messed up a tightly timed mouse move.



Speaking of soloed tracks, a new solo override feature allows that specified tracks remain soloed even in the presence of soloing other tracks with exclusive solo mode engaged. For example, say you're reviewing various instrumental tracks for tightness against the drums. You may only want to check one part at a time, making the use of exclusive solo mode helpful. However, you also want to keep the drums audible, independent of which other track may be soloed. You can use solo override on the drums to accomplish this. Soloing a new instrumental track will unsolo any other previously soloed instrumental tracks, but, because the drums have solo override engaged, they would also remain soloed. To engage solo override on any given track press the Shift key while clicking (or otherwise engaging) the track's solo button. The solo button for that track will then have a cyan-colored background, as opposed to the normal green-colored background when solo (i.e. without solo override) is engaged. Note that mute takes precedence to both solo and solo override. Thus, in my example above, if you wanted to temporarily mute the drums to hear just the instrument you were reviewing, you could simply press the Mute button for the drums, leaving solo override engaged.

An enhancement to the Quick Group command allows quickly grouping all tracks feeding a specific bus. Just Alt-click on the bus' QuickGroup button, and all tracks feeding that bus will be assigned to the Quick Group for manipulating their track-level controls. For example, say you've got a bunch of background vocals feeding a BGV Submix bus, but the bus input levels are too high, so you want to reduce the volume of all tracks feeding it commensurately. This new capability would make it easy to group the individual background vocal tracks, then manipulate the fader on one of them to make the change. There are two caveats, however. Firstly, if you have envelopes automating one of the controls you will adjust via Quick Groups, the control will initially adjust as per your grouped move of that control, but then the automation envelope will override that change once playback begins. While this is the normal way envelopes work in relation to individual track properties moves versus grouping in general, so is expected behavior, you may be less likely to notice the automation since you can group a track and manipulate it without actually touching that track. By comparison, without this enhancement, you'd at least have to pass over the track in selecting the track directly or including it when selecting a range of tracks. Secondly, in SONAR 8.0.2 the same track math bug that affects instrument tracks in other areas (see above) comes into play here, resulting in the potential for tracks that should be grouped together not being grouped in the case of multiple instrument tracks in a row.

SONAR 8 now also allows routing of track and bus outputs to mono hardware. For example, if you have an external effects device you want to use in SONAR plug-in chains, and it only has a mono input (e.g. a mono in/stereo out reverb), you might want to route one or more tracks and/or buses to the input of the device. If the bus or track being routed to the mono hardware output is stereo, then it will be downmixed to mono first. Note that mono hardware outputs are not displayed by default. To enable their display, you need to go into the Drivers tab within SONAR's Audio Options, then set the "Show Mono Outputs" flag. Once you do that, you will see left and right outputs for each of your audio device's outputs, in addition to seeing the stereo output for that device.



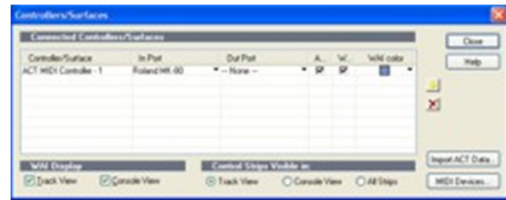
We Have Assumed Control



SONAR 8 has enhanced several areas relating to controlling SONAR, both from its on-screen transport and from an external control surface. In fact, as soon as you open one of SONAR's Transport toolbars -- my favorite is the Large Transport -- you'll notice several extra buttons. There are now what Cakewalk bills as "True Rewind" and "True Fast Forward" buttons. While I'm not sure

I get the "true" connotation -- in particular, they don't behave the same way as tape deck controls in that they neither stop playback to perform their operations nor scrub at high speed when engaged -- they do provide some new functionality. (Actually, I believe the "true" is used to distinguish these new buttons from the old ones with similar names. For example, the old Rewind button doesn't really have classic rewind functionality, but rather returns to a specific location dependent on context, such as the start of the project, the start of the looped region of the project, or the Now Time marker.) In particular, they rewind or fast-forward the Now Time marker smoothly, and independently of the Now Time cursor, which follows playback if playback is engaged at the time. As soon as the Rewind or Fast Forward button is disengaged, the Now Time cursor catches up with the Now Time marker, instantly starting playback from that point if playback was engaged while doing the rewind or fast forward operation. There is also a new Pause button. As you might expect, it pauses playback in its tracks. It does not, however, affect the Now Time marker's position. Thus, if you continue playback from where you paused it, then hit the Stop button, the next time you start playback it will resume from wherever the Now Time marker had been prior to the pause. Note that there is no keyboard shortcut for the Pause button, and the button's functionality is different from the Ctrl-Spacebar shortcut which does pause playback but also updates the Now Time marker. There is also a new Audition button that makes it a bit more intuitive to audition whatever data may be selected, including non-contiguous clips. This is analogous to the Shift-Spacebar functionality that has been in SONAR for a few versions now. If you didn't know about that shortcut, you've just demonstrated why a button is useful.

Control surface users now have the option of having their visible controls' track assignments tied to the visible tracks in either SONAR's Track View or Console View. This is in addition to the default option, which was used in earlier versions of SONAR, which has control surface strip assignments tie to all project tracks. Let's say, for example, you've just submixed background vocal tracks corresponding to doubled three-part harmonies to a single stereo track. Odds are you might hide the original background vocal tracks in the Track View, Console View, or both to keep your view uncluttered for the mix. With the control surface strip assignments applying to all project tracks, though, those tracks would still take up control surface track strips. By choosing to have the control surface strip assignments track the Track View or Console View, hiding those original background vocal tracks will remove them from control surface strip assignments, thus only using the control surface strip corresponding to the submix come mix time.



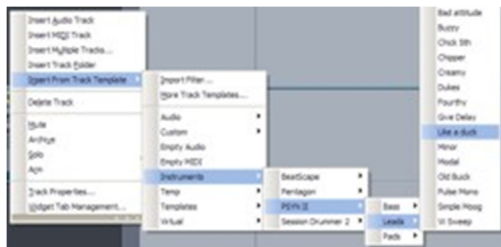
SONAR 8's Track Manager now has a flag to keep the Console View and Track Manager views in sync with one another. For example, if you hide a track in the Track View with this option engaged, it will automatically be hidden in the Console View, and vice-versa. If your general preference is to keep these views in sync, this feature can save some time on the workflow front, especially if you find yourself frequently hiding and unhiding tracks.



SONAR now can display meaningful VST plug-in parameter values in ACT surfaces and property pages, in conjunction with assignable controls in the Synth Rack and Console views, and in tooltips associated with envelopes at the current Now Time. Whereas in the past SONAR would only display decimal values between zero and one, representing the fractional proportion of the way between the

extremes of the control's travel between its lowest and highest points, respectively, SONAR can now display values with real-world meanings. For example, if the parameter in question is the gain control for a band of an equalizer, the range of the parameter might be between -18 dB and 18 dB. If it is the frequency setting for that same equalizer band, the range might be between 16 Hz and 22 kHz. Note that SONAR can only display meaningful values if the plug-ins in question expose the relevant information to SONAR. However, all of the plug-ins I randomly selected to check did this, including a series of freeware plug-ins that bore date stamps between 1998 and 2000.

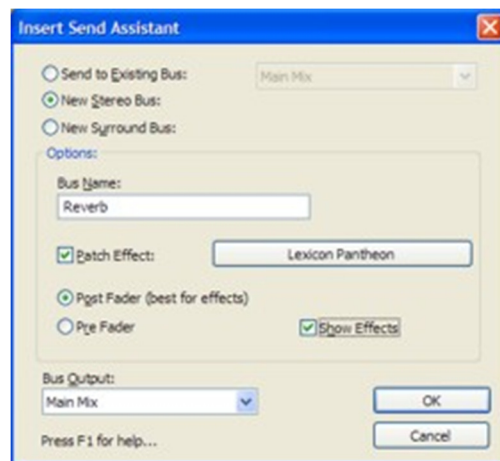
Getting Off to a Running Start



There's no doubt that SONAR is a complex product with a myriad of areas to explore, build, and tailor to your liking. New users, especially, can get overwhelmed trying to figure out where to start, but even experienced users can sometimes use a bit of help to tame all the possibilities SONAR provides. SONAR has long had facilities such as project templates to get common project configurations set up quickly; track templates to create individual or multiple tracks with preset softsynth setups, effect chains, and even bus routings quickly; drum maps for common drum modules of

both the hardware and software varieties; and much more. SONAR 8 adds significantly to what is available in this area, for example with over 400 new track and project templates, updated ACT presets for popular plug-ins and controllers, additional drum maps and plug-in presets, and a new collection of drum pattern presets for SONAR's integrated Step Sequencer. Of course, you can still create your own presets, maps, templates, and so on. However, especially with the ACT mappings, it's nice to know there is a good chance that the work has already been done for you, especially if you use a large number of plug-ins and softsynths and want to be able to manipulate them with your hardware control surface.

Cakewalk has also added an Insert Send Assistant, which is conceptually similar to the wizards found in many software applications. When I first read about this, keying in on the word "assistant", I had visions of the talking Microsoft paper clip from Word or the Grouchy Office Lady. I can't ever remember having actually used those facilities and get annoyed every time they pop up. However, it turns out the Insert Send Assistant is much less a handholder geared at newbies (though it can certainly help out in that area) than it is a way to perform multiple operations very quickly. While you can still insert sends and create send and return buses the way you're used to, I suspect most SONAR users will prefer using the Insert Send Assistant for creating new send/return buses after trying it once or twice. Here's why:



When you're ready to create a new send/return bus, you can just right click on a track you want to send to that bus and call up the Insert Send Assistant, just as you'd call up the Insert Send command. Instead of getting another menu of existing buses and choices to create new stereo or surround buses, you'll get the Insert Send Assistant dialog box. Had you gone down the traditional route, you'd then go find your bus in the bus pane, name it as you like, add effects, and then set up the effects plug-in. If you need to change the pre-/post-fader setting, you'd also do that in the track properties. With the Insert Send Assistant, though, you can do most of that in one place. Up at the top there is a set of choices for sending to an existing bus (and picking which one if you go that route) or sending to a new stereo or surround bus. If you pick a new bus, let's say stereo in this case, you will get additional options in the dialog box, including what to name that bus, whether to patch an effect (and you can pick the effect right from there if you so choose), whether the bus will be pre- or post-fader, and whether to open up the effect you've just patched when you accept your choices. You can also choose the bus output from the same dialog box. Everything gets set in one quick form, and the only reason you might need to go back down to your new bus immediately is if you want to tweak bus levels, panning, and other settings (e.g. adding a bus icon, flipping polarity, etc.), or if you want to patch additional effects. Even if you need to do those things, though, the Insert Send Assistant is likely to save some time over the old way. It may also save some head scratching for less experienced users who may get confused in setting up the routings.

Odds and Ends

Before we get to the new toys section of this review, it's worth mentioning a few miscellaneous updates made to the base product. In no particular order: SONAR's sample rate conversion has been enhanced to use the faster convolution engine used in the LP-64 series of 64-bit mastering plug-ins. Support for QuickTime 7 import and export has been added, including support for H.264 (the codec preferred for YouTube videos) and AAC audio (the format used by iTunes). Various enhancements have been made to improve audio support under Windows Vista including WASAPI support (improves support for consumer devices and devices without ASIO or good WDM drivers), MMCSS task profile support (gives SONAR priority access to CPU resources for time-sensitive multimedia processing), and WaveRT updates (changes to work properly with Vista SP1).

Moving in Stereo



Most of the new toys in the SONAR 8 product line are exclusive to the Producer Edition. However, SONAR Studio users do get one new plug-in. Channel Tools provides sophisticated controls for manipulating the stereo field, as well as automatic decoding of Mid-Side (M/S) channel recordings.

Being a keyboard player who is frequently playing instruments with stereo outputs, one of my long-time pet peeves has been that SONAR's channel-level panning is a simple left-right balance. That

means, for example, that if you've got a piano recorded in stereo, and you want it to appear to be more toward the left of the overall soundstage, you will be turning down whatever is recorded on the right side of the stereo field and turning up whatever is recorded on the left side of the stereo field. If the piano is recorded from the player's perspective, that means turning down the high end and turning up the low end, which is decidedly undesirable in most cases. What is more desirable in such a case is to move the entire stereo field of the piano over toward the left side of the soundstage, which essentially means narrowing the piano's apparent width while preserving its stereo balance within that width. Channel Tools to the rescue!

Let's take a quick look at what Channel Tools can do. The plug-in's interface is broken down into five areas, with one of those being the input and output (before and after?) meters in the central area of the plug-in.

In the top left-hand corner is a module labeled, somewhat confusingly in light of the plug-in's name, "Channel Tools". There are separate buttons to invert the polarity (phase) of the right and left channels, and a third button to swap the left and right channels. The meanings of these are the obvious ones, if, that is, you are working with a stereo signal. If you are working with an M/S signal, engaging either the left or right polarity flipping button will swap the channels of the stereo image, as long as you have not also engaged the polarity flipping button for the other channel, while pressing the Swap button inverts the polarity of the side channel. The processing done in this block occurs immediately after input to the plug-in.

Just below the Channel Tools section is the Delay section, which is either next in the signal flow of the plug-in or just prior to the output of the plug-in, depending on whether it is operating in Pre or Post mode, respectively. (There is also an Off switch to disengage the Delay module entirely.) The main body of the delay module provides dials for delaying either channel anywhere from 1 sample up to 1 second (i.e. 1,000 ms). There are also associated text boxes, which display the delay times in milliseconds and samples, and either text box can also be used to directly enter the desired delay value in milliseconds or samples -- your choice. There is also a Link button to force both left and right channels to be delayed by the same amount. Note that, if you are processing an M/S recording in Pre mode, which places the Delay module prior to the M/S decoder, delaying the Left channel (i.e. per the control labels) is delaying the mid+side (positive polarity) signal, while delaying the Right channel (i.e. per control labels) is delaying the side (negative polarity) signal, which would then get the side components out of sync with one another. Beyond any potential for creative uses, the Delay module could be used for dealing with mic placement issues, such as the right mic's being farther away from the source (i.e. and thus receiving the signal later) than the left mic in a stereo recording.

In the top right-hand corner of the plug-in is the Input Mode block of controls. You can select here whether the signal is treated as being stereo (i.e. left/right) or Mid-Side, or whether the signal is muted (i.e. via the Off button). If stereo is selected, the signal is goes through an M/S encoder to temporarily allow mid-side balance adjustments. There are Mid Gain and Side Gain knobs to allow making such adjustments. After those adjustments are made, the signal goes through the M/S decoder, resulting in a stereo signal, independent of whether the original source signal was stereo or M/S. At this point, any adjustments made to the Left Gain and/or Right Gain knobs in this block of controls is applied before the signal moves to the next stage of processing.

That next stage of processing is controlled by the rather humbly named "Panner control" down in the bottom right-hand corner of the plug-in's interface. This is no ordinary panner control. It provides two multi-part controls, one each for the left and right channels. Unlike SONAR's channel panner, which has a single control to adjust the balance between both channels, each channel of the Channel Tools Panner control has its own, fully independent, control. The control for each channel provides semi-independent width (0% to 100%) and angle (0° to ±30°) controls. Note that the two sides of the width control for a given channel will always be equidistant from the angle control for that channel. I call these controls semi-independent, because movement of the angle control beyond some point can constrict the width control's range, and movement of the width control beyond a certain point will force movement of the angle control. For example, if you widen the width control to 100% (i.e. mono), this forces the corresponding angle control to the 0° position (i.e. center). Similarly, if you move either channel's angle control to -30° (i.e. full left) or 30° (i.e. full right), its width control will be constricted to 0%. However, if you don't want one of these controls to be affected when you change the other, you can prevent that by using the alternate mode of the controls, which is invoked by holding down the Shift key while moving the controls. In this case, the control you are

changing will not be able to move beyond a certain point if its moving beyond that point would affect the setting of the control you are not changing.

Whether it is for stereo instrument manipulations, fixing phase issues due to mic placement, or resolving stereo field issues at the mastering stage, Cakewalk's new Channel Tools plug-in provides a good deal of power and flexibility. It is thus an extremely welcome addition to SONAR's overall arsenal of plug-ins, and kudos go to Cakewalk for including it in the SONAR Studio Edition package as this is truly a plug-in that every SONAR user will want to have.

New Toys for the Producer

While the SONAR 8 Studio Edition provides plenty of reasons for SONAR users to upgrade, it is the SONAR 8 Producer Edition that, as usual, delivers the mouth-watering (er, in an audio production sense) toys. In addition to surround mixing, the SoundBridge technology to allow using stereo effects in surround, and POW-r dithering, SONAR 7 Producer Edition also included the LP-64 Linear Phase Equalizer, LP-64 Linear Phase Multiband Compressor, VC-64 Vintage Channel strip, PerfectSpace convolution reverb, Lexicon Pantheon Reverb (full edition -- SONAR Studio Edition users get a limited edition version), Sonitus:fx Surround Compressor, and Z3TA+ waveshaping synthesizer. Now SONAR 8 Producer Edition adds the TL-64 Tube Leveler, TS-64 Transient Shaper, NI Guitar Rig 3 LE, Dimension Pro synthesizer with additional instrument and effects libraries, Beatscape looping instrument, and TruePianos Amber piano. Let's take a closer look at these new goodies.

TL-64 Tube Leveler

The TL-64 Tube Leveler plug-in provides analog tube preamp emulation based on technology originally developed for Gallo Engineering's Studio Devil amp simulator. The saturation effects



Tube Leveler can produce range from subtle warming to down and dirty distortion. Before you start trying out presets, it is worth a warning that some of those presets bump the volume level up considerably, so you may wish to turn your track (or bus) fader down ahead of time to be on the safe side.

Starting from the left side of the plug-in interface, just above the power switch (bypass button), you will find an Over-Sample enable (OVR-SAMP) button, which helps avoid high frequency aliasing and quantization noise. This comes at the expense of additional CPU usage, so, if performance is tight, it may be best to leave this feature disabled until just before rendering the track or bus. Immediately to the right of the OVR-SAMP button is the familiar Drive control, which is used to control how much of the input signal will be subject to the saturation processing.

Next up is the dynamic response block of the processor. A Dynamic mode enable (DYN) button determines whether the tube modeling algorithm used is dynamic or static. Dynamic mode behaves more like a real vacuum tube in that its characteristics vary over time in response to the input signal. It is enabled by default. When dynamic mode is enabled, you can also apply a low-shelf filter, with adjustable cutoff frequency and gain controls, and enable a bass compensation (CMPS) button to compensate for the bass reduction from the low shelf filtering. The idea is to reduce the potential for clipping in the bass region while still keeping your overall output response flat.

The saturation section is next. By default, you will see the "TL-64 Tube Leveler Powered by Studio Devil" logo followed by a Clipping control to adjust the softness or hardness of the saturation-to-clipping curve, then a graphic display that shows the saturation curve in use. However, if you click on the Advanced button below the saturation section, the logo is replaced by two additional controls. An Offset dial allows biasing the signal more toward the positive or negative range, for example to compensate for an asymmetrical input signal. A Symmetry (SYMTRY) dial is used to tweak the hardness or softness of the positive and negative portions of the signal differently, interacting with the Clipping control to determine its effect.

At the far right of the plug-in are the Output Gain knob, which provides up to ± 24 dB of gain, and the output level meters.

I've used a number of analog saturation plug-ins over the years, and, in fact, tend to use one or more plug-ins of this variety on almost every project I produce. Thus, one of my initial reservations, when hearing about Tube Leveler, was, "does the world really need another tube saturation plug-in?" That was followed quickly by, "will it be good enough that I'd consider using it instead of, or in addition to, the plug-ins I already have?" I'm happy to say I can answer, "yes," to both questions. In fact, Tube Leveler has quickly become one of my favorite plug-ins, especially for adding subtle warmth to tracks. Two of its presets, in particular, "Mix Warmer" and "Warm 1" just seem to provide that special sauce that makes almost everything sound slightly better. By contrast, while other saturation plug-ins can also be made to sound subtle, their presets tend to have more pronounced effects, no doubt geared toward making sure we recognize that the plug-in is doing something. Of course, Tube Leveler can also be highly colored in its effects if you like, and presets like "Subtle Warm Dirt" (beware the volume boost on that one!), which is not subtle at all despite its name, is a good example.

The bottom line is, for those who don't already have a high quality tube preamp emulator, Tube Leveler will be a great first plug-in for that function. For those who already have several plug-in options of this sort at their disposal, Tube Leveler provides yet another flavor, and one which may well satisfy more often than not.

TS-64 Transient Shaper



I have to confess that the first time I heard of the new TS-64 Transient Shaper, I had little clue what to expect beyond the hints given by the plug-in's name. Cakewalk calls it "a powerful tool for sculpting the transient dynamics of any percussive based source material such as drums or guitars." I watched the video demos by Cakewalk personnel, where they used it to tweak the sound of an electronic drum of some sort, much like I might think of doing with ADSR envelope controls on a synthesizer. Just before I got the chance to try it out myself, I heard someone else say something on the order of, "it's a useful tool for mastering in some cases where a compressor isn't quite right." It got me wondering if the plug-in would feature a logo with a big red "S" smack dab in the middle! In truth, the Transient Shaper does have a wide variety of applications, though preset names like "Fat Bastard", "Dry Yet Damp", and "FX - Nebulous Blobs" won't be much help in sussing out what those might be.

At its most basic, the Transient Shaper allows you to define what constitutes a transient (i.e. with respect to the "shaping" that will occur in this plug-in), then emphasize or de-emphasize it in relation to the remainder of the input signal. Starting at the left of the plug-in's interface, there is a Threshold control and an Attack control. The Threshold control sets a volume level above which the transient peak must rise in order to be processed. A Transient Detect Indicator light to the top left of the Threshold control lets you know when transients have been detected, and, thus, when the shaping controls will be brought into service. The Attack control then allows increasing or decreasing the gain curve applied to the start of the detected transient, thus giving the perception of a harder or softer attack, respectively.

Next up are the actual shaping controls. A Weight control allows increasing or decreasing the gain curve applied as the transient begins to decay, which begins at the peak of the transient and continues until the signal reaches about -12 dB below its peak value. For example, increasing the weight above 100% gives the perception of lengthening the transient, making it more "phat" (think of compressed drum sounds), while decreasing the weight makes the transient appear to be lighter. There is also a Weight Timbre control, with a range of ± 100 , which, if Timbre Control enable button is engaged, can be used to tilt the weighting of the transient toward the low end (negative values of the Weight Timbre control) or toward the high end (positive Weight Timbre control values) of the frequency spectrum. A Decay control allows increasing or decreasing the gain curve during the decay portion of the signal (i.e. from -12 dB below the transient's peak on down). Increasing the decay value is similar to increasing reverb level, while decreasing the decay value clamps down on the sound more quickly. There is also a Decay Timbre dial that works similarly to the Weight Timbre dial in terms of producing frequency-dependent weighting of the Decay control's

effect. The Timbre Control enable button sits above the Weight Timbre dial, and governs whether the Weight Timbre and Decay Timbre controls, and their effects on the transient shaping, are active or not.

Finally, over on the right-hand side of the plug-in interface are the Output Gain dial and output level meters.

So, what does this Transient Shaper thing actually do? Basically, it allows tweaking the rate of the processed transients' attacks, how long the transients appear to last, and how quickly the transient's sound appears to decay after that. Speaking generically, this can be used to increase or decrease the punchiness of a sound, make a sound seem fatter ("phatter"?) or thinner, and/or give the impression of increasing or decreasing the ambience. Some applications might include trying to punch up relatively dead sounding recordings (but ones which still do have detectable transients), trying to reduce the apparent reverb level in a stereo recording (i.e. when it's too late to simply "fix it in the mix"), altering the punchiness of drum loops, and many more.

In one specific case, I decided to try it out for remastering a 30+ year old cassette recording of my high school jazz band. The original recording was done in a recording studio, so the sound started out as being reasonable. However, between cassette duplication and tape aging, it had gotten pretty dull, and what I started out with on my hard disk after dumping it over from my cassette deck was pretty uninspiring. I used the Transient Shaper with the threshold set around -27 dB to punch up the attacks, increase the weight of the transients, and slightly decrease the decay. To my pleasant surprise, this punched things up nicely, and I was then able to do some more typical mastering processing to fairly dramatically improve the sound of the recordings. While the quality of those recordings certainly wouldn't hold up to modern studio recordings of a big band ensemble, considering where it started out, the results were quite good. In fact, I have heard archival commercial recordings from well known bands of the big band era that sounded significantly worse from an audio recording quality perspective. (Let's not talk about the playing, okay?) After restoring that batch of recordings as best I could, I decided to try my luck on another recording made around the same time. This time it was a recording of my high school concert band made live in concert via a set of inexpensive condenser mics set up in the orchestra pit in front of the stage. The recording was even deader than the jazz band recording, and had more ambient noise. In this case, Transient Shaper couldn't help because there really weren't enough useful transients to distinguish from the rest of the signal.

The Transient Shaper uses the same linear phase technology Cakewalk included in SONAR 7 Producer Edition's LP-64 Linear Phase Equalizer and LP-64 Linear Phase Multiband Compressor plug-ins. This technology prevents a whole range of potentially harmful side effects, but also results in fairly lengthy plug-in processing delay, which will need to get compensated for. Thus, you won't be using the Transient Shaper as a real time effect via input monitoring, but it really is a bit of a Swiss Army knife in terms of what it can do once you've got your signals recorded.

Guitar Rig 3 LE

SONAR 8 Producer Edition bundles Native Instruments' Guitar Rig 3 LE, the limited edition starter version of NI's excellent suite of guitar amp and speaker cabinet simulators, guitar-oriented effects, and other related goodies. Because I already have the full version of Guitar Rig 3 installed on my system, I was unable to install Guitar Rig 3 LE. (Cakewalk indicates this is expected behavior.) As such, what I write here with respect to Guitar Rig 3 LE will be based on a combination of my working knowledge of the full edition of the product and what Cakewalk and NI have posted with respect to the contents of the LE version.



According to [NI's Guitar Rig 3 LE web page](#), Guitar Rig 3 LE includes 2 amp and 12 speaker cabinet models (Cakewalk's product announcement referenced "3 amps and cabinets"). The two amps are the "Twang Reverb" (a thinly disguised reference to a popular amp from a company whose name begins with "F" and can refer to a car part) and the "Lead 800" (a similarly disguised reference to a popular rock amp from a company whose name begins with "M" and could refer to a guy who had a "Plan"). In addition, Guitar Rig 3 LE includes 11 effects modules, including

time-based effects (Studio Reverb, Delay Man), modulation effects (Chorus/Flanger, Phaser Nine), distortion and overdrive (Skreamer, Demon), filter effects (Auto Filter, Real Wah, Graphic Equalizer), and volume effects (Volume Adjustment Pedal, Noise Gate). These effects cover most of the essential functional bases guitar players will need, and certainly provide more emulated gear than you'd likely find in most live rigs. The distinction between what is and isn't included compared to the full product is partly flavor-oriented (e.g. there are many other amps that aren't in the LE version, and the LE version includes a hardware-based delay module but not a tape-based delay module), and partly functional, especially in the area of emulations of more esoteric gear (e.g. the LE version doesn't include Leslie emulation, a ring modulator, or a harmonic synthesizer).

In addition to the amps, cabinets, and effects, Guitar Rig LE includes four special tools. Tuner and Metronome are fairly self-explanatory given their names, though it is worth noting Tuner has a variety of presets, including chromatic, guitar, bass, and various open tunings for guitar. Tape Deck 1 and Tape Deck 2 are hard disk recording components. The former is intended for loading audio files to serve as backing tracks or for use in learning parts. It includes the ability to slow down the recorded part for the latter purpose. The latter is used for recording what you are playing, including the potential to overdub new parts on top of what you've already played.

The basic Guitar Rig 3 LE interface defaults to showing a presets browser on the left and a stack of processing modules, such as amps, speakers, effects, etc., on the right. The left-hand pane of the interface can also show the components available for adding to the chain or various Guitar Rig options. When the components view is active, it is a simple matter of dragging and dropping components from the left-hand side to the right-hand side to insert them at your desired location in the signal chain. There is also a live view to simplify things and show you how module controls correspond to the optional Rig Kontrol hardware pedalboard, which could be useful if you happen to have one. Assuming you don't, however, you can still use the on-screen pedalboard interface to automate Guitar Rig parameters. This is especially useful for automating the wah-wah pedal.

Some tend to pooh-pooh the notion of limited edition programs' being anything of value. In the case of Guitar Rig 3 LE, however, unless you already happen to have the full Guitar Rig 3 product, or at least some similarly equipped competitive product, I'd beg to differ. Many guitarists with real hardware rigs wouldn't even have as rich a selection of gear available to them as Guitar Rig 3 LE makes available in the virtual world of emulations. Also, while I haven't tried all the guitar rig options out there, I do have, and use, several relatively popular ones. Of the ones I have, Guitar Rig 3 is my first call product due to its combination of sound quality, its wealth of useful presets (and Guitar Rig 3 LE makes over 50 of those available), and the straightforwardness and tweakability of its user interface.

Dimension Pro

Moving on to the softsynths, SONAR 8 Producer Edition starts off by including the full version of Cakewalk's Dimension Pro. Dimension Pro is a hybrid sample player and synthesizer that provides a rich sound programming environment. However, for those who would rather just load presets and play, Dimension Pro, along with the additional sound libraries included in the SONAR 8 Producer Edition package, have you covered.

In fact, the combined Dimension Pro library that comes with the SONAR 8 Producer Edition package includes just shy of 2,600 sound programs, utilizing a sample library of over 8 GB. In addition to the base Dimension Pro sound library, and the Expansion Packs 1 and 2, Cakewalk bundles the Digital Sound Factory Classic Keys Expansion Pack and the Hollywood Edge Sound Effects sample library. The former features a library of classic keyboard sounds, such as electric pianos, clavinetts, mellotrons, and classic synths, originally created by the sound designer for the original E-MU Proteus 2000. The latter is a starter sound effects library featuring guns and cannons, insect and frog sounds, and rain and thunder sounds. As for the basic Dimension Pro library, it covers pretty much any base you might think of, and then some, from orchestral instruments (including the Garritan Pocket Orchestra), acoustic and electric pianos, organs, synths, guitars, basses, drums and percussion, ethnic instruments, soundscapes, various types of loops, and much more. You could say that Dimension Pro is a jack of all trades, making it especially valuable for someone who is just starting out in the softsynth world who wants to get a large variety of high quality sounds quickly.



Dimension Pro's primary user interface consists of two separate windows, which can be moved around the screen independently of one another. In the screen shot above, I have placed the Program Browser window to the left of the main instrument window. The Program Browser provides access to the various libraries installed on your system, with a multi-level tree structure to organize things in order to help find sounds quickly. The main instrument window is organized vertically in three sections. Up at the very top is the program area, where entire sound programs are loaded. Each sound program consists of up to four sound generation components called elements. The bulk of Dimension Pro's instrument window is taken up by the controls for selecting an element to work on, loading basic sound building blocks (samples, multisamples, wavetables, or waveguides), and manipulating the element by setting various parameters and setting up various sound processors. Finally, down near the bottom of the window is the mixer/global effects area, where up to two global effects are set up and manipulated, and the elements are blended together to create the composite sound.

Besides the Program Browser and the main instrument window, there is also a MIDI Matrix window and a Vector Mixer window. The MIDI Matrix window can be used to map various types of MIDI control signals, some common (e.g. MIDI CC, pitch bend, channel and polyphonic aftertouch, etc.) and some not so common (e.g. key gate, random unipolar, random bipolar, and alternate), to various control, effects, and other parameters of the instrument. The Vector Mixer window provides a joystick-like control (in fact, you can use a hardware joystick to control it), to allow blending the elements manually through positions in the quadrants of a graph. Since the Vector Mixer movements can be captured as automation envelopes in SONAR, this provides the potential for the sound to evolve under the real-time, creative control of the user.

Dimension Pro provides a powerful sound sculpting environment, and getting into depth with its capabilities is beyond the scope of this review. However, let's hit on a few highlights.

As mentioned above, each sound program can include up to four elements. Within each element there will be one sound generator, which can either be a sample, a multi-sample (i.e. multiple samples spread across the keyboard as defined in an sfz file), a wavetable (a single cycle waveform with less than 4,000 samples), or a waveguide (i.e. a special sfz file treated as an impulse file, for example to emulate the sound of plucked strings). Dimension Pro also supports loading REX sample loops natively, as well as .sfz sample grooves. Basic sound generator parameters, such as transposition (in half steps), fine tuning, key ranges for the sound to be played, and so on, can be applied. Each element also includes a number of processing modules including a Lo-Fi module, a multi-mode filter, a multi-mode saturation module, three stages of parametric EQ, and a multi-mode effects module (various delay-based effects, reverbs, distortion, and more). Each element can also be manipulated using up to five envelope generators, those being for pitch, cutoff, resonance, pan, and amplitude (volume). Ditto for up to five LFOs and five keyboard tracking generators (both for the same sets of options as the envelope generators). Keep in mind this is at the individual element level.

The sounds from the (up to) four elements then go to the global effects and mixer module. There are individual send controls for each of the elements to control how much is fed to each of the two effects devices. Those effects devices are one modulation effect (chorus/flanger, symphonic chorus, phaser, or chorus/phaser) and one reverb effect. There

are also separate panning and volume controls for each element. The mixer also includes a limiter, which sits at the end of the signal chain to prevent digital overs if it is engaged.

With a rich library of preset sounds and deep sound programming capabilities, Dimension Pro is a valuable addition to SONAR Producer Edition users' arsenal of production toys. For those who have only a few softsynths, it is likely to be the module they can count on for a wide range of sounds for typical music and soundtrack production needs. For users who already have a large number of softsynths, Dimension Pro may be the place to turn when there isn't a more specialized module available to meet a particular need, as well as a powerful, but relatively easy to use, sound design station, especially when hybrid sounds are needed.

Beatscape

SONAR 8 Producer Edition marks the debut of a new loop performance instrument called Beatscape. At its most basic, Beatscape is a 16-pad loop triggering and mangling instrument. I'm loath to call it a beatbox, because, despite its name, Beatscape isn't limited to drums and percussion, even if I expect the largest share of its uses would fall into that category. Let's take a closer look.



In the top left-hand corner of Beatscape there is a browser. By default, this will show Beatscape's loop library. The SONAR 8 Producer Edition Beatscape package starts you off with approximately 4 GB of REX format loops from Heatseekers and X-MiX, covering a number of modern genres, such as house, drum n' bass, hip-hop, reggaeton, and many more. There are also tabs for User grooves, for example those you might have imported from third party REX files (or REX loops you've created yourself in ReCycle) or from WAV files (e.g. ACID loops, clips you've recorded in SONAR, etc.), and for Programs, which are snapshots of Beatscape settings that include what loops are loaded and any processing and editing settings. The browser lets you preview loops by Alt-clicking on the loop you want to hear and holding the mouse button down through the duration of the loop (or as much as you'd like to hear of it).

Sixteen pads for triggering loops consume the top center portion of the Beatscape interface. Loading a pad with a loop is as simple as dragging and dropping a loop or WAV file from the Beatscape browser, Windows Explorer, or SONAR's Track View to the pad you'd like to trigger that loop. You can also double click on a loop in the Beatscape browser to have it load that loop to the currently selected pad. Clicking on a pad triggers the loop. Various characteristics of how the loop is triggered are controlled by per-pad edit settings, which we'll get to shortly. The pads are velocity-sensitive, with higher velocities achieved by triggering nearer the center of the pad. Ctrl-clicking solos a pad while Alt-clicking mutes a pad.

To the right of the pads are the per-pad controls, with two tabbed views. The default view is the Edit tab. It allows transposing the pads in semi-tone steps, fine tuning the pad, imposing a variable percentage swing feel on it, panning it, adjusting its volume, and muting or soloing the pad. There are also settings to govern how the pad behaves in response to triggering. Pad Mode determines looping behavior, with Auto Loop starting a pad looping on a MIDI note on (or click on the pad) and keeping it looping until another note on (or pad click) is received, Auto Play starting a pad looping on a MIDI note on (or click on the pad) and keeping it looping until another note on (or pad click) is received, Manual Loop starting a pad looping on note on and continuing looping until a note off message, and Manual Play starting a pad playing through ones and continuing until either the end of the loop or a note off message. Speed determines whether the loop plays at the project tempo or at half or double the project tempo. Sync Mode determines whether the audio from the pad will start at the next measure, the next beat, or immediately upon triggering. If Beatscape is configured for multiple output use, the Output setting controls which audio output the pad plays through. Using multiple outputs allows using different plug-in effects on different pads (or sets of pads) at the SONAR level.



The second tabbed view in the per-pad area is the Effects tab. It essentially provides a three-space effects rack for each pad. Beatscape provides nineteen different effects choices including dynamics processors (compressor, gate, limiter), modulators (chorus, flanger), delays (stereo, synchronized stereo), single band parametric EQ, filters (2-pole lo-pass, band-pass, and high-pass), lo-fi processors (bit reduction, decimator), reverbs (stereo, spring), distortion (1- and 4-stage), and AM and FM effects. Depending on what effects module is selected in each slot, there will be up to three effect-specific controls, as well as a bypass button for that control. Of course, all these controls are automatable for real-time tweaking.

Stretching across the area under the browser, pads, and per-pad controls is the Loop Editor. It provides a zoomable (via the mouse wheel) graphic view of the loop loaded into the current pad. The loop is cut up into slices that are, in most cases, defined by transients. If the loop is a REX loop, its slice markers will correspond to whatever was defined in the REX programming. Otherwise (e.g. with a WAV file you've dragged to a pad from SONAR or Windows Explorer), Beatscape uses SONAR's AudioSnap technology to detect transients and slice up the loop. The AudioSnap technology is also used for dealing with the stretching and time compression of the loops for playback. You can fine-tune the slicing by moving, adding, and removing slice markers. This doesn't affect the timing of the slices, but can effect how the slices stretch or compress when played back at tempos other than their original tempo. You can also drag slices around to reposition them. This affects the content of the slices, but does not affect their timing. Other nifty slice tricks include normalizing a slice, silencing a slice, reversing a slice, and adding quick fades in and/or out to a slice. If you mess things up, you can always use the Revert Edits command to restore the loop to its original state. Note that these edits are affecting only how this instance of the loop appears within Beatscape, not the underlying file on disk or in SONAR.

A minor frustration here is the lack of ability to shift the timing of loop slices around, other than to the degree which it can be modified through the per-pad Swing knob. Doing that could be useful for tightening the timing of one loop against another in the case of loops that were not created to go together. While it is possible to play the individual slices of the loops directly from SONAR (see below), there is no way to get the original timing of those loops to SONAR as a starting point for editing (e.g. by dragging and dropping a MIDI clip with the slice timings embedded, such as can be done with Spectrasonics' Stylus RMX).

The lower part of Beatscape's user interface is taken up by either a graphic keyboard (the default view) or a Rapture-style step generator used for defining per-pad modulations. When the keyboard is displayed, it highlights the keyboard keys that correspond to the MIDI notes used to play the sixteen pads, as well as those used to play the individual slices of the currently selected pad. The pads are played in MIDI Omni mode -- i.e. playing the given note

on any MIDI channel will trigger the pad. The slices are played using the MIDI channel corresponding to the pad number -- i.e. notes on MIDI channel 1 will trigger slices from the loop on Pad 1, and so on.

When the Step Generator is visible, it is possible to draw or generate Rapture-style step generator modulations for pan, volume, pitch, cutoff, and resonance. There is a step for each of the slices in the loop, so it is possible to gain fairly fine control over these modulations. In addition to drawing values directly with the mouse, several step generation or step sequence modification commands are available, including randomize (randomizes the step values for the current modulation), reverse (reverses the current step sequence loop-wise), invert (inverts the values of each step), mirror (mirrors the first half of the loop's steps to the last half of the loop's steps), and more. There is definitely the potential to do some pretty severe mangling here!

Not being much of a looper myself, I can get a sense of the power Beatscape provides for playing and manipulating loops, but find it much less easy to imagine how I might use that in the context of a song. Nevertheless, I found Beatscape a whole lot of fun to play with, especially in the context of creating evolving percussive soundscapes, where the step generators can really make things wild. The biggest limitation I see is its inability to tweak the timing of loop slices to make grooves that weren't intended to go together fit together better. This won't be an issue in the case of using matched groove loops from a commercial REX library, nor is it likely to be a big issue if you're creating your own loops, for example, by breaking up individual mic contributions from a multi-miked drum set into separate loops within Beatscape (i.e. assuming the drummer has good timing). For other scenarios, though, addressing this would likely mean using another facility (including the possibility of AudioSnap within SONAR itself) to match the audio parts you are using ahead of bringing them into Beatscape for loop triggering fun.

TruePianos Amber

The final new softsynth included in the SONAR 8 Producer Edition's bag of toys is the TruePianos Amber VSTi Module. TruePianos takes a hybrid approach that includes sampling, physical modeling, and synthesis. The result is an entire piano that fits into one 122 MB plug-in, as opposed to a multi-gigabyte sample library. Yet, the combination of techniques manages to cover advanced characteristics such as sympathetic resonance, inter-string harmonics, and repedalling, while also facilitating a smooth response to playing at velocities from low to high and everywhere in between.

In TruePianos-speak, a module (they also have Diamond, Sapphire, and Emerald modules in the full version of TruePianos) represents "a significantly different variant of piano sound". However, it is not specifically sampled from or modeled on any single piano, potentially combining ingredients from multiple pianos as the designers see fit for the overall module. Meanwhile, each module (i.e. Amber in this case) has multiple presets, which alter the character of the piano, and may fit different musical contexts, but which don't change the piano's basic nature. Example preset names for Amber include Default, Bright, Ambient, Narrow, Wide, Studio, and Large. To my ears, the different presets sound like they could be simulating, for example, different mic placements on the same piano.



The default screen in the TruePianos Amber plug-in shows a piano, including a keyboard whose notes depress in response to incoming MIDI notes. It's kind of like watching a player piano play your song. The real action (I'll leave it as an exercise to reader as to whether the pun is intended), however, lies in the Advanced Interface screen. Besides being able to switch presets without a pull-down menu, the advanced interface allows adjusting reverb settings (amount and room size), adjusting the response of the piano (setting velocity threshold and floor, keyboard dynamics, and release time), adjusting the piano's master tuning (default is A4=440Hz), and controlling the master output level from the plug-in.

There is also a separate Options screen where you can decide to choose increased polyphony versus more economical CPU usages, set direct support for multiple CPUs (you probably don't want to use this in SONAR, since SONAR has it's own multiprocessor support), and turn sympathetic resonance on or off. The options screen also has the all-important keyboard dynamics slider to adjust the response of Amber to your controller keyboard and playing

preferences. Once you've done that, you can save the state of the plug-in as the default so it comes up that way each time you load Amber.

Being primarily a piano player, I already had a number of quality piano modules, from the original Nemesys (now Tascam) GigaPiano to the Best Service Galaxy Steinway 5.1 to NI Akoustik Piano, just to name the ones I have used most frequently at various points since I began using SONAR. Quite honestly, I wasn't expecting much from TruePianos Amber, though I was at least curious how it would fare given the mix of techniques used. While it isn't going to replace my favorite sampled pianos, I have to admit Amber pleasantly surprised me. Not only did it sound more realistic than I'd expected, but, once I had its keyboard dynamics configured to suit my tastes, it also responded quite nicely. I can easily imagine it being an excellent starting point for someone who doesn't yet have another high quality piano module, or an extra flavor for someone who does. All and all, it's an excellent addition to SONAR Producer Edition's overall back of tricks, especially for new users who are wanting to get the most bang from their buck for an overall music-making package.

Playing Around

As of this writing I've had SONAR 8 installed for almost six weeks, and have used it for all my projects since installation. Even for projects I'd begun with SONAR 7, there was never any temptation to go back for any reason. Projects I've worked on during that period include a number of remixes of older recordings (include one that dates back to Cakewalk ProAudio 9), a few mastering projects, and some new mini-projects, including one instrumental-for-video work. I also used SONAR as a tool for learning to play several songs I'd be playing behind guest artists at one of my shows -- I loved the new Solo features for that particular use!

In all that time, SONAR has been equally stable to SONAR 7, which was already stable for me aside from the specific scenarios I mentioned above with respect to NI's KONTAKT 2 Player. I have also been able to use it at lower latency than I'd been able to do with SONAR 7 without getting dropouts, so that is a nice bonus. Thus, even without considering visible new features and toys, the upgrade was worthwhile.

When it came to the new integrated features, the situation got slightly dicier. On the one hand, there were a few clear productivity benefits, like the exclusive solo mode and solo override and the Insert Send Assistant, and I really like the potential for space savings with the instrument tracks. On the other hand, the bug I mentioned above with respect to track numbering when there are multiple instrument tracks in a row caused me a number of headaches. I frequently found myself having to split instrument tracks out to MIDI and audio tracks, then merge them back to instrument tracks later, to work around that issue, which affected a number of different areas of my use of the SONAR. I was also disappointed in a number of areas where I felt a new feature, as I'd read into what was written up in the Cakewalk marketing materials, decidedly felt like a version 1.0 design, with clear "could have been" implications. Foremost among these is the live softsynth bounce feature.

When you add the new toys to the picture, things got noticeably sweeter, with Channel Tools, Tube Leveler, and Transient Shaper quickly moving to "how'd I ever live without them?" status, and Dimension Pro also being a particularly welcome addition to my already large arsenal of softsynths. If I hadn't already had the full version of Guitar Rig 3, I strongly suspect I'd also be adding a mention to Guitar Rig 3 LE here.

All in all, had I kept using SONAR 8 as I'd used SONAR 7, while adding the new toys, new solo modes, the Insert Send Assistant, and a few other new features, I'd likely be reporting an unqualified success. As it is, the instrument track issues are a significant, though non-critical, qualifier, while some of the other new features I thought might have been big wins turn out not to be as exciting as I'd hoped (at least as of SONAR 8.0.2). On balance, though, I can work around the instrument track issues (including by not using instrument tracks, though having them is so nice, other than when the issues show up, that I can't bring myself to do that), ignore the features that aren't doing anything for me personally, and still end up with very nice net wins on the overall upgrade.

Closing Notes

The bottom line is that, whether you're looking at new toys in the SONAR 8 Producer Edition or performance optimizations and the Channel Tools plug-in that will affect all SONAR users, you're looking at serious benefits from the SONAR 8 upgrade. While some of the new features have some issues, they are new features, and Cakewalk has a history of improving features based on user feedback. Thus, I hope, between the obvious bug fix needs in the instrument tracks' track numbering area and areas where specific new features could have been more powerful to be more useful in practice, we will see some forward motion as time goes on.

There is one area I have not yet mentioned that I would be remiss not to bring up here. In the "Closing Notes" section of my SONAR 7 Producer Edition review, I wrote:

I will admit to one key disappointment with SONAR 7, and that is the lack of improvement in the area of notation capabilities. I've mentioned in the past feeling that this was perhaps one of the main areas where SONAR lags behind some important competitors, most notably Cubase, LogicPro, and Digital Performer, and this limitation hurts SONAR in notation-heavy markets such as orchestral film scoring. I was encouraged a few months back when Cakewalk put forth a user survey almost entirely dedicated to sussing out users' notation requirements. Maybe for SONAR 8...

Unfortunately, not only did SONAR 8 not provide any enhancements in the area of notation, but I also now have to add ProTools to the list of competitive products that have surpassed SONAR in this area. To add insult to injury, ProTools had no notation capability prior to their latest version, but their acquisition of Sibelius a few years back has allowed them to do far more than play catch up in their latest release. I hate to sound like a broken record, but maybe for SONAR 9...??? Pretty please with sugar on top?

That said, despite the feature-specific issues here and there and the lack of notation enhancements, I do feel SONAR 8 is a must have upgrade. I applaud Cakewalk's focus on under-the-covers optimizations that might not have as much sex appeal as a raft of visible new bells and whistles. I believe that is something most existing SONAR users will welcome. Oh yeah, and the Producer Edition toys are really nice, too!

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