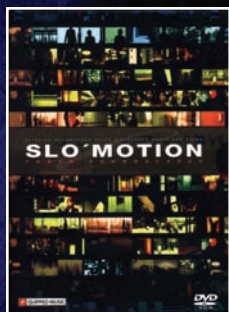


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JANUARY 2008 - VOL. 4 NO. 1

virtual instruments



Tokyo Soundscapes



Cakewalk Rapture
(Very Deep Clinic)



Apple Logic Pro 8



IK Multimedia SampleTank 2.5

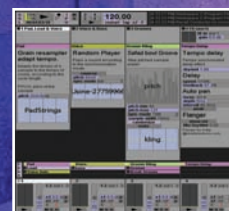
Big Fish Audio LA Drum Sessions Vol.2



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Modular host
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Dan Dean Solo Strings
PAV Blüthner Digital Model One



Way Out Ware/M-Audio KikAxxe

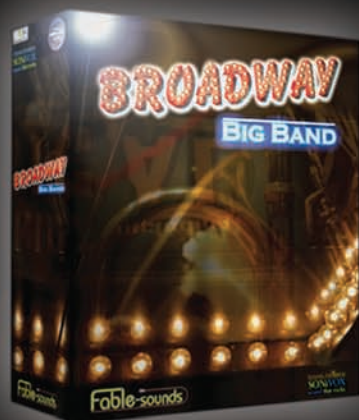
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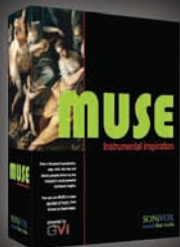
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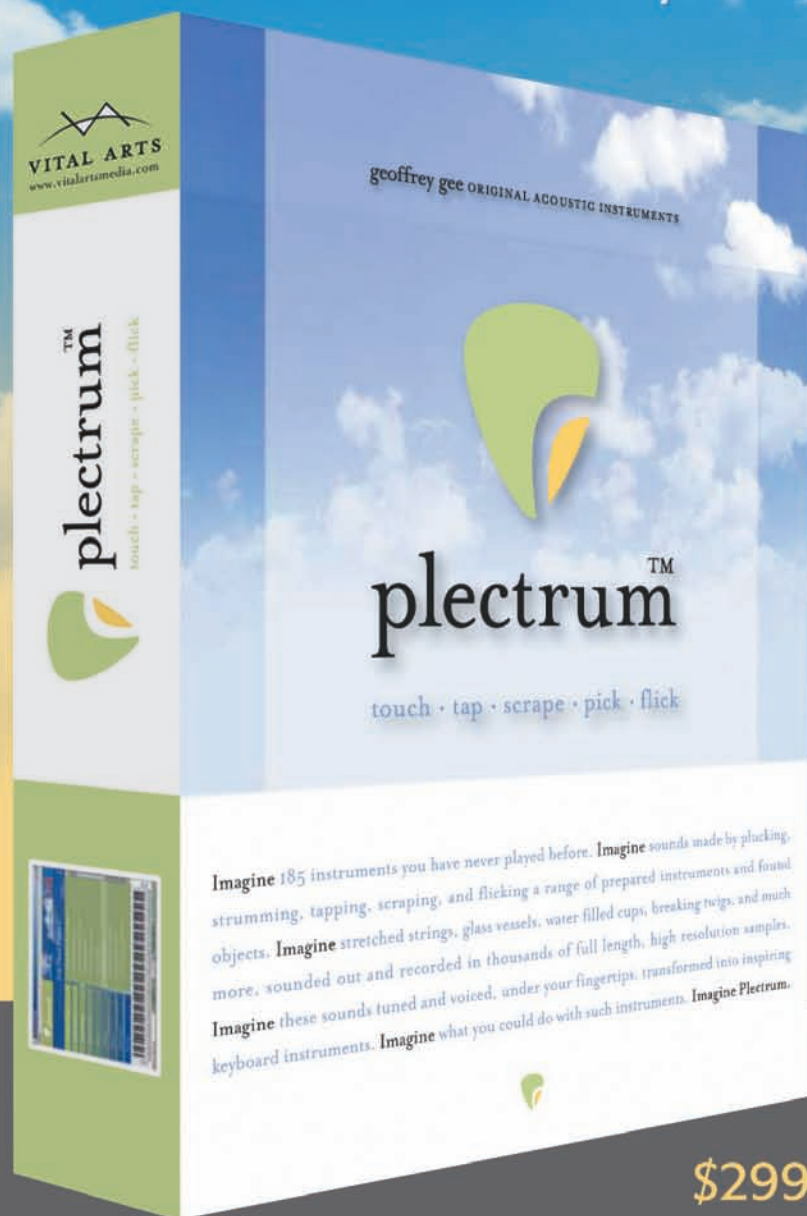
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THE FUTURE OF SOUND

From the Editor

Well, we're at the end of another year and the beginning of a new one, so this issue's last-page "Trends" column is a look back at 2007. Hopefully it succeeds in providing some insight into what's going on in our field.

But there's a problem with writing this kind of article: as soon as you think you have everything covered, something else comes along. Or, to be perfectly honest, something you should have added to the article occurs to you.

(We'll be careful to avoid mentioning a third potential problem: someone reminds you—after the article is in print—that obscure xxx model yyy from 1992 did something you believe was first introduced this year. There's invariably a club of enthusiasts of that model, and all eleven members are *steamed*...)

Here's an example of something that could have made it into the "Trends" article. In this issue we review the PAV Blüthner Digital Model One grand piano library. In addition to pedal-down samples, this instrument uses convolution processing to model the pedal-down/dampers-off resonance of the inside of a piano. They really got the sound right, and that's a significant advance. Actually they got a lot of things right.

Taking a step back, it occurs to me that while they all sound different from one another, *most* of the better known sampled pianos on the market are pretty darn good. At some point during the past few years we crossed a threshold where you could proclaim the

technology mature.

Before this vaguely defined threshold was crossed, sampled pianos hadn't improved a whole lot since the early 80s.

Sure there were some good ones, and obviously they worked well enough for digital pianos

to be a significant category in the music instrument industry. But they invariably sounded brittle, dry, and thin in the midrange; even an untrained ear could often hear that something wasn't quite right.

That giveaway midrange is simply no longer an issue. There are now several pianos besides the Blüthner that are well past that hurdle, such as Synthogy Ivory Grand, Art Vista Virtual Grand...even Pianoteq's instrument, which uses additive synthesis instead of sampling doesn't have that telltale problem.

Does that mean the piano nut is cracked and we've reached the end of physics? Hardly. There's still a big difference between a real piano and a sampled one—as is the case with pretty much every instrument. Pianos have a lot of complicated behaviors, and all sampled pianos fudge over much of that.

And if you hold down the sustain pedal and strike a low note on a piano, the sound evolves constantly for a good minute. It's a wonder even today's pianos work as well as they do, given the intricacy of the sound. But they do work, and they're a lot of fun to play.

Season's Greetings and Happy New Year from all of us. May 2008 be your best year ever.

—NB



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The world of softsynths and samplers

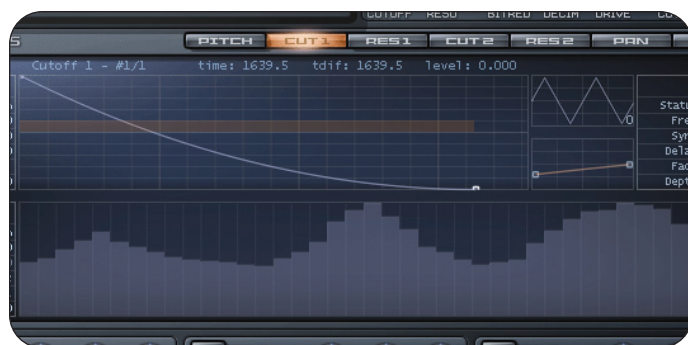
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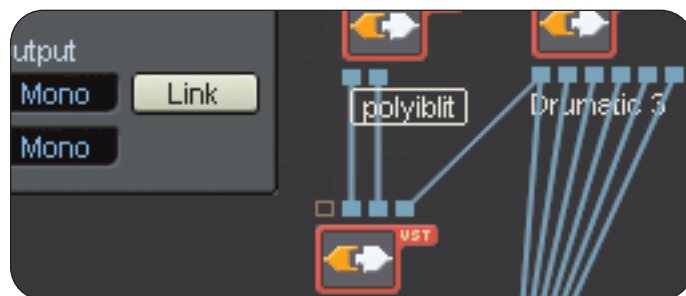
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by Michael Marans

This issue's Voltage Control series features a clinic on Cakewalk's heavenly softsynth



30 Windows Modular Host Round-up*

by Peter Dines

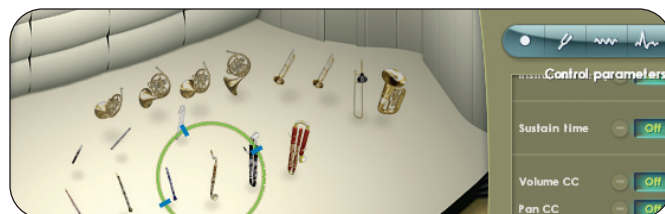
Stand-alone hosts can do a lot more than act as dumb players. Here's a look at the capabilities of five of these programs: XT Software Energy XT 2, Sensomusic Usine, Plogue Bidule (*which has a Mac version too), Art Teknika Console, and AudioMulch



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by Frederick Russ

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Apple Logic Pro 8

by Nick Batzdorf

The long-awaited update features a streamlined interface that makes it easier to get started, unlimited memory access in the EXS24 sampler, support for multiple processing cores, a suite of utility programs, a 50% price reduction, and and and...

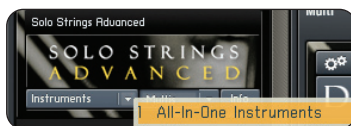


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Letters

Please send your questions
and comments to
Letters@VirtualInstrumentsMag.com

In-line or send/return convolution?

I've heard that with convolution reverbs you should insert the plug-in in your channel strips. That uses up my computer's DSP, since I'm using so many of them.

Is it true that you have to do that?

Bernard Schwartz
Chicago, IL

This is a basic engineering issue that comes up all the time, so let's start from the top.

If you run a signal, say an instrument, through a convolution processor, it's very close to actually playing it through or in whatever has been impulsed—a room or other space, an amp or signal processor, the belly of a whale...whatever. So the question is whether you should run the entire signal through the convolution processor or put it on an auxiliary send/return path when you're using it as a reverb (i.e. a room or space simulation). After all, you don't listen to a violin dry and in a room at the same time.

Well, it's normal to put reverbs on send/return paths in order to share them with all the signals you're running through them (Fig. 1). That was even more true in the days when all good reverbs were rather than plug-ins, and you only had one or two available.

On the other hand, you'd normally run the entire signal through an amp, so it stands to reason that you'd want to run an entire DI guitar through the impulse of that amp rather than mixing in just a little bit of the amped sound. (Remember we said normally.) Same with any other effect as opposed to signal processor—the difference being that you mix in some of the effect and process the entire signal. Chorus units and digital delays are usually treated as effects, while equalizers and compressors are signal processors. Usually.

Reverb is an effect, so isn't convolution reverb just a different way of creating the same effect? Just because it's a sampled reverb rather than an algorithmic one, that shouldn't change anything, should it?

No it shouldn't, and there's no reason to treat a convolution reverb any differently from an algorithmic one. Sure, put it on the send and share it with multiple channels.

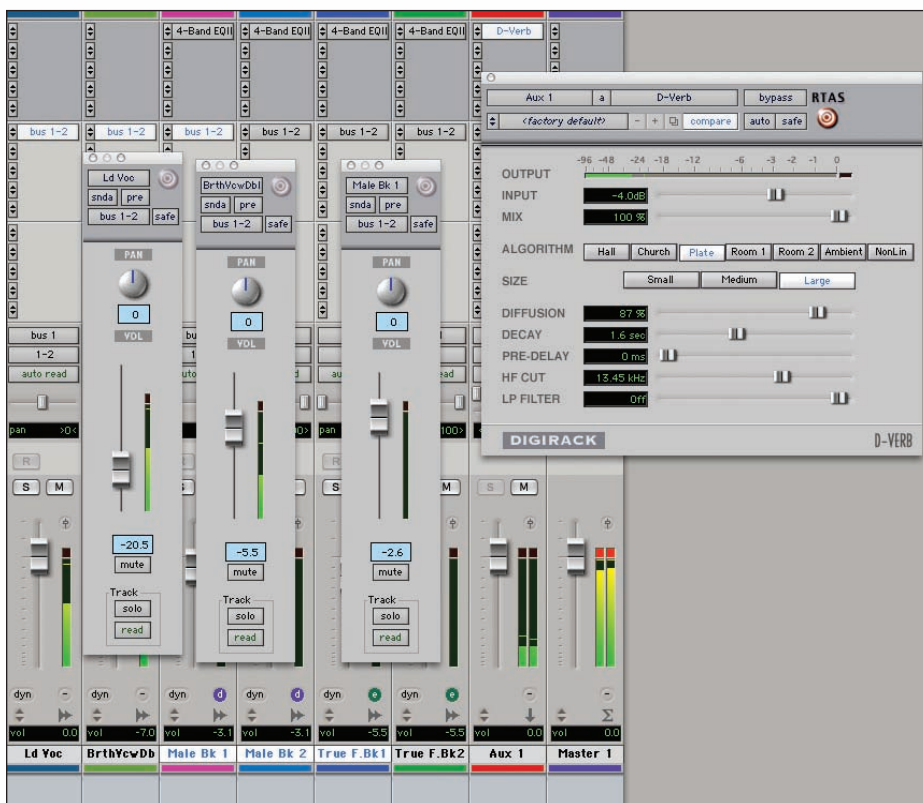


Fig. 1: The standard way to connect a reverb on a send. You know the set-up—the vox are all sharing the same plate reverb, and the floating bus strips (usually post-fader) in the Pro Tools mixer control the levels going to the shared reverb.

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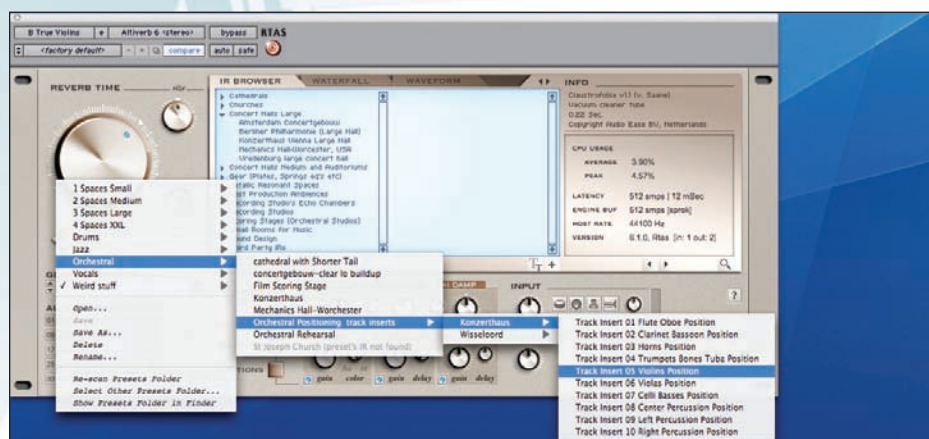


Fig. 2: Audio Ease Altiverb 6 includes early reflection positioning presets for different instruments in the orchestra, but you can create the same thing in earlier versions yourself. And of course this works just as well on non-orchestral instruments. You have to set it 100% wet.

Or not. The best way to route a signal depends on what you're doing with the early reflections. Early reflections are the first seven sounds that reach your ears; they precede and are separate from the reverb tail, and tell you a lot about the space you're listening to and the instrument's position in it. They're the direct path from the instrument plus the first six bounces: the ones off the front, rear, and side walls; the floor; and the ceiling.

Now, having been recorded in a room of some kind, sampled instruments can't escape having some early reflections as part of the recording; if you then use the early reflections in the convolution reverb, you're doubling up. What does that have to do with the way things sound in real life?

Not all that much, even if the instruments are recorded from a distance in a room with

short reverb—the prime example being VSL. But as you've undoubtedly experienced, when the sound is coming through speakers, the ear is capable of a huge suspension of disbelief when it comes to the spaces sounds are placed in. You can usually run a relatively dry sample (or one with short reverb) through a reverb program with a different predelay from the one on the recording no problem.

For that matter, it's normal to use several totally different rooms on a recording. The snare might be sent to a plate reverb, the drum overheads a small room, the toms a larger room, electric bass a very small room, guitars a small room plus they're hard-panned to the sides, horns a medium room, strings a larger room with a long predelay...and so on. The ear accepts it all.

But back to predelay. One of the best and most realistic ways of positioning instruments in the soundfield is to use the predelay from a convolution processor. As a matter of fact, Audio Ease Altiverb 6 has special predelay-only presets for positioning orchestral instruments. If you're using them, you use them in-line on individual instruments or sections (violins, etc.) for positioning and turn off the reverb tail.

Then you send all the instruments to a shared hall reverb with the predelay turned off. They're all in the same space, but they're all positioned differently.

All this is a long-winded way of saying that you can put convolution reverbs on sends just like traditional reverbs, but you can also use them in-line if you want a discrete early reflection on an instrument (whether or not you also use the reverb tail). **V**



Fig. 3: The Violins Positioning program loaded into Altiverb. Its reverb tail is turned off; only the early reflections are used, and then all the instruments are sent to a common reverb program with the reverse—tails on, early reflections off. While the front-to-back positioning provides a very clear image, you might still want to use standard pan and width controls to set the left-right position more dramatically.

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Introductions, updates, news



Breverb

Overloud Breverb is billed as a high-end algorithmic reverb plug-in (as opposed to a convolution processor), designed to recreate "the sound of ultra-expensive hardware reverbs while keeping the CPU load very low. One of the controls is Motion, which to inquiring minds suggests Lexicon's Spin parameter.

The \$399 AU, VST, and RTAS plug-in has hall, room, plate, and inverse algorithms and features an EQ section, six "hardware" faders, an Extended Nonlinear section to mold the shape, host sync (parameters change with the tempo), and more.

www.1llo.com, www.Overloud.com



Native Instruments Koresound Packs

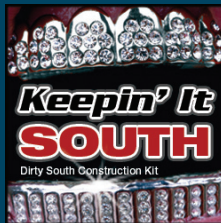
NI has introduced a series of affordable (\$59 each) sound packs that run inside their KORE 2 host/plug-in. You don't need to own the actual synth to run the sounds in KORE 2, and one free download pack is available for any KORE 2 owner.

The first for KOREsound packs are: Best of Reaktor vol. 1, Best of Massive, '57 Drawbar Organ, and Synthetic Drums Reloaded, with more to follow.

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Keepin' It South and Dirty

Samplebase.com offers two new \$29 sample collections, both aggressive Hip-Hop Soundblocks from Catalyst Audio, Keepin' it South and Keepin' it Dirty include "808 thumping construction kits filled with cocky, infectious loops, all with the cart-topping sound of Dirty South."



The loops can be stretched using Samplebase's sample playback synth engines. Each Soundblock contains pre-constructed mixes, a playable intro, verse, chorus, and outro, with lots of mix options.

www.Samplebase.com



Digidesign Mbox 2 Micro

This little USB unit is not a flash drive and it's not a dongle. Well, it actually is a dongle for Digidesign Pro Tools LE, but it also has a built-in 1/8" stereo headphone amp and a volume control. The idea is for it to stick on a laptop to create a very portable and inexpensive (\$279) 24-bit/48kHz playback-only Pro Tools system; you record with the larger rig that you left at home.

Mbox 2 micro comes with Digidesign's Pro Tools LE DAW software for Mac and Windows, as well as 45 Bomb Factory and DigiRack effects plug-ins plus the XpandI sample playback/synthesis workstation V.I.

www.Digidesign.com

IK Multimedia Advanced Room Correction



ARC is a room correction system that generates a plug-in that works in any of the popular Mac and PC formats. Using the included calibrated measurement mic, the software sweeps your room and generates settings for the plug-in to correct for both time and frequency problems in your room. The process is considerably more sophisticated than just using an equalizer to try and solve room problems.

You can pick one of four target curves. ARC runs \$699, \$499 if you own any other IK products.

www.IKmultimedia.com

MOTU MachFive 2

Version 2 of MachFive, MOTU's universal sampler instrument (\$495, updates \$195), is a major new update that includes: 32GB of sounds, unlimited part per instance, a new graphics engine, full-screen editing and programming, a new modular synthesis architecture, keygroup layering with rule-based switching, a built-in mixer, 47 effects including convolution reverb, a groove slice engine, sample time-stretching, unlimited multi-point envelopes, stand-alone operation, and more.



The term "universal" refers to the sampler's ability to import programs in lots of formats.

www.MOTU.com

GForce Virtual String Machine



M-Audio is distributing this Mac and PC module, which emulates over a dozen vintage string synthesizers: Freeman String Synthesizer, Eminent 310, ARP Omni II, ARP Quartet, Crumar Multiman, Polymoog, Elka Rhapsody, Korg PE2000, Logan String Melody, Eminent Solina, Roland RS202, Yamaha SS30, and others.

You can layer two sample sets and apply synth parameters to each layer. Virtual String Machine costs \$149.95 and operates both stand-alone and as a plug-in.

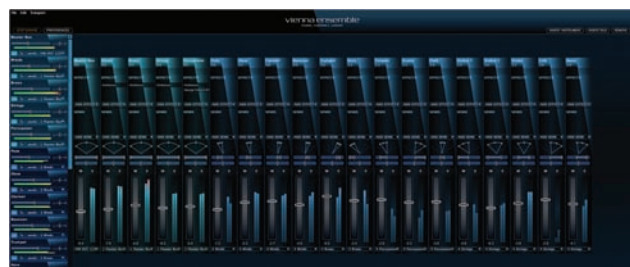
www.M-Audio.com

Toontrack Solo

This stand-alone application hosts Toontrack's dfh Superior and dfh EZdrummer. It's designed for real-time, low-latency operation, and features a mixer with 16 physical outputs. Each instance can be assigned to a different MIDI channel, and specialist MIDI controllers are supported.

Toontrack also announced a Mac utility, SoundMover, that will move its libraries to another hard drive. Both Solo and SoundMover are free downloads for all registered users.

www.Toontrack.com



VSL Vienna Ensemble

Vienna Symphonic Library has introduced free mixing and hosting software for instruments in their Vienna Instruments player. Vienna Ensemble runs both stand-alone and as a plug-in (now in RTAS format as well as the others). It features eight outputs vs. two for the stand-alone Vienna Instruments player and 16 MIDI channels.

The mixer hosts AU (Mac) and VST (PC) effects plug-ins, and it has both panning and power panning (width and pan). Since it's a stand-alone program, it uses its own memory without using RAM in your sequencer. Vienna Ensemble supports 32- and 64-bit Windows XP and Vista; the Mac version runs at 32 bits now, but 64-bit support is coming soon.

Vienna Instruments update 1.13 (a free download) now supports RTAS under Mac OS X and is compatible with Mac OS X 10.5.

www.VSL.co.at, distributed by www.llio.com in the US

Zero-G Classic Disco

EastWest is distributing this dancing loop library with 700+ disco and funk sounds from the 70s and 80s. Classic Disco (\$159.95) includes 35 construction kits in disco underground, funk'n'soul, proto house, Hi-NRG, and funky disco styles. It also has additional piano, electric piano, bass, drum, etc. loops.

The construction kits were developed from the sounds of The Salsoul Orchestra, Evelyn Champagne King, D-Train, Chaka Khan, Quincy Jones, George Duke, and Rockers Revenge. Classic disco comes in Acidized Wav, AIFF, Apple Loops, Spectrasonics Stylus RMX, Rex2, audio formats; and Apple EXS24, NI Kontakt 2, and Propellerhead Reason NN-XT instruments.

www.Soundsonline.com



Apple Logic Pro 8

The long-awaited update features a streamlined interface that makes it easier to get started, unlimited memory access in the EXS24 sampler, support for multiple processing cores, a suite of utility programs, a 50% price reduction, and and and...

Review by
Nick Batzdorf

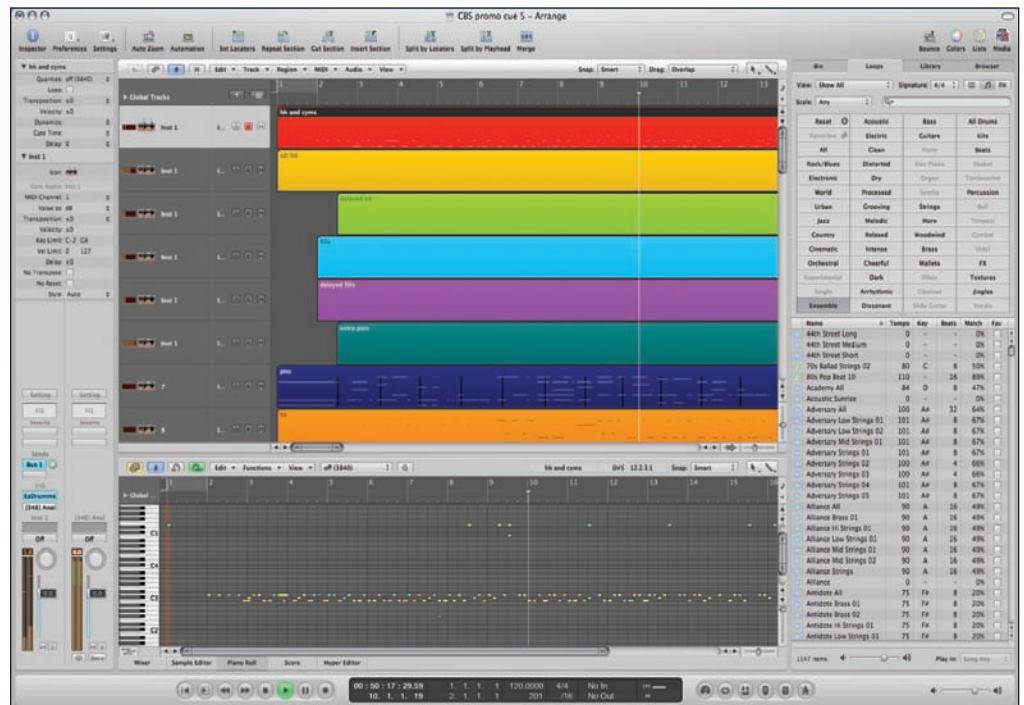


Fig. 1: Apple Logic Pro 8's revamped Arrange window. You can still open separate windows and us screensets, but the screen splits to show editors (piano roll shown here) at the bottom. At the right is the new browser, here showing the library of included loops. Of particular interest is its ability to display a library of channel strips, which should cut down on the number of tracks in most peoples' templates. To the left is the new Inspector, which now includes channel strips for the selected track and the master channel. The transport is now integrated into the bottom of the screen, there are some useful editing commands behind buttons at the top...the interface has been thoroughly streamlined.

Apple Logic Studio, \$499;
upgrades from Logic Pro 6/7
or Platinum Gold 5/6, \$199

www.Apple.com/logicstudio

System requirements: Mac G4
1.25GHz+ (G5+ highly recom-
mended); 1GB (2GB+ highly
recommended); 1024 x 768
display; Mac OS X 10.4.9+;
QuickTime 7.2+

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If you only look at the touted features, Apple's long-awaited update to Logic Pro might not seem to be such a big deal. It's only after you start poking around in Logic Pro 8 that you see how much work they've done on their flagship digital audio sequencer.

Introduced a couple of months ago, Logic Pro 8 is the centerpiece of Apple's \$500 Logic Studio bundle (down from \$1000 for Logic Pro 7). The other programs, which we're not reviewing in this article, are: Soundtrack Pro 2, a post production-oriented audio editing program that comes with both music and sound effects libraries; Waveburner (also in Logic 7), a CD mastering program; Compressor 3, which encodes Dolby Digital AC-3 files; an impulse response recording utility for Logic's Space Designer convolution processor; and finally Mainstage, a live perform-

ance-oriented V.I. and plug-in host. We plan to take a closer look at Mainstage in the near future.

Logic Pro 8 includes by Apple's count 40

Fig. 2: The New... dialog now presents a large selection of preset templates (plus your own behind the "My Templates" folder button). The right side shows what you get if you load the Electronic template: lots of instruments ready to go. This should help make the program far less intimidating to new users.

virtual instruments and 80 effects plug-ins. Even though most of those V.I.s are Garage Band instruments (samples embedded into a basic EXS24 player—many of them quite good), it still has the EXS24 sampler, an electric piano, a tonewheel organ, a clav, an interesting modeling synth, an FM synth, analog synths, a vocoder, more more more... And then you get to the plug-ins, including a linear phase equalizer, a convolution reverb unit, an audio analyzer, guitar and bass amps, a tuner...

...And then you get to the large library of loops and instruments from the five Jam Pack titles, which are add-ons for the Garage Band program, the simplified (but actually pretty serious) digital audio sequencer that comes on all new Macs.

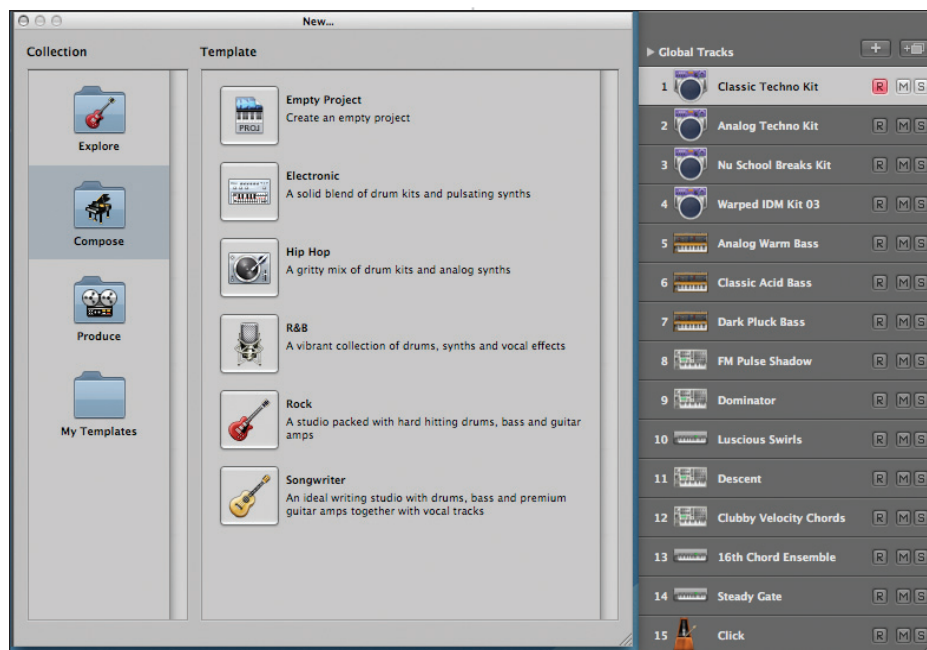
It doesn't end, does it; Logic Studio is obviously a silly amount of very good software for \$500. Equally obviously, we're going to have to paint this review in broad strokes, because this is a magazine and not a book.

New features

The touted list of new features in Logic 8 is short: a streamlined interface, simplified set-up with some preset templates, multi-take recording, a new comping feature that makes it easy to stitch together takes, sample-accurate editing in the main Arrange window (a much requested feature), improved surround sound, and serial number authorization instead of a dongle.

That took three years?! Ah, but then you get to the more hardcore features that aren't shouted about as much (unless you read last issue's "Trends" column): unlimited RAM access in the built-in EXS24 sampler; support for multiple processing cores; Logic Nodes, which lets the program offload calculating third-party processing plug-ins on remote machines over ethernet (Nodes used to work with Logic processing plug-ins only); the ability to route auxes to tracks for recording, a previous omission; and you can now keep keyswitch notes out of the score display. Also, people who aren't new to Logic will be very happy about the fixes to a number of longstanding bugs.

We ran Logic Pro 8 on two Macs: a dual 2.5GHz G5 with 8GB of RAM, running OS



X 10.4.9 and 10.4.11; and a 2.2GHz Intel Core2 Duo MacBook Pro with 4GB of RAM, running OS X 10.5.1. The program runs solidly on both systems, with the caveat that most but not all third-party instrument and processing plug-ins are even Intel-compatible, never mind compatibility with OS X 10.5 and Logic Pro 8. Most of them work in Logic 8 under OS X 10.4, but there are some that didn't as of this writing, for instance some of the third-party libraries that use a Native Instruments Kontakt (1 or 2) player.

Check for updates; things change fast in our field.

The interface

Logic Pro 8's most visible change is that the Arrange window (Fig. 1), the program's main screen, can now split to show/hide some other "sub-windows." The idea is to have as much as possible in one window; with everything in plain sight, the program is easier to grasp and navigate.

A number of things have changed, though, so it does take a little while for Logic users to become familiar with the new version. The key commands can still be customized, but many of them are different. Menus have been shuffled around a little. You control/click on a track rather than click-holding it to get at its assignments. That kind of thing; none of this is especially daunting, but it is new.

The revamped Arrange window works by letting you show/hide various editors (piano roll, sample, score, or a mixer) at the bottom of the screen. You can display a smashing new browser or various edit lists

(events, markers, tempos, and time signatures and key signatures) at the right. You can still open full windows for all the editors just as before, but you don't have to if you don't want to.

Logic Pro 7 was able to save and recall channel strips, but the browser takes this to a new level. First, there are some preset channel strips, which incidentally are shared with the Mainstage live performance host. But most people will be able to get by with far fewer tracks in their templates by having everything in a list ready to go. The browser also contains categorized loops (starting with the included ones), an audio bin, and a file browser for sessions. Great feature.

At the left is an expanded (over Logic Pro 7) MIDI and audio track or region information section called the Inspector, where you set things like MIDI channels, on-the-fly quantization, velocity or transposition values, key range limits, track assignments, and the like. The Inspector shows two channel strips for the currently selected track: the one it's assigned to, and now a master level—very useful.

With all the changes, Logic Pro 8 is still Logic, and you'll almost certainly continue to take advantage of its screensets rather than just staying in the Arrange window. Screensets are Logic's system of interactive windows that you can place wherever you need them, and then freeze the whole customized set-up for recall at the touch of a button in any Session. You don't have to use, say, the piano roll editor at the bottom of the screen—you can still open selected regions in a full window as before.

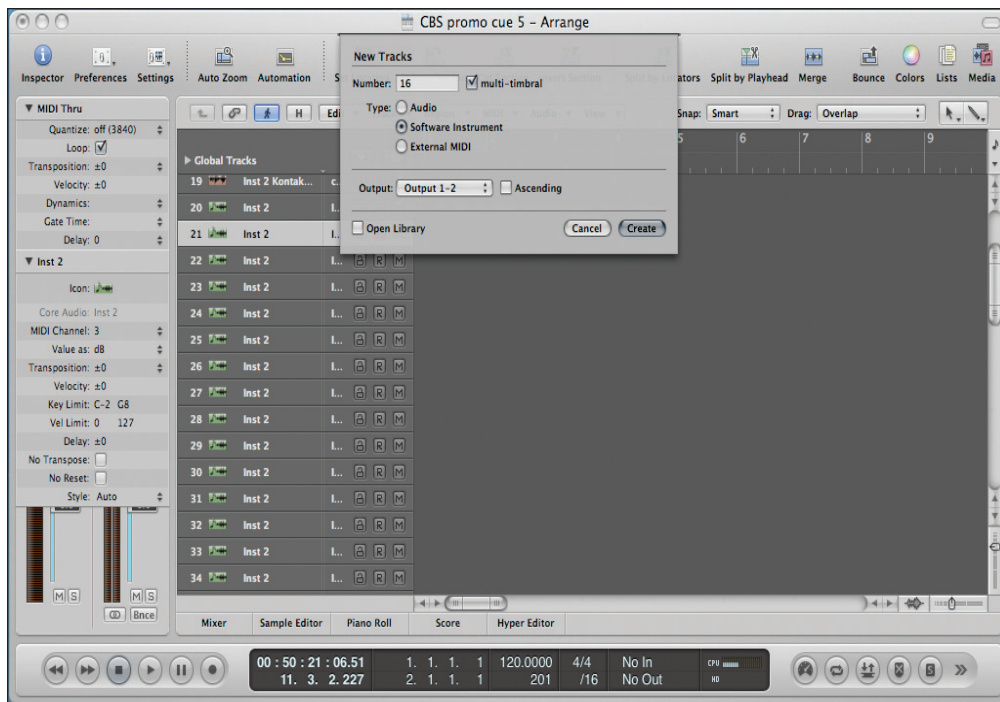


Fig. 3: In addition to creating auxes to field audio outputs if you insert as Multi Output software instrument output, Logic Pro 8 now sets up tracks for each MIDI channel if you create a track for a multitimbral software instrument! This saves a lot of fooling around under the hood you had to do in earlier versions.

It's the Screensets feature that lets you set up custom mixers that organize and place your entire rig under control just how you want it—audio tracks, internal and external instruments and audio sources, internal and external effects, and so on. "Autoload" templates from previous versions work with only minor window adjustments, although the new windows (standard ones anyway) can't be shrunk quite as small and therefore may overlap in some older screensets. Another obscure and minor grumble: I find the corners hard to grab when you go to resize the windows. But on the upside, the track resizing buttons in the window scroll bars are pretty nice.

While these templates you develop over time are subjectively the best part of the program, you shouldn't need to deal with somewhat advanced set-up routines before you can even use Logic and get audio to come out its mixer. Apple realizes that the knock on Logic has always been that it's hard to learn—a rep with some truth, yet I've always found it overblown—and in Logic Pro 8 it's considerably easier to get started.

Set-up

The first thing Apple did is include a healthy variety of templates (fka Autoloads) that you can use as starting points (see Fig. 2). These templates appear whenever you go to create a new Session, and they're categorized into different actions: Compose, Produce, Explore; and then types: Electronic, Hip-hop, Guitar Tones, Stereo Mastering...there are quite a few within these types.

The templates load up different combinations of Logic instruments and effects, all set up in tracks ready to play. Or you can load a template set up for audio recording, and so on. It's very easy to get started without having to deal with the Environment.

The Environment: the one aspect of Logic that new users found so terrifying, when actually it's where the program's power lies. This is where all the MIDI audio routings are assigned, where you build custom mixers...in general you can set up graphic objects to do all kinds of useful MIDI processing. If you want to see how far it's possible to stretch the Environment, our July 07 issue features the late Michael Brecker's wind controller environment. A screen dump is available behind the More Online tab on our website (www.VirtualInstrumentsMag.com). It's pretty remarkable—but please don't make the mistake of thinking that's what you have to deal with to make music in Logic!

In fact, in Logic 8 you may not even

need to open the Environment to accomplish most tasks—it's just there, working behind the scenes. You simply create a new track and assign it; if you load a virtual instrument with more than two outputs, the program creates aux strips on the mixer to field the additional outputs. In the past it was necessary to create and assign them.

Even better, if you create a multi-timbral software instrument (one with different programs on different MIDI channels—see Fig. 3), the necessary tracks are preassigned for you. You used to have to go into the Environment and cable a Multi Instrument object to the Audio Instrument object or else create multiple Audio Instrument objects assigned to separate channels while standing on a wooden dresser with the middle drawer open and pinching your left ear with your right hand.

Logic Pro 8 has a considerably friendlier face for new and old users, and the revamped interface is a definite step forward.

Performance and adaptation

Updaters to Logic Pro 8 will notice a lot of little changes and fixes. For example, the first note you record into an EXS24 sampler at bar 1 beat one no longer disappears. There's no Audio window. The audio interface set-up has been moved under the Preferences menu (where it belongs).

These changes are not enough to be totally disorienting, but you'll probably find yourself referring to the manual—which has gradually improved to the point that it's now very good—once in a while. Also, some very old Logic sequences that will import into Logic 7 don't import into Logic 8, so you may want to keep the old version installed after you make the upgrade.

Logic Pro 8's windows update a little more slowly on the test G5 than Logic 7's, but subjectively not enough snap is gone for it to be an issue. The Windows zip right along on the test MacBook Pro running the latest OS X 10.5, but then its screen is 15" vs. the 30" one on the G5, so it has far fewer pixels to update and the comparison isn't fair.

As to actual performance, Logic Pro 8 can be a little less efficient in some instances. The same looped sequence with one Space Designer convolution reverb that used about 35% of one CPU in Logic

CONTINUED ON PAGE 52

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VERY DEEP CLINIC:

The Joy of Rapture

This issue's Voltage Control series features a clinic on Cakewalk's heavenly softsynth

by Michael Marans

How many times can the basic subtractive synthesizer be reinvented? Apparently an infinite number of times, as proven by Cakewalk's Rapture, one of three powerhouse synths you'll find in the Cakewalk Instruments VIP Suite. (The other two are Dimension Pro and Z3ta). Rapture follows the basic structure of typical synth: oscillators, filters, modulators (e.g., LFOs, envelope generators), and effects, then loads it up with whipped cream, cherries, chopped nuts and chocolate sauce—more than enough decadently rich ingredients to create enormously fattening sonic sundaes.

We'll first explore some Rapture basics—primarily because the interface breaks from tradition on a number of levels, making some familiar functions appear, at first glance, somewhat alien. Then we'll dive into some of the more unique sound design applications Rapture's architecture puts at your fingertips.

It's element-ary, my dear Watson

Perhaps the primary design feature that sets Rapture apart from virtually all other synths is that it's really six synths in one. Each patch/preset/program (call it what you will) contains six *elements*, each of which is a complete synthesizer—oscillator, DSP section (two resonant multimode filters and a couple of bit-manglers), a set of modulators, EQ, and effects.

As if that weren't enough of a departure from the norm, each element is fully fleshed out with separate envelopes for pitch, amplitude, panning, and filter's cut-off and resonance (independent per filter). Each of those functions also has its own LFO and programmable key tracking. Along with more mundane utilities such as key range, tracking, pitch-bend range, tuning, and phase (and others too numerous to mention), an element also includes ring modulation, thickening/detuning (up to nine layers), panning, insert effects, and the most ridiculously capable (and fun) step sequencer we've come across to date.

Oscillator sources can be any of the provided waveforms (we lost count), your own



Figure 1. Rapture is actually six fully programmable synthesizers in one, each with a full complement of musical and highly flexible parameters. Shown here is the main screen, with an envelope generator and a step sequencer both modulating the filter cutoff of an “element” (one of the six synthesizers). The brown shading in the envelope section indicates that the segment’s time value is under velocity control.

file (up to one minute in length), a sample map, and so on. Oh yeah, and the oscillators are stereo (though mono files are also supported). Rounding out the picture: the kitchen sink and an electric garage door opener.

The envelope, please....

Rapture’s envelopes are about as flexible in their implementation as you could possibly imagine, with practically unlimited independently programmable segments. As they say, that’s both a blessing and a curse. The architecture is wonderful for setting up exquisitely detailed modulations. But how the heck do you get a simple ADSR? Here’s how:

Start by clicking on the Program Handling icon (the one that looks like a piece of paper with a bent corner) at the top center of the Rapture screen. Select Initialize Program, and answer Yes to the prompt. Now click on the E1 button to select Element 1, then click on the blank rectangle labeled Empty imme-

diately below it. This will cause the waveform menu to pop up. Select any wave you like—we’re using saw 8080, then click Open. Play a few notes, and you’ll hear plain vanilla sound.

Turn your attention to the row of envelope select buttons above the envelope grid. Click on AMP at the far right. When that button is lit, the envelope whose parameters you’re adjusting will affect the Element’s amplitude output.

Now turn Status ON to enable the envelope. Next, right-click anywhere in the grid to make an envelope point (Rapture calls this a node). Right-click again to make a second node and again to make a third. Note that you can freely drag the nodes up and down to affect amplitude and left and right to adjust time. The results of our

clicking and dragging—a sublimely basic envelope—are shown in Figure 2.

Play and hold a note and notice how the note plays through the envelope stages then comes to the final node and sustains indefinitely. Lift your finger, and the note immediately cuts off. So where’s the nice smooth release? That’s what we’re going to create.

Click on the second node to select it. Now click anywhere in the information bar immediately above the envelope grid. Select Set/Clear Active Node as Sustain in the pop-up menu that appears. A vertical line is drawn under the node to indicate its status as the sustain point. When you play a note, it sustains at the level set by this newly-appointed sustain node.

Now that you’ve established a sustain point, the following segment automatically defines your release time, with the position of the last node setting the final resting level of the released note.

Loop d’loop

Being able to loop an envelope segment is a powerful feature. But as with creating a release segment, setting one up in Rapture is not entirely intuitive. Here’s the secret:

With the second node established as the sustain point (above), click on the first node and then on the information bar. This time choose Set/Clear Active Node as Loop Start. A box will be drawn that encompasses the first and second nodes, appearing to indicate the looped area of the envelope.

As such, you might expect that when you play a note, the envelope would play through to the loop end point, then cycle

Figure 2. Envelope segments and breakpoints (nodes in Rapture) are easily programmed using click-and-drag editing. Shown here is a simple ADSR-style envelope. The vertical line under the third node indicates the sustain point.





Figure 3. Rapture's envelopes support looping a segment, allowing for the creation of very sophisticated modulations. And with seven envelopes available for each of the six elements, there can be a whole lotta loopin' going on. Here three different loops modulate a single element's pitch, filter cutoff, and amplitude.

back to the loop beginning, then play through to the end, and on and on ad infinitum. Naw, that would be too easy and logical.

In fact there's another step necessary to create a loop. Right-click again in the envelope grid, making sure that you click somewhere *within* the loop box. As expected, this creates a new node. Drag the new node to a location that's substantially different than the node that follows, then play a note.

Notice that the segment that is looping is the one that spans this new node and the one that follows. (Figure 3.) Move the node around to hear the effects of the loop. (Note that you'll need to retrigger your note in order to hear your edits.)

Now that you have a bona fide loop, you can adjust it to your heart's content by moving any or all of the nodes as necessary (left/right for time, up/down for level). You can also manipulate the curve of the each segment independently as well as its response to velocity (see the manual for details).

Steppin' out

Although Rapture can be operated multitimbrally, with each Element responding to

its own MIDI channel, the real fun begins when you set up six independent sounds that interact with each other timbrally and rhythmically, and trigger them all with a single note-on. Let's do that, shall we?

We'll be focusing primarily on the step sequencer to create our sound, but we'll explore a few of Rapture's less obvious capabilities along the way. Let's start with Element 1.

Begin with an Initialized Program, and select saw 8080 for the E1 oscillator wave-

below Ring Mod; the default value is 10 cents. We like using 8 cents for a slightly more subtle effect. You'll also want to keep the Quality parameter set to Hi. This uses more CPU power than Std (Standard), but makes for a cleaner sound. If you've got the CPU mips to spare, don't skimp here.

In the 6-element program we're creating, Element 1 is going to be playing one of the counterpoint melodies, so let's set that up now.

Click in the PITCH button in the MODULATORS row, then turn the Status of the STEP sequencer to On. We want an 8-step pattern, so enter 8 in the Steps box (16 is the default). We'll skip Freq, since we're controlling the Step speed as a function of note values, not Hz. With that in mind, set Sync to 2, which means the pattern will repeat every two quarter-notes, or twice per bar.

Next is "Smooth," which creates glides between steps rather than hitting them abruptly. We'll set it to 21, totally arbitrarily. (Your arbitrary may vary from ours; we just liked the amount of glide that a setting of 21 provides.) Depth sets the range of the steps. In the case of pitch modulation, the maximum range is 9600 cents, or eight octaves. We'll use 2400, i.e. two octaves.

You can enter the notes of the pattern easily with your mouse, but that approach is somewhat inexact. Here's our preference: right-click on one of the steps to access the pop-up menu. In the menu are various

Perhaps the primary design feature that sets Rapture apart from virtually all other synths is that it's really six synths in one.

form. Play a chord. Boring, n'est ce pas? Let's eliminate the ennui.

In the group of tiny boxes around the oscillator name is one labeled Multi. Click on the "off" box adjacent to it and 3v appears in the display. Now play a chord. *Voilà!* Thickening, detuning, and a stereo spread! Click again (5v) and the sound gets bigger. Again (7v), bigger still. And yet again (9v) to positive gigantcity! (Remember to retrigger your chord each time you advance the parameter value to hear its effect.)

The amount of detuning of these layers is controlled via the Detune parameter just

"snap" functions, which are handy for nailing exact scale tones. Rapture doesn't give you a readout of the scale tone or the frequency in Hz as you enter a step's value (hint, hint, Cakewalk engineers), so you'll either have to use your ears or the MIDI Note Entry mode.

When using the latter, note-entry is based on C4 being the base note. So for our pattern we'll play E5, G4, C5, C4, E5, G5, C6, C5. Note that steps advance automatically when using this mode; you can back up a step to correct a mistake (not that you'd make one, mind you) by hitting any note lower than C4.

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Figure 4. Complex step modulations can be drawn freely with the mouse. Shown here are the filter sweep contours for three of the six elements in our example program. Notice how large smoothing values (1000) make the first two contours sound continuous rather than stepped. The third contour, with no smoothing, jumps from value to value as the steps progress.

Now press the CUT1 button in the MODULATORS row. Notice how absolutely nothing happens! First we need to set up something to modulate. We're looking for a basic filter, so in the DSP section click on the word Bypass until Filter 1 shows up in the list. You can see that the lists contain DSP functions in varying orders. Since we're only looking to use a filter, it doesn't matter what order any of the other functions are in; all but Filter 1 will be turned off.

Once Filter 1 appears in the first slot, click on the arrow below it and select a 2-pole low pass filter (LP 2P) from the pop-up list. Set the Cutoff to about two-thirds and Resonance to about one-third.

We're looking to create a continuously shifting filter sweep for Element 1, and we don't want it "timed" with the other elements. So again we'll turn to the Step Sequencer. Enable it, make it 101 steps long, and set Sync to 32.

Why 101? The idea is that 101 steps played over eight bars (that's the 32) will almost certainly never line up with the rhythms in the counterpoint melodies; you, of course, are free to choose any number of steps and a Sync value you like. We'll set

Smooth to 1000 and Depth to 12000, again somewhat arbitrary values based on our own idea of how subtle and smooth we'd like the effect to be.

And now it's time to draw the actual values of the steps. Remember finger-painting? This is going to be a lot like that.

First, right-click on the steps and make sure "No Snap" is enabled. Now finger paint away by clicking on your mouse and dragging it in the step window grid. Feel free to drag left and right, up and down, going over your old work and creating new.

There's only one rule here: the end of the sequence and the beginning of the sequence should have roughly equal values, or you'll get a jump when the sequence repeats. Then again, if you want a jump, you have absolutely no rules to hinder you. The result of our unbridled artistic expression is shown in Figure 4.

The last tweak for Element 1 is some pan modulation. Again, the Step Sequencer is our modulator of choice. Click the PAN button in MODULATORS, and draw your curve. We used 64 steps for smoothness, 100% depth for full left/full right modulation, and a "double-humped" curve that made the sound bounce from side to side with every quarter-note. The Pan knob in the mixer was set to 9 o'clock so that the sound started in that position at note-on.

Get a load of this...

Now it's time to load the completed example program into your DAW so that you can follow along without having to recreate each detail of the patch at every

step of the way. The program, called VIM High Steppin', can be found online at www.virtualinstrumentsmag.com/download.htm (or just go to the VI site and click on More Online).

Note that the zip file contains a Sonar patch, a VST patch, and each individual element. It also has a .wav sample of a crash cymbal. You'll need to place these files in the appropriate folders in your system in order to use the program. (See the Rapture manual for information on where the various ingredients need to be stored.)

And now back to our story. Open the High Steppin' patch and take a look at Elements 2, 4, and 5, which carry the counterpoint melodies to the one played by Element 1. You'll see that they use a number of the same programming approaches as Element 1.

One interesting technique featured in Element 2 is the use of the Step Sequencer to create a fluttering echo effect. This is done by setting up a 16th note amplitude pattern that "plays" against the 8th note melody. A quick glance at the two step sequences and you can see how each 8th note in the melody will respond to two successive amplitude values. No "smoothing" means the amplitude changes will be immediate, which accentuates the fluttering.

Notice too that a 24-step sequence is used for filter control. Based on the above, you might think that each 8th note in the melody would have three distinct filter settings associated with it. But that's not the case, for two reasons: first, Smoothing is set to 10008th note triplets), so the filter steps are essentially offset from the lock-step 8th note melody.

In Elements 4 and 5 the stepped amplitude technique is used once again, only this time in a one-to-one ratio with the melodies, so it functions more as a per-note volume control rather than as an effect.

Kookie, Kookie, lend me your comb

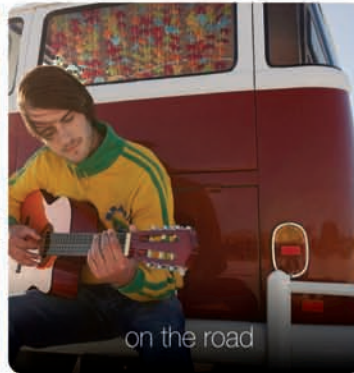
If you're old enough to remember that reference, then, well, I'm sorry.

Element 3, the big low end drone, starts with the basic saw 8080 waveform, which is then layered (9v) and detuned by 12 cents. That's pretty fat in and of itself, but we've brought in the DSP to add some extra life to the sound.

The DSP chain Filter 1 -> Drive -> Filter 2 -> Decim/Bitred is used with Comb select-

CONTINUED ON PAGE 56

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Big Products, Little Reviews

Tapspace Virtual Drumline 2.5, Equipped Music
Slo' Motion: Tokyo Soundscapes, Big Fish
Audio LA Drum Sessions Vol.2, Way Out
Ware/M-Audio KikAxxe



Tapspace Virtual Drumline 2.5

By Jason Alexander

\$199

Format: Kontakt Player 2, stand-alone and plug-in works in all Mac and Windows formats (AU, VST, RTAS, DXi).

www.tapspace.com

Tapspace has gone all out to present an extremely complete and comprehensive collection of drum corps samples. Featuring the world champion percussion section of the Santa Clara Vanguard, this latest revision brings a whole new level of flexibility, depth of programming, and attention to minute detail that's simply breathtaking.

Unlike Virtual Drumline 2, which shipped in its own player, VDL 2.5 is now integrat-

ed into Native Instrument's powerful Kontakt Player 2 engine. This allows for both stand-alone and plug-in support in VSTi, DXi, Audio Units and RTAS formats. The entire library installs to just over 4 GB of space, and it's a Universal application compatible with Intel/G5 Macs or Windows. Thanks to some painstakingly-built percussion notation maps, it will also incorporate seamlessly into Sibelius 5 or Finale 2007, both of which come with built-in support for Kontakt Player 2.

At 142-pages, the PDF manual is enormous but also extremely thorough and highly educational about drum line terminology and practice. There are also complete sections dedicated to particular DAW hosts and notation programs, specifying operational differences as they exist in older versions.

Browsing the quick-reference Instrument List that came tucked inside the DVD case, I was immediately impressed by the breadth of this library. More than just

marching drums, VDL 2.5 also includes a huge assortment of orchestral, world, and drum set percussion.

Each of the over 220 instruments is mapped in several ways across the keyboard, presenting samples in virtually any articulation and playing technique imaginable. Every single-hit or performance has been captured at multiple velocities, many in both right- and left-handed strikes. Special programs designated with 'AutoRL' in their names make use of some clever Kontakt scripting to alternate between right and left hands automatically. Even within a single velocity layer, an enhanced form of round-robin sample rotation is used to ensure slight variation when programming repeats, rolls, etc.

Many instruments also make use of the modulation wheel to switch between striking at the center of the drum head, halfway to the edge, or at the edge of the head. In fact much of VDL's flexibility lies with the amount of detail you can achieve

by using the mod wheel to alter sounds. Related variations include switching between shots vs. rims, short buzzes vs. long, natural decay vs. dampened, etc.

A really cool feature is the new Mod Wheel Monitor, showing exactly which pair of parameters you're affecting for each key-zone—far better than the guesswork involved in earlier versions. Manual keyswitches allow for articulations or mallet

provided with sustain pedal control. This is totally convincing.

Various makes and models of concert bass drums, roto toms, concert snare, field drums, firecracker drum, timpani, cymbals, gongs and tam-tams, chimes, and a variety of concert and world percussion instruments round out the front ensemble. I particularly like the exotic choices made in hand and suspended cymbals. A few high-

Thanks to some painstakingly-built percussion notation maps, Tapspace will incorporate seamlessly into Sibelius 5 or Finale 2007.

types to be selected, such as the marching bass drum played with regular hard felt mallets or soft puffy ones; timps can roll rather than strike only once; rolls can transform to glissandi; solos become ensembles; and more.

The attention given to sonic variety, character, and presence is also outstanding. Snare lines are offered in both Kevlar and Mylar varieties, for instance, while the tenor drums have distinct sounding choices between plastic mallets, drum sticks, and softer mallets to achieve different timbres.

Some nice surprises are the all new show-style single tenor program, the steel drum orchestra (lead pan, double seconds, triple guitar, 6-piece bass pan set,); and a rhythm section made up of electric piano, electric guitar, and bass guitar. Drum line cymbals are offered in 16-, 19-, and 20-inch sizes, in every conceivable playing style from washing ensemble crashes to tight solo hits and mutes.

Dozens of programs make up the brilliant sounding front ensemble (also known as the pit), including many contemporaries. Beautiful rosewood and synthetic bar marimbas are offered in hard, medium, and soft tones; Xylophones range from bright to dark with rattan and rubber mallet types; three glockenspiels models offer distinctive brass, bright plastic, and medium plastic tones; and the three crotales made of similar material choices provide more antiquated cymbal-like tones.

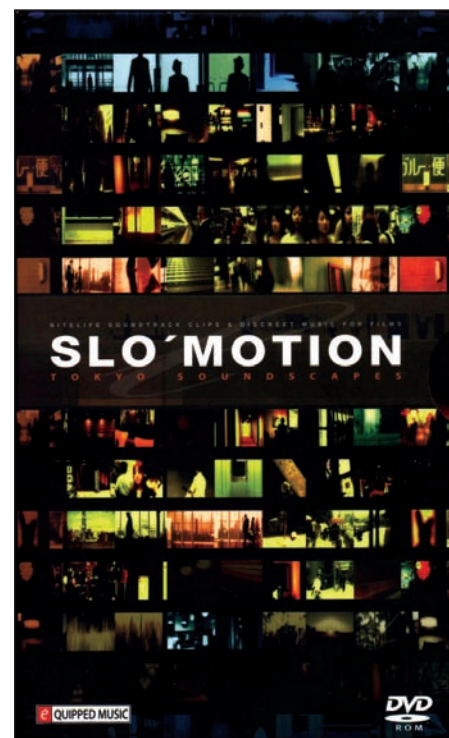
All eight vibraphone programs feature a specialized "Vibrato Motor" control, allowing you to continuously adjust the level of fan sound as well as the rotation speed of the resonator fans, and three variations are

lights include the 18-inch Constantinople and Viennese; 20-inch Germanic; and Oriental trash and mod-wheel controlled Swish Knockers.

A large mixed-stash folder brims with accessories such as bell tree, rainsticks (cactus to plastic), egg shaker, ratchet, slapsticks, sleighbells (chrome and dark brass), orchestral tambourine, triangle, temple blocks and more. There's even a folder of drum major vocals shouting "1,2,3,4, Ready, Go!"; pep rally chants; cheer calls; drum lines shouting letters of the alphabet from A-to-Z, "Yah," "Hoo," and more.

Finally, an FX folder includes such fun little treats as air raid siren, bell plates, earth plates, thundersheet, police and slide whistles, "bird calls," typewriter, hand claps, waterphone, and...as you can imagine, a whole lot more. Combination programs put multiple drum types in one keymap (for use on a single MIDI channel) making them ideal for live performance. They include a bass drum and tam-tam combo, Latin combo, Metal combo, two Rack combos, and a General MIDI kit.

Virtual Drumline 2.5 is magnificent. With its expanded variety and musicality a given, the focus of this update is on the programming details. The enhanced velocity control of the Kontakt interface makes for truly extraordinary, natural sounding accents and drum tap sensitivity. Specialized controls allow you to further enhance or customize each instrument with EQ, attack/release settings, and auxiliary sends levels to the integrated effects. I was blown away by the presence of these samples; combining in-your-face clarity with a sweet stereo image, they lift you straight out of your studio chair and plunk you down on the field with the band.



Equipped Music Slo'Motion: Tokyo Soundscapes

By Jason Alexander

\$199.95

Equipped Music (Dist. by Big Fish Audio)

Formats: WAV, REX, and Propellerhead Reason Refill

Distributor:
www.bigfishaudio.com

In contrast to the hustle-bustle atmosphere of Japan's largest city by day, this tranquil collection of cool "night-life" soundtrack clips couldn't be more appropriately named. Influenced by the strange, the surreal, the exotic, and the obscure, beautiful sounds are enhanced with special FX to create the illusion of a fast-paced city as seen through a cloud of anesthesia.

This 7GB library ships on two DVDs, one entirely in 24-bit WAV format; the other contains REX2 versions and a 2GB Reason Refill, complete with over 700 Combinator, NN-19, and Redrum patches (these are

"rack" processors/instruments inside Propellerhead Reason).

The WAV DVD is divided into two main sections, with one folder containing endless loops and another solely for one-shot samples and cue sounds. Of the looped content, there are ten categories each subdivided by tempo (60, 65 and 70BPM). Unlike traditional construction kits that limit you to specific themes, Slo' Motion is made far more flexible by providing you with a sound palette that is arranged by tone colors, moods and textures. For this reason—and again, unlike with conventional libraries—I rarely found myself starting an arrangement by digging through the Rhythm or Bass folders. Rather, I'd first set

well, Toyko and back. While it's useful, I found the folder of Bass loops to be the least memorable on the disc; from loop to loop, the same dubby sub-tone doesn't really change, for me the patterns weren't especially inspiring.

But creativity flows once again through the chaotic sounding Noise Loops (people movers, airport intercoms, crowded markets, entertainment districts, etc.). That also applies to the Nature FX (wild birds and habitats), and the indefinable motion-special FX Loops.

Rhythmically speaking, the Gamelan & Thumb Piano (Kalimba) folder offers an assortment of truly majestic metal and wood tones that are repeated over and over or

outshine the message that the music is delivering.

The Guitars folder offers 87 tones of electric, acoustic, and synth varieties with much of the attention given to spacey rises, spectral chords, and slides that sound as though they belong in an Asian spaghetti western: peculiar and totally fun. Hundreds of mixed FX, rhythm box and percussion single-hit samples round out the pack.

What I love most about Slo' Motion: Tokyo Soundscapes is its simplistic and emotional approach to making music. With meticulously chosen loop points, you can assemble elements layer upon layer in near endless fashion without once having to worry about bar length, style, song structure, meter, or quite often even key. Magically, the elements all seem to work together no matter how they are combined.

Modern music for antique hearts: this is

The obscure, beautiful sounds are enhanced with special FX to create the illusion of a fast-paced city as seen through a cloud of anesthesia.

the mood texturally and build up rhythmically later.

A good jumping-off point, the Soundscape Loops folders each contain upwards of 50 fully evolving pads ranging between two and four bars in length. At 60 BPM, that's a 32-second loop! Mostly variations of ambient minor-chords, the mood is generally soothing and serene, but it can cast an eerie shadow all the same.

The majority of tones seem to be based on heavily processed guitar, organ drone, wavetable synthesizer, fizzling analog oscillators, and formant waves. But several have a distinct "found sound" feel, including the creatively edited street scenes—replete with subtle traffic/subway/machinery noise and unintelligible pedestrian chatter. (Who would have ever thought train brakes in need of greasing could be so calming?)

One pad I found particularly cool could be described as a time-stretched ship horn echoing off in the distance, layered on top of a dull, muted-knocking harbor bell, with mysterious mist rising off the water. Unlike that description, the samples are abstract and extremely malleable to suit whatever purpose you have in mind. But this kind of imagery is typical of the entire library, and it's wonderfully creative sound design.

The Chord & Tone Loops folder contains oodles of Bladerunning Rhodes; Eno-esque piano, synth and guitar; Mellotron string and flute and film-noir spectral synth sequences—each filtered and processed to,

presented as hypnotic, arpeggiated patterns. Discrete Percussion highlights several Asian bell instruments, chimes, drums, wood blocks, shakers, crashes, gongs, finger cymbals and "tings," again struck in brief patterns that are often spliced, reverse and pre-layered for drowsy effect

The synthetic-mannered Rhythm Fragments folder is akin to being stuffed inside an old-fashioned clock and hearing the sprockets, springs, and flywheels whirl and flutter about with each pendulum swing. Finally, gluing everything together are three folders of Rhythm Box loops. These chilled-out timekeepers are completely vintage, culled from early Roland TR-series machines and even rarer valve-driven organ beat box rhythm sections. Pretty damned groovy stuff.

The second half of the collection presents six instrument folders, each containing a slew of one-shot chords, dissonant tones, and casual riffs. Samples are typically no shorter than five seconds, but many stretch ominously past 15 seconds. Such is the case with the Synth Pad Chords folder

The Electric Pianos folder contains 186 Rhodes tones that run the gamut from dark and perversely mangled to beautiful and delicately sublime. Drenched in tremolo-distortion, pedal-wah, tape delay, and oozing filthy circuit grime, the retro-futurist meter is set to max. Consistent throughout the entire library, effects choices here are always tasteful and never



must-have collection of beautiful, sexy sounds for the urban romantic.

Big Fish Audio LA Drum Sessions Vol.2

\$99.95

Formats: AIFF Apple Loops, REX, and WAV.

www.bigfishaudio.com

Los Angeles is home not only to some of the best drum rooms in the world, but to one of the highest concentrations of

top-flight session drummers. Who played where on LA Drum Sessions Volume 2 isn't advertised, but Big Fish has struck the right combination of talent and venue in assembling this substantive library.

At just over 3 GB, LADS2 features 2,239 WAV loops recorded at 16-bit, 44.1 kHz, with duplicates in AIFF/Apple Loops and REX formats also provided. Categorized into 15 tempos (50-170 BPM), each BPM folder contains sub-folders of different performance sets—representing 73 different song “sessions” in total. Playing styles span nearly every perceivable genre from rock, pop, disco, funk, and punk to jazz, blues, modern country, rasta, zydeco, smooove-groove, and swaggering hip-hop bounce.

There are often a dozen or more variations of the loops in each performance set, and they work together to make it easy to create custom drum arrangements. However, not all performance sets have complete intros, fills, and outros, which can sometimes making full arrangements a challenge. So you could cook up your own using a program like Ableton Live or Sony ACID to edit the loops. Or you might dip into one of several folders dedicated to fills and tom flourishes that are dispersed (somewhat randomly) throughout the collection.

This brings us to one of very few complaints I have about this library: while it isn't difficult to time stretch/compress these loops, there isn't a consistent set of elements (such as fills) in each tempo folder. Also, the incrementally numbered file names within each performance set are somewhat nondescript. Simple names like Intro, Chorus, Verse, Break, or Fill would save you from having to audition maybe a dozen loops each time you work with LA Drum Sessions.

Contrary to what the disc's title might suggest, the loops are not raw session multi-tracks, but rather composite stereo drum mixes. It's great that Big Fish offers them in three flavors: dry, room mics only, and a wet mix of both. Not only does this allow you to determine your own balance between close-miking and natural room ambience by blending the two tracks, it also lets you add your own brand of reverb or funky effect to each version.

Several different drum kits, microphones, and recording paths were used, providing many distinctive sonic characters not found in the original volume to this series. I especially liked the down-tempo 4-On-Floor rock kits for their large, lively sound with lots of ballsy low-end;

when blending their mix mainly to that of the room-mic tracks, I conjured up the raw and ambient vibe of early U2 sessions with Daniel Lanois at the helm. Other times, solid rock beats have been infused with tricky hi-hats that remind me of jazz-

that, I really enjoyed this disc. It provided countless moments of inspiration, and I had a great time hacking loop variations into granular oblivion using Spectrasonics Stylus RMX and Apple Logic Pro as chopping boards.



influenced Sting or Police material.

Several performance sets feature crash-, ride- and snare-heavy variations for mixing into climactic parts of your arrangement, while others are solely geared to show off tricky snare/stick work or flashy Prog-Rock style tom action. In a library of predominantly mainstream musical styles, I was surprised that two of my favorite sets happened to be the hip-shaking, latin-influenced 115 BPM “Bongo Fun” and the breezy 145 BPM “Rosta 1” and “Rosta 2” reggae folders. Blending either of these “top end” (little or no kick) families in with straight rock or funk beats created some wonderful hybrids of distinctly more urban flava. And, if an arrangement demands beat augmentation surgery, the folder of 360 single-shot drum hits should do the trick.

The deft timing and originality of the drummers is impressive. But more than

Way Out Ware KikAxxe

\$69.95

Formats: stand-alone, VSTi, Audio Units, and RTAS. Windows XP/Vista (32-bit) and Universal Binary for Mac OSX.

Distributed by M-Audio: www.m-audio.com

The ARP Axxe was no Minimoog, Jupiter 8, or Prophet 5. Originally launched in 1975, it was basically a stripped-down version of the much more popular ARP

CONTINUED ON PAGE 56

Dan Dean Solo Strings Advanced

The famous original DDSS gets completely revised with new programming, more recordings, and custom timbral impulse responses to alter the sound radically

review by
Nick Batzdorf



Dan Dean Solo Strings Advanced, \$199

www.dandeanpro.com

Format: Native Instruments Kontakt 2 Player—stand-alone, VST, AU, RTAS.

Requires Mac OS X 10.4+, G4 1.4GHz or Intel Core Duo 1.66GHz, 1GB Ram; Windows XP or 32-bit Vista, Penium or Athlon 1.4GHz, 1GB RAM.

Copy protection: online using Native Instruments utility.

Load and go: Dan Dean Solo Strings Advanced could hardly be called complicated to use. The solo cello All-In-One instrument has six articulations (arco, spicc, pizz, looped trem, whole and half step trills) that you call up with keyswitches (the red notes). You can assign it one of about 25 different timbral impulses to change the sound pretty radically, and it has some excellent custom reverb impulses as well. The Voice Control instruments are manufactured string sections of various sizes.

You know the famous string quartet sample library demo of the Fawltly Towers theme? That was the original Dan Dean Solo Strings, one of the better

known Giga libraries a few years ago.

Now DD has gone back to the original recordings, pulled out additional material, and reprogrammed the entire library in a Native Instruments Kontakt 2 Player. The new library, Dan Dean Solo Strings Advanced, has updated programming features—consisting mainly of automatic sample alternation, sustain pedal-triggered attack-shortening for legato transitions, and real-time release envelope control (MIDI cc20)—as well as manufactured string sections with keyswitches or mod selection of the size.

DDSSA also takes advantage of the Kontakt 2 Player's convolution processor with a series of custom impulse responses that apply, as DD describes it, "the 'sonic signature' of great recordings, string sections, solo string recordings, and other sources" to the instruments in this library. More later.

Programming

Despite what's going on under the hood, DDSSA is a simple, no mess/no fuss library that's very playable. It contains solo cello, viola, and violin sets, plus some Violin 2 programs, plus the manufactured sections.

This is not a high-impact library on the computer. The All-In-One solo cello took up only about 55MB and loaded into the test dual 2.5GHz G5 Mac in about three seconds.

The articulations included are arco, spiccato, pizz, looped tremolo, and whole and half-step trills starting on the note. These samples are available in three sets of programs that you use for different reasons; the above-mentioned sustain pedal attack-shortening feature works in all of them.

In the first set, the All-In-One Solo instruments, you simply keyswitch between the articulations. There's one program for each of the instruments, in other words you simply load the cello and play.

The All-In-One have DD's "cloaking device"—a Star Wars addition to the auto-alternation programs—enabled all the time. As in most sample libraries, the automatic round-robin technique is successful in some contexts, less subtle in others, but always better than hearing the same sample over and over.

The Cloaking Device has a switch in the second set of programs, which are the Voice Control - Divisi instruments. These programs use the keyswitches (there are also mod wheel versions) to change the size of the manufactured sections, and each program contains one of the articula-

tions. Due to the way they're recorded close up, to me these ensembles have a nice sound that's reminiscent of the smaller string sections you'd hear on a lot of TV shows back in the day. That's even true of the 12-player violins.

Finally, there are Legacy programs that you just load and play. They have no keyswitches and would be good for live performance. Each instrument (violin, viola, cello) is available in solo and 3- or 6-piece sections, in all the articulations.

Timbre

The timbral impulses in DDSSA were created in partnership with IR boffin Ernest Cholakis of Numerical Sound, who also

DDSA uses a series of custom impulse responses that apply "the sonic signature of great recordings, string sections, and other sources"...

developed the excellent reverb impulses included with the library; the reverbs have a subtle, refined character that's hard to define in writing.

We aren't told what the timbral impulses are; you just pick one you like without worrying your pretty little head about what it is (or alternatively just you leave things in the default bypassed state if you prefer the sound au naturel). Most of these timbral impulses have a pretty dramatic and character-adding effect on the quality of the sound. They're all different, changing the sound from bright to dark to murky to clear.

On a more practical level, the impulses are a good stand-in for equalization, or vice versa. Strings tend not to take EQ very well—they start sounding synthy in a hurry due the phase shift. Linear phase EQ processors work better, but the timbral impulses sound more interesting.

Sound

The biggest strength of DDSSA is its sound. These are clean, rich, detailed recordings, and the timbral responses add a lot of character and possibility to the sound.

As to the programs themselves, the quality of what's there is very good. The only criticism I have is that as in the original

DDSS, the arco violin articulation (but not the cellos or violas) has a slight bloom, meaning that each note grows (like this <) for maybe three quarters of a second. That's nice for long expressive notes, but it can also suck the note into the track in passages with repeated notes, so it's perhaps too specialized an articulation if you only get two to cover all bases. As a result I found myself stomping on the sustain pedal to truncate that part of the sound a lot. (Again, the sus pedal is normally used to create "headless" samples on the fly for legato transitions.)

Also, it would be good if the ranges in all the programs were extended as high as they are in the Voice Control ones. For

example the cello only goes up to C above middle C, a good top note for kids but well below the top of the professional range.

Thus

DDSSA is a very likeable library that can cover a lot of musical bases nicely. It's well worth having just for its "TV" violin sound.

If it had a greater variety of articulations, it could be the only string library you need—especially some more aggressive ones and some additional short ones. Or perhaps even cutting in release samples would cover the short ones; merely shortening the release envelope stage with MIDI cc 20 cuts off the sound, so it's not quite ideal.

Dan Dean put the emphasis on the sound with this library, and it certainly has that going for it in spades. It's also very playable due to the way it's programmed and also how well it's mapped to the keyboard. And it's a big advance over the original DDSS.

Go to the DD website and listen to some demos. They do sound good. **VI**

Windows Modular Host Round-up*

Stand-alone hosts can do a lot more than act as dumb players. Here's a look at the capabilities of five of these programs: XT Software Energy XT 2, Sensomusic Usine, Plogue Bidule (**which has a Mac version too*), Art Teknika Console, and AudioMulch

by **Peter Dines**

A confession: I'm hooked on programmable, modular patching systems for making music. Anything can be a modulation source or destination if you know how to dig in and make it happen. Vocoding and sidechain compression are as easy as drawing a connection between modules or instruments. Multiplying the audio output from two different synths or samplers to create ring modulation is as simple as plugging two appliances into a power bar.

That's intoxicating once you start realizing the possibilities. It leads you to a point where the instrument and the composition start blending; the direction your composition takes prompts you to make new connections in the instrument, and your understanding of the instrument starts hinting at new directions for composition.

In that context standard sequencers can seem a little dull and restrictive. Traditional DAWs vary in their flexibility of MIDI and audio routing—Logic Audio is probably the

champion in this area—but in most products you have to do some digging to do something unusual, if it's even possible.

By unusual I mean anything the program's developers didn't foresee that the user might want to do. Finding a way around the developer's intentions can sometimes involve Google searches, reading obscure documentation, posting pleas for help on company forums, and generally feeling like you're trying to dig through a wall with a spoon.

What's worse, the knowledge you gain almost certainly won't be portable to another DAW. It doesn't compare to the simplicity, immediacy, and visual reference you get from drawing a wire between objects in a virtual modular system.

But how do you reconcile modular mania with other tools and instruments? They say that to a man with a hammer, every problem looks like a nail. I have other tools in my tool kit—other effects, instruments and DAWs, and I want to use them too.

The answer is the modular host. Composers tend to view these programs as simple players, but they can do a lot more than that. We're going to look at five dif-

ferent ones that run on Windows and explore their capabilities.

Some of them can be hosted in other DAWs to expand the flexibility of your current set-up, some of them are practically programming environments in their own right, and some of them have the zen simplicity of a blank canvas. What they all have in common is the ability to route signals between virtual instruments and effects.

Energy XT

ST Software, \$75

www.energy-xt.com

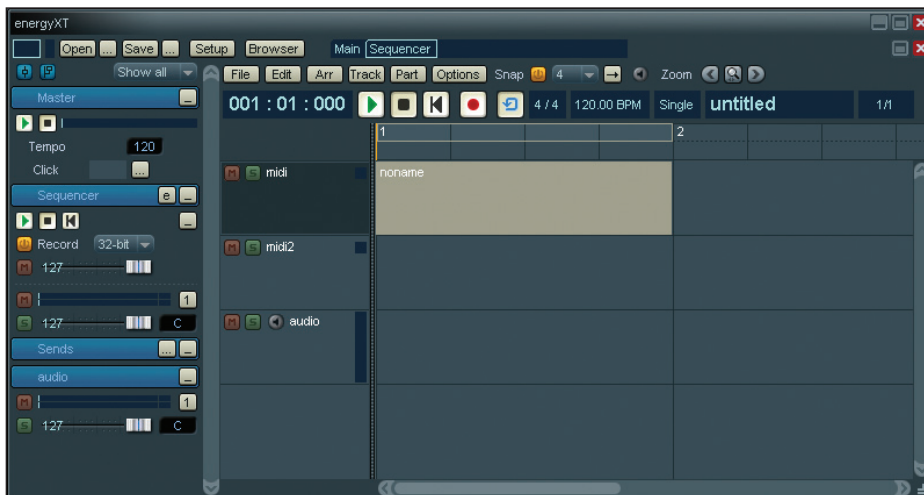


Fig. 1: Energy XT's sequencer and main ("Comps") views.

Let's start with one of the less exotic examples of the species. XT is a good match for users who want a modular host that can also behave more or less like a traditional DAW, with sequencing and recording functions. XT can run stand-alone or as a plug-in in another sequencer. The free demo of Energy XT has no functional or time restrictions but can't save programs. You'll need a license for that.

At the moment there are two versions of Energy XT—1.xx and 2.xx. Version 2 has been reprogrammed from scratch to make it easier to add user-requested features, and it already includes some great new toys like a built-in synth and sampler.

However, so far it's missing some of the subtle features that made version 1 so flexi-

ble. The most crucial missing feature from my perspective is the ability to split stereo inputs and outputs into mono channels in the modular view.

Because of this I'm going to focus on XT 1 in this article. Fortunately, purchasing an XT license includes the ability to use both versions, so we can still enjoy the full features of version 1 while waiting for them to be added to version 2.

As shown in Figs. 1 and 1A, there are two main views or tabs in XT—the sequencer view and the main ("Comps" in XT 2) view. You can also choose an empty project template with no sequencer.

The Comps view is what we're going to look at here. Routing is accomplished the way you'd expect: by clicking and drawing

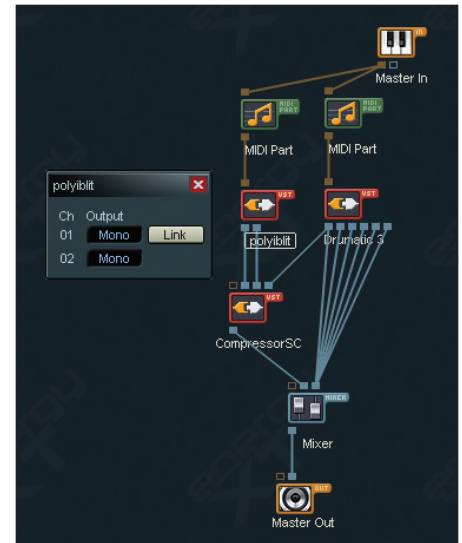


Fig. 2: Sidechain compression in Energy XT.

ferent loop lengths and play them back live against each other, instead of having to stack them in a staggered brick wall arrangement in a master timeline (although you can do that too). This is a great way to create shifting, dynamic grooves that can even surprise the composer.

Let's look at something that can be a pain in many traditional DAWs but is a breeze in a modular: sidechain compression. See Fig. 2. Getting a good hammering mix in dance music often means using compression to duck the bass line when the kick drum hits. Done correctly this can make a rhythm section tight and aggressive, and give you a few extra dBs. Generally you want to use a fast attack and release time on the compressor and a high ratio.

As you see here, only the kick drum is routed to the sidechain of the compressor, so the snare isn't ducking the bassline too. This particular compressor features three inputs: left, right, and sidechain. Notice the dialog box with a "link" button; this is what allows us to change the output of the bass synth from a single stereo out to left and right channels to match the configuration of the compressor.

By using the plug-in version of XT, you can save set-ups like this as XT patches and reuse them in other DAWs.

Some quick observations: XT documentation is almost nonexistent. There are some tutorials on the website, and the program is straightforward enough that this isn't a crippling omission. MIDI editing is adequate for basic purposes. Audio can be



lines in between the input and output ports of instruments, effects, and sequencers. Double-clicking on a module or instrument opens its edit window.

One of the exciting features of XT is the ability to load multiple MIDI clips with dif-

recorded at 16- and 24-bit resolution in XT 1 and also 32-bit in XT2. There's no MIDI clock sync in stand-alone mode, so you'll have to run it in plug-in mode for that. XT 2 runs with ASIO on Windows and JACK audio on Linux, and hosts VST format plug-ins.

My verdict: this is a solid program to use as an experimental scratchpad and for extending the routing flexibility of a traditional DAW. It might be powerful enough to serve as a main recording and composing environment for users who don't require all the bells and whistles of more complicated packages.

Usine

Usine, Pro version 50?, free version also available

www.sensomusic.com

From the easy simplicity of XT, we jump to the alien complexity of Usine. Programmed by musician Olivier Sens, Usine combines a lot of the programmability and complexity of Cycling 74's Max/MSP and the live improv switch-'em-up philosophy of Ableton Live.

Fortunately it's well documented. The Usine quick-start PDF is 25 pages and a must-read for getting started. Then the full manual weighs in at 168 pages and goes much farther, detailing the program's built-in modules and textual scripting language. Don't let that intimidate you—basic use of the program doesn't require an engineering degree. You can explore the deeper

programmability if and when it suits you.

The free version gives you four tracks, with 16 in the paid version. As you can see in Fig. 3, each track consists of one or more patches, arranged vertically in a grid, that you switch between on the fly. Patches can also be arranged on a timeline to play back in sequence. Each patch can contain instruments, effects and native Usine modules that you connect together in the standard virtual modular way, by clicking and drawing cables. Every track can process external audio input or audio routed from another track. The free version gives you one external stereo audio in and one out, and there are ten external ins and outs in the paid version.

It's easier to show the program than to describe it, so let's look at a typical Usine patch: Fig. 4.

At the center of this patch is a Helios II

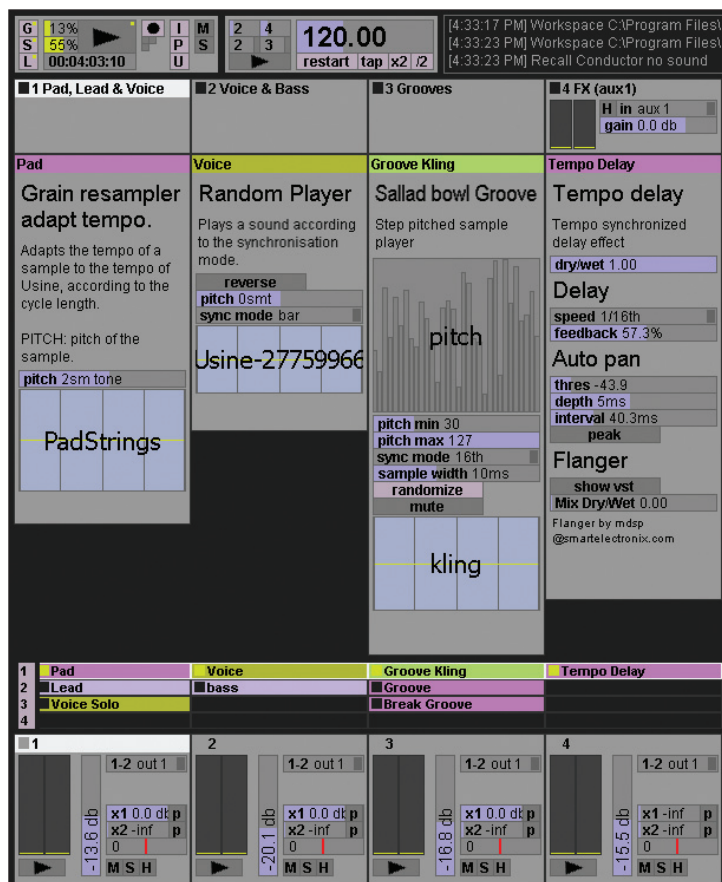


Fig. 3: Sensomusic Usine's grid.

synth driven by a piano roll and a stepper. There are also a couple of interface controls that are visible in grid view, to control the synth's presets and overall pitch. Notice that a V.I. loaded in Usine exposes all its controls as input ports. This is great if you have a good sounding but simple synth or sampler that you'd like to liven up—you can route one of Usine's native LFO or Step modules to a control input.

Notice also that there is a piano roll in this patch. Usine's piano roll MIDI editing is extremely primitive. It's useful for loading and recording sequences, but don't expect to do much more than adding or removing a few notes in the editor.

On the other hand, Usine includes MIDI transformation and note filtering modules that can be combined with other modules and embedded in sub-patches. It also sends and receives MIDI time code and OSC (Open Sound Control) data, and allows you to map its controls to a MIDI control surface on global as well as patch levels.

Since Usine includes low-level primitives such as math modules, you can do fun stuff like ring modulating one sampler

Also of Note

There are a few products in this category that didn't make it into the article, so this isn't a complete list.

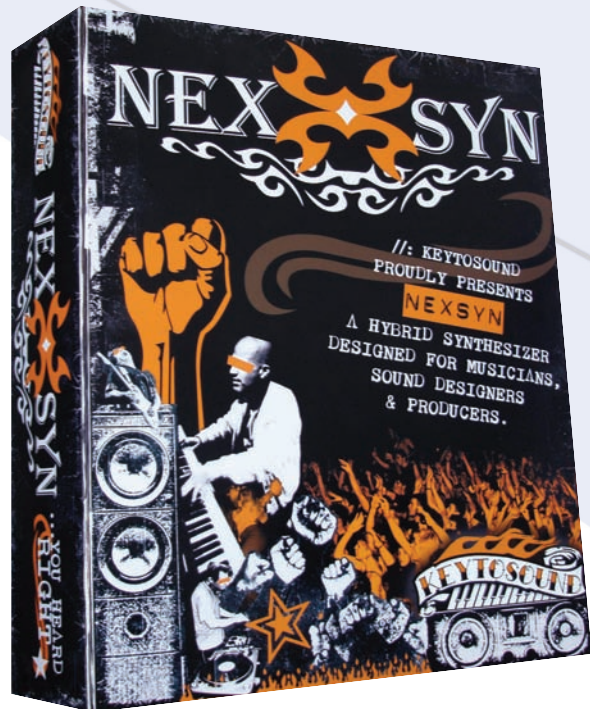
Hermann Seib's VSThost (<http://www.hermannseib.com/english/vsthost.htm>) is a great little free host that allows you to do many of the same things as Console—you load your instruments and effects, and create MIDI and audio connections between them. It allows you to record the results. The main drawback is the lack of an off button for the transport—the clock runs constantly, which means your sequencers run constantly, and there's no way to shut it off without turning off the audio engine. This doesn't lend itself to cleanly recording a take, or playing a live set. But it's free.

Cycling 74's flagship Max/MSP program (www.cycling74.com) is the granddaddy of programmable, modular software systems. It's inevitable that the functions in many of the products in this roundup were directly or indirectly influenced by it. A quick overview in a roundup wouldn't scratch the surface of its abilities, but by all means try the demo available at Cycling 74's website. It's more expensive and has a steeper learning curve than the other products in this article, but the payoff is proportional to the time and money invested.

Mungo Giveaway

Enter to win a KeyToSound Nexsyn

NexSyn is a hybrid instrument that combines sample playback and Stereo Synthesis Technology. It integrates a powerful synthesizer with high quality output, advanced modulation, and precise sample based key-map playback. NexSyn includes NetNotes: revolutionary Online Preset browsing and sharing, from right within the synthesizer.



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Mungo Mungo

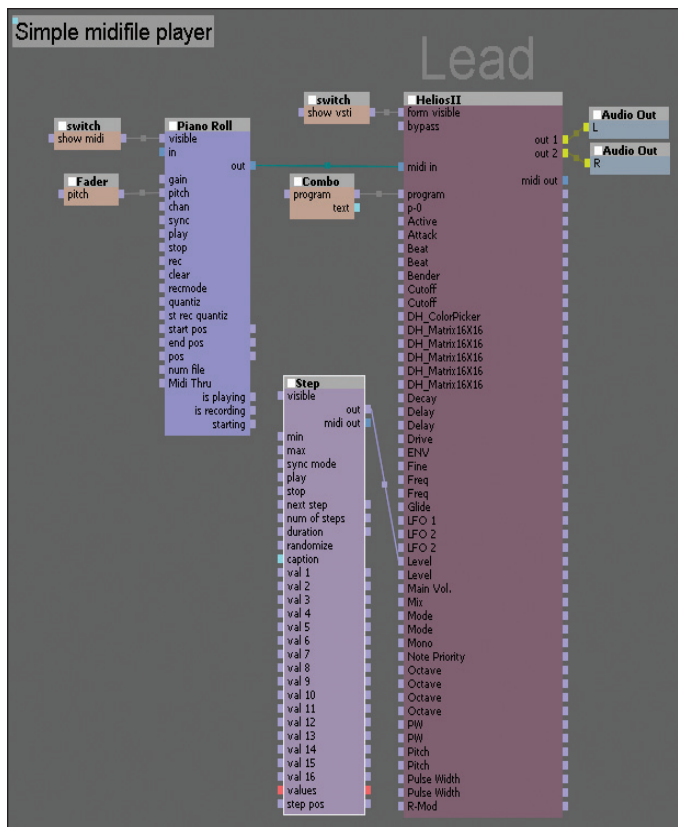


Fig. 4: A typical Usine patch (MIDI file player)

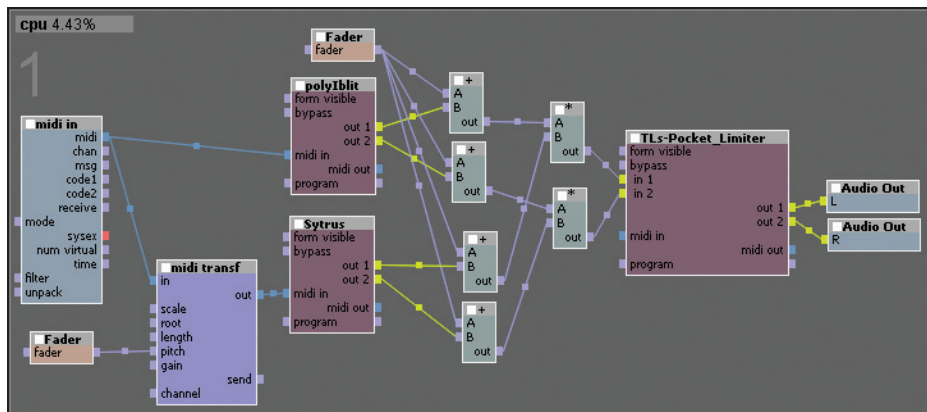


Fig. 5: Ring-modulating one instrument against another in Usine.

or synth against another. Let's look at a patch that does that: Fig. 5

A MIDI in module is connected to two synths, allowing us to play them in tandem from a keyboard. Then a MIDI transform module with a fader raises or lowers the pitch one of the synths receives—say, by a perfect fifth or an octave.

Another fader is connected to the output of the synths with addition modules. That controls the offset of the ring modulation. Offset values between zero and one makes the sound less grungy or

esting result. You might also try running one or both of the synths through Usine's lowpass modules before multiplying their signals.

The verdict: Usine is as powerful as it is unique. I recommend it for the propeller head and tinkerer types, and especially for people looking to integrate a laptop into experimental live settings. Usine doesn't have a plug-in version, so it can't be used to extend another host; however, you can record the output of its patches or master channels in 16-, 24- or 32-bit resolution and import them into something else. Usine is Windows-only and hosts VST format plug-ins.

Bidule

Plogue, \$75

www.plogue.com

Plogue Bidule, programmed in Quebec, has a name derived from French slang that means to plug "thingies" together. As we will see this is an apt title.

Bidule comes with its own thingies, or bidules, such as mixers, oscillators, sequencers, low-level math functions, samplers, granulators, FFT modules, and entire instruments that you can dig in and modify. It has the ability to hide complexity in sub-patches. Of course you can also add your own instrument and effect plug-ins to this mix.

Bidule includes a plug-in version for running in another master host or MIDI sequencer. Its rudimentary step sequencers are complemented by a vast array of MIDI-generating and -transforming modules. If you want to explore algorithmic music generation or add that feature to your main DAW, Bidule might be right for you.

Bidule comes with templates that demonstrate its various uses, including MIDI transformation, vocoding, and synthesis. A patch that generates simple lullabies is in Fig. 6.

Three stochastic MIDI generators send output to a tone generator, then through gain and reverb stages and to the output. The stochastic (i.e. random) MIDI generators have properties pages that set the note pitches and durations. This is a dirt-simple example; you can do much more complicated things with Bidule's modules.

One place where a modular host really shines is in the ease of using MIDI insert effects: Fig. 7.

Here the MIDI input and notes from a step sequencer run through a Tonespace MIDI insert, controlling a Zebra synth. The Tonespace converts individual notes to chords in particular keys. Notice that the left and right channels from the synth are sent through different effects before the mixer and output.

One headscratcher is the lack of transport controls on the main panel; I couldn't get my custom sequencers to drive synths at first. It turns out you have to create a modulation source on the patch bay, such as the Sync Transport, which behaves like a standard master transport. It's up to you to decide whether to be a tempo fascist and use the same sync source for everything or to run your sequences at different speeds

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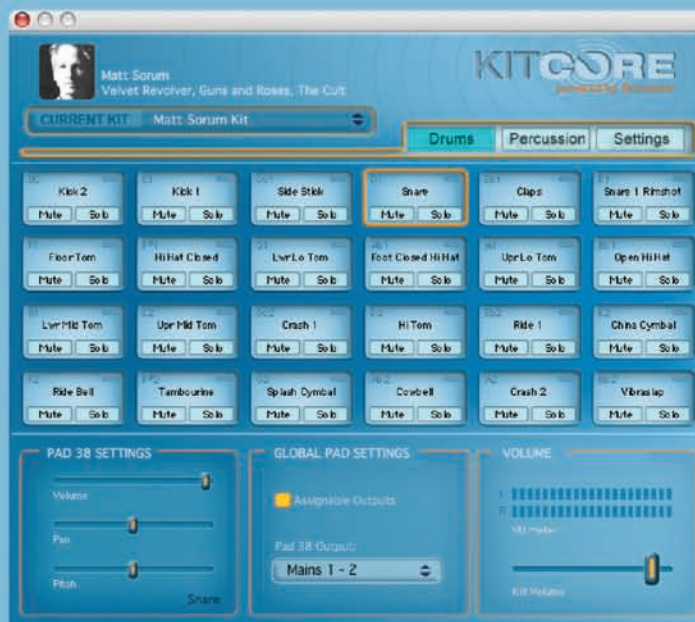
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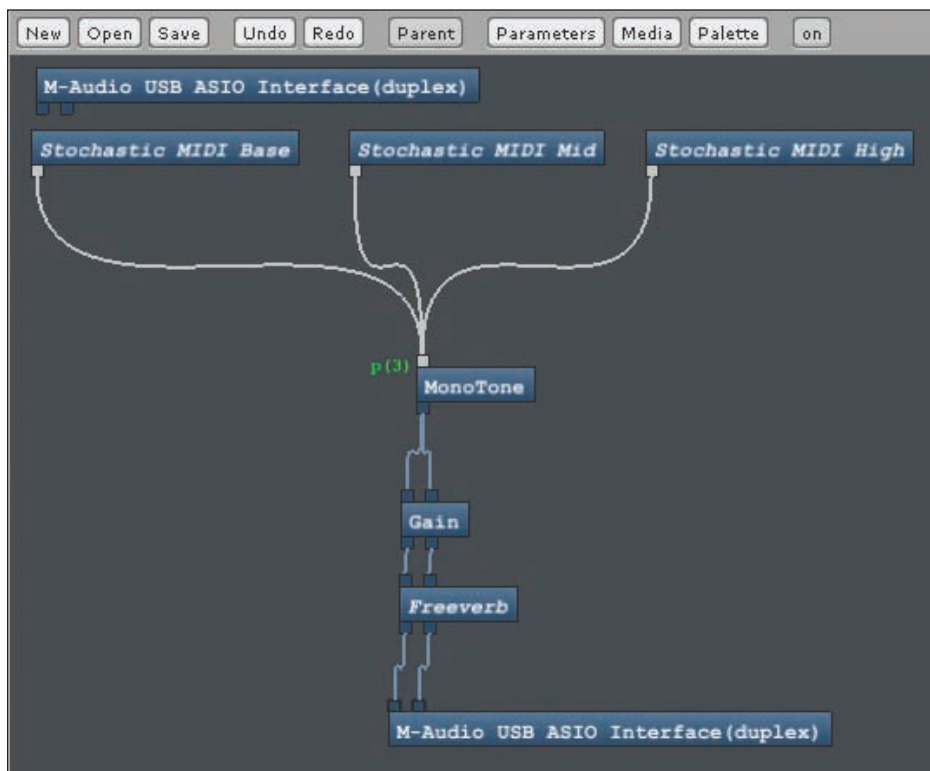


Fig. 6: A Plogue Bidule patch that generates simple lullabies.

and let them phase shift against each other organically à la Steve Reich.

Bidule runs on Windows, Windows 64 bit, and OS X (PPC and universal binary) and can host VST and AU format plug-ins.

The verdict: Bidule is somewhere in between Usine and XT in upfront complexity—and that's not a bad place for a tool to be. It's difficult to quantify these things, but it probably packs as much versatility and programmability under the hood as

Usine. I find the GUI more intuitive, not to mention attractive—Bidule's auto-flexing S-shaped virtual cables work surprisingly well to make a patch's structure neat and readable. Bidule can run as a plug-in, and it speaks ReWire.

Art Teknika Console

Art Teknika, \$54 shareware

www.console.jp

This modular host from the Japanese company Art Teknika is about as straight-

forward as they come. There's no master sequence and a minimal set of mixing and sequencing modules. You are expected to bring your own contraptions to the table for the most part. This could be an attractive environment for users looking for a blank canvas.

There are modules that work as mixers and mute groups, so this would be a good option for musicians looking to do old school live mixes, dropping and fading parts in and out. MIDI and audio are routed the way you'd expect—by drawing lines between modules—and there's a master transport control on the main menu to stop and start the master clock and set the BPM.

Make sure to read the help file, which uncovers features like the hidden volume control that appears when you select an audio connection cable and click on the little square in the middle of it.

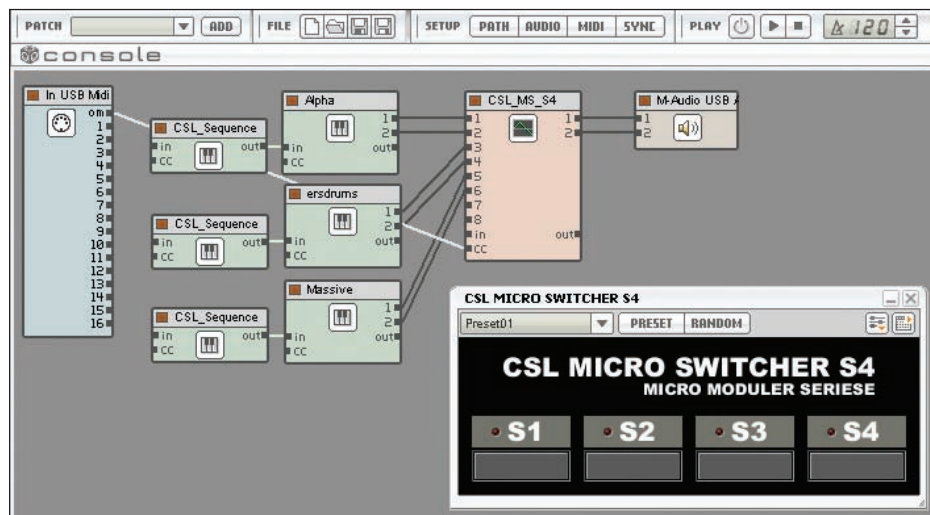
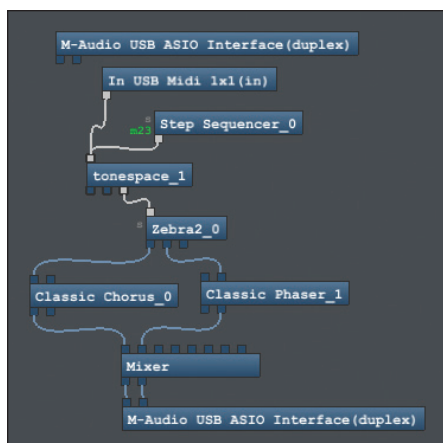
Fig. 8 is a patch showing the "micro switcher." Three basic piano roll sequencers drive three synths that are connected to the micro switcher to allow you to drop musical elements in and out. Naturally, one could combine switchers in parallel and series to let you add or subtract multiple elements at a time.

You can use MIDI CCs to control the switches. The piano roll sequencers have a note-to-pattern feature, allowing you to assign specific MIDI notes to sequences and flip between them live using a standard MIDI keyboard.

However, perhaps Console goes too far towards simplicity—there isn't a native way to record audio output from the program or from plug-ins! You'll have to use some-

Fig. 8: The "micro switcher" in Art Teknika Console

Fig. 7: MIDI inserts are easy in Bidule.



thing like the free Voxengo Recorder plug-in or Tobybear ChannelGrabber. I also would have liked a simple native audio looper.

The verdict: Console runs on Windows stand-alone and as a plug-in in VST, VSTi and DX flavors. Since it can host either VST or DX plug-ins, it could be used as an adapter to, for example, run DX plug-ins in a host that only accepts VST plug-ins. Like Energy XT, this could be a good choice for a musician looking to expand his main host's capabilities in a modular direction. It also works well as a barebones live performance host.

AudioMulch

AudioMulch, \$89

www.audiomulch.com

There are as many ways to design a modular host as there are developers, and AudioMulch is another example of that rule. The program has three main panes—a patcher pane on the left, a properties pane on the right, and an automation pane—that is, a timeline—along the bottom. Most of the sequencing ability that exists in AudioMulch is built into the modules, or

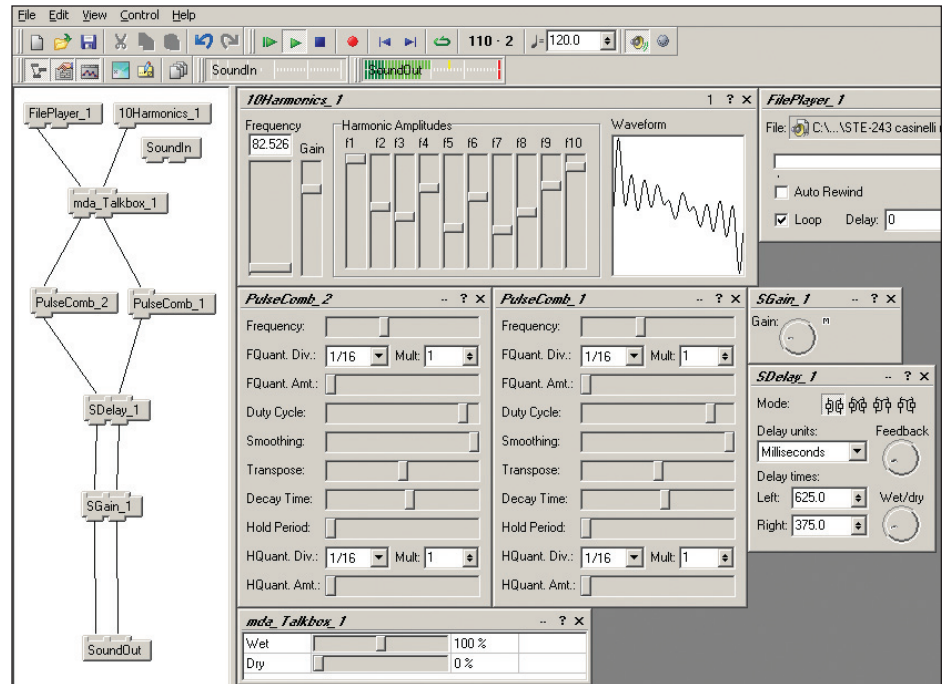


Fig. 9 shows one of the vocoder patches I put together in AudioMulch. The carrier signal on the right is coming from a harmonic generator and is being modulated on the left input of the vocoder by a sound file loaded into a wav player. I've also placed a SoundIn contraption in the patch so that live audio can be used as either a

Fig. 9: A vocoder patch in Audio Mulch

It leads you to a point where the instrument and the composition start blending; the direction your composition takes prompts you to make new connections in the instrument, and your understanding of the instrument starts hinting at new directions for composition.

"mulching contraptions", which you hook together in the patching area. Automation of individual controls, and switching of contraption presets as your track progresses, take place in the automation pane.

This might seem like an odd way to approach things, but it has its advantages. It's actually quite fluid to add and rearrange contraption presets on the timeline. This is an interesting way to break out of piano roll syndrome while still maintaining control over the overall structure of a sequence. You'll have to use your ears more than your eyes, and that's a good thing.

carrier or modulator. The MDA Talkbox is a non-native VST plug-in. Two pulsecomb contraptions with slightly different settings turn the audio into a pulsing, bubbling sound field, which is run through a delay with separate delay times for the left and right channel.

Contraptions include file players, recorders, granulators and a 16-part live loop recorder that features several quantizing and synchronization modes. This can record external or internal sources to resample and remix parts of your composition on the fly. Signal generators like the

Risset Tone contraption, SoundIn, and a ten harmonic additive synthesis module give you some audio starting points, and mixer and effects contraptions like a comb filter, bitcrusher and reverb let you route and modify the signals.

But it's not all gravy. There's no way to route MIDI signals between contraptions, which keeps you from using MIDI insert effects or non-native sequencers and arpeggiators that you might want to use as plug-ins. There are also no note sequencers that can be routed outside themselves—the bassline contraption, for example, has a built-in sequencer with accent and tie features but it can't be used to sequence another signal generator. AudioMulch is limited in how it saves and recalls presets for non-native plug-ins. There's no plug-in version of AudioMulch so it can't be used to expand the routing flexibility of your main host.

The verdict: AudioMulch's strength is as a sound design platform, a live jamming and performance tool with its recorders and loopers, and perhaps as a refreshing compositional tool to shake you out of a rut by making you approach music differently. It serves the program well that the documentation is clear and not too voluminous. AudioMulch runs on Windows and hosts VST format plug-ins. **VI**

IK Multimedia SampleTank 2.5 XL

This significant update to the venerable “covering all bases” soft ROMpler adds a revamped effect section, new sounds, and other enhancements.

by Jean-Stephane Guitton



Fig. 1: SampleTank 2.5 is an all-in-one player with a comprehensive selection of instruments. You can see some of the sound categories in the browser. Each instance holds 16 instruments (Parts), and its interface is all but self-explanatory for anyone but a novice.

SampleTank 2.5 XL, \$499, upgrade \$299

SampleTank 2.5 L, \$299, upgrade \$199

www.ikmultimedia.com, www.SampleTank.com

Formats: Windows—VST, RTAS; Mac—AU, VST, RTAS.

System requirements: Windows XP/Vista+, Pentium 1GHz/Athlon XP 1.33 GHz (2.4 GHz recommended); Mac OS 10.4.4+, G4 866 MHz+ or Intel Core Solo/Duo

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IK Multimedia was kind of a pioneer with SampleTank, offering one of the first all-in-one soft “ROMplers” on the market. But that was a few years ago, and IK has now come up with a significant update: version 2.5 XL.

Three synth engines

SampleTank is a “covering all bases” instrument with a 6.5GB library of sounds that we’ll discuss shortly, built into IK Multimedia’s RAM-based playback engine.



Fig. 2: The main difference between ST2.2 (top) and ST2.5 (bottom) is that the effects section has been completely revamped. It now offers three sections, each with its own bypass and up to five effects. There's also a new Master section, in which you set global Sync, Pan, and Volume.

That engine is a multitimbral, multichannel, multi-output polyphonic sample player, usable stand-alone or as a plug-in, with 16 independent parts.

It features an effects section that's been greatly expanded in version 2.5, three different resynthesis pitch/time-shifting engines (each designed for different applications), two LFOs, two envelopes, simple but efficient modulation capabilities, and a multimode, multi-slope filter. (This is shown in Fig. 1)

The whole program can be synced to the host or given a user-defined tempo, and almost all of its parameters can be assigned to a MIDI controller.

SampleTank has a clever and powerful Zone mode, in which you can assign independent treatments for each sample zone in a preset (there are also global effects and play modes). The program can import multisample programs in WAV, AIFF, Akai S1000-3000, and SampleCell formats, although in our opinion this should be

regarded as a bonus feature rather than a replacement for one of the dedicated samplers. But it's fine for importing single samples or slices exported from a Recycle file works well, and then you benefit from the powerful resynthesis tools and the multieffects section.

(Hint: after importing samples into SampleTank, do a complete Relist—and then be patient before closing the Import window; you can't monitor the progress.)

SampleTank is a "covering all bases" instrument with a 6.5GB library of sounds.

SampleTank's DVDs contain the instruments for Mac and PC plus the whole library, and IK offers a 580MB bonus disc. The update erases existing installations, but unlike previous updates you can now load projects done in former versions and recover all your settings.

An installation tip: to avoid potential problems, just after installation we opened the stand-alone program, redefined the path to where the sound library is, and issued a Relist command. Also, some components of the new update are identified as version 2.2, while the program is 2.5, so

don't let that confuse you.

The three synth engines are one of SampleTank's strengths. Resampling, the first, simply changes the playback rate: a sample is played faster (and higher) if you play it on the notes above its roots, and vice versa.

The second, PS/TS, allows independent settings for Pitch Shift and Time Stretch. This means that if you increase the tempo of a loop or a sample, it doesn't necessarily

change its pitch (or vice versa). If these algorithms are not the absolute best on the market (they have a relatively narrow range of action before you get some artifacts), they are useful in conjunction with Loop Sync.

If you engage the Sync button, loops or samples will fit the current tempo exactly. When used alone, Loop Sync shows the common time/pitch-shifting artifacts. But when activating PS/TS, loops are automatically stretched without any side-effects. When you use Loop Sync and PS/TS, tempo changes in a project have no action.

The 2.5 update enhances the ability to mangle loops by adding a useful Global Sync button. This allows all the loaded loops to synchronize in one go.

Stretch is a resynthesis algorithm that allows independent handling of tempo, pitch, and formants. It offers very convincing results on monophonic samples when used for harmonization, with Loop Sync and above all with Legato mode.

An interesting application for Stretch is in conjunction with pre-recorded phrases: you launch the phrases, and it's easy to change the original notes by playing new

SampleTank also includes some good guitars (to be used with a volume pedal, pitch bend, and mod wheel), basses, keyboards (I've used the 1920 Upright a lot), acoustic & electronic drum kits (from raw rock to tight funk, from hard techno to nice brushes), plus there are a lot of useful synth sounds.

Combis

IK has included 200 Combis (combination presets). As with the previous SampleTank and SonicSynth 2 Combis—which are compatible—these programs are

Mac used for this review. But you may need to do some bouncing anyway, because this is not a streaming instrument and is therefore more susceptible to running out of RAM in larger arrangements with a lot of instruments loaded into multiple instances.

SampleTank's dynamics processing comes from IK's T-RackS mastering processors, its distortion and amp simulation from Amplitube. And the above-mentioned CSReverb comes from the CSR, IK's model of classic hardware reverbs. The CSR version here is preset—you just set the wet/dry balance and the reverb length—but it's a nice sounding reverb. Incidentally, you're only supposed to be able to get up to 51.2 seconds of reverb, but we timed an RT60 of almost three minutes—meaning the time it takes the reverb to decay 60dB—by playing a triple forte Strnwy Piano A-1!

No details are omitted in this effects structure. There's a bypass for each section, the send can be pre- or post-fader, and each slot has a pre-post master level control.

You can load and save effects combinations in various ways. Save stores the parameters of the current effect; Save Multi saves all the effects settings for the current level—Part, Send, or Master; it would be a good idea to give these presets obvious names, maybe including a P, S, or M as part of it. Saving a Combi recalls the entire effects chain.

With this update we can now consider SampleTank's effect section one of the very best in its category. It also opens possibilities for live use, as everything you need is now included.

Finale

You have to enjoy the global commands, the Combis, and above all the large number of very good quality effects in SampleTank 2.5. This will all be available in upcoming "Powered by SampleTank" synths.

As it is, SampleTank 2.5 is still one of the most complete and versatile all-in-box ROMplers, covering all the usual sounds and some unusual ones—all adaptable with its synth engine to your taste. It has a very special sound between roughness and sophistication you'll find nowhere else.

And as icing on the cake, the 2.5 update is free. **VI**

The library contains just about anything you need to work, from acoustic and electronic rhythm sections to vocals, orchestral, ethnic, loops, and...

ones on your keyboard. The only requirement is that you play legato and in sync with the original rhythm. Realistic glides, appoggiaturas, and pitch bends are possible without strange artifacts.

To refine the Portamento, the update has a P. Curve control that modifies the length of time it takes to reach the target note.

Sound reservoir

So what is in this 6.5 GB library? Inside folders are some 1800 sounds, arranged as Parents (the normal sounds) and Children (variations of the Parents).

The library contains just about anything you need to work, from acoustic and electronic rhythm sections to vocals, orchestral, ethnic, loops (tons of loops), plus some bonus sounds from Sonik Capsules, SonikSynth2, Miroslav Philharmonik, Expansion Tanks, plus 48 licks (vocals, saxes, violins, etc.)...all waiting to take advantage of SampleTank's synthesis engine.

Some of the sounds show their age, remaining unchanged since the first SampleTank release. But there are also some real gems, either for their sound quality or because they're unique (one of the first sampled Chapman Sticks that is really usable and musical, for example). Expect to be amazed by the results using Stretch on vocals and some of the brass and winds. As long as you respect the capabilities of the actual instruments, you'll quickly produce realistic sax, flutes, vocals, etc.

accessed using the upper LED-like screen.

There's a minor bug in the version we reviewed: the names flicker while you're trying to load a program. If you encounter that, the solution is to click-hold near the Delete button, then navigate through the pull-down menu. Better yet, the issue disappears once you classify Combis in folders.

You'll find all kinds of useful stuff in the new Combis, from simple presets like a B3 with the Leslie speed assigned to mod wheel to complete set-ups with rhythm section and solo sounds, or a blend of several loops, stretched to the same tempo. These show off the potential of SampleTank, with a some clever use of effects and synthesis.

We found the Combis set at too high a level, so if you're using the stand-alone program you'll want to lower the master a few dB.

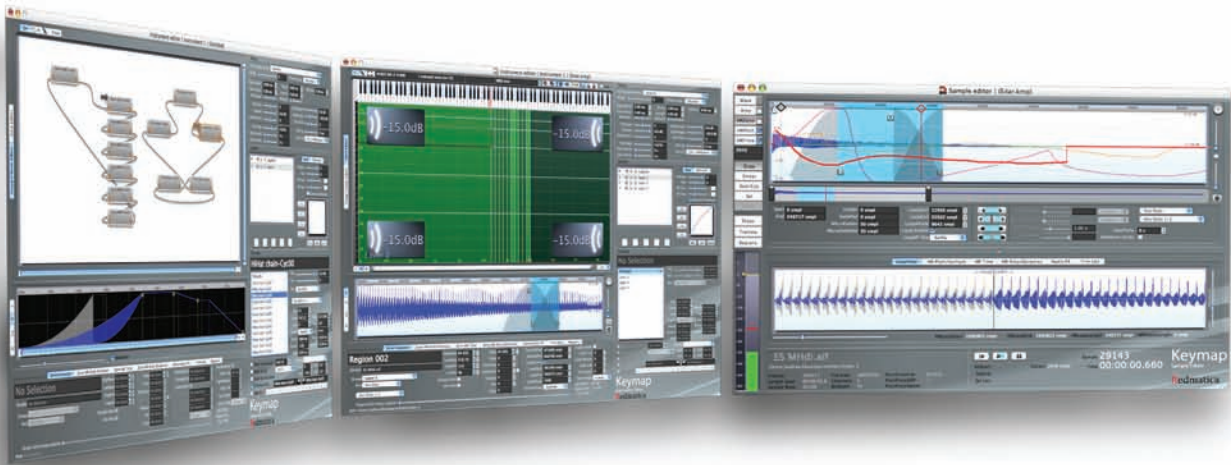
New effects section

SampleTank 2.5's overhauled effects section is a significant part of the update. Previously you "only" had five global slots, but you can now use five insert effects in each of the 16 Parts—in other words each individual instrument—to which IK has added five Send effects and five Master effects.

Naturally, this kind of flexibility requires some processing power, but the amount used up isn't totally outlandish. Inserting five of the high-quality CSReverbs, for example, uses 30% of the dual 2.0GHz G5

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MIDI MOCKUP MICROSCOPE

In this installment of our series on composers and how they did their MIDI programming, composer/sample developer **Tobias Marberger** discusses one of his cues. Download the cue at www.VirtualInstrumentsMag.com and follow along.

by Frederick Russ

Composer Troels Folmann is a multiple award-winning composer specializing in epic orchestration and modern electronica. Troels received worldwide recognition when he won the BAFTA award for his soundtrack to the Tomb Raider Legend game. This title was subsequently awarded Game Music of the Year at the Game Developers Conference (2007) in San Francisco, and Troels later received the highly prestigious TEC award in New York for his work as the composer and audio director for the series.



Congratulations on your TEC Award. That is a huge achievement! Can you tell us something about your background and influences?

Thanks, it means a great deal to me. I don't really have a traditional musical background. But I am convinced that there is a genetic quality to my trade. I did not learn to speak before the age of six, which lead my granddad to conclude I was born retarded—which is still a topic debated in the family.

Ironically my granddad was the only person in my family with interest in music. He had the unfortunate hobby of building and playing violins...both very poorly. So I had the promise of a great start.

Eventually I became obsessed with video games. I would play games all day and not care for school, people, or the two-day-old pizzas that became a substantial part of my daily nutrition. It was just about me, Spyhunter, chips, and cola.

I also fell in love with the music in the games. The majestic Commodore 64 composer Rob Hubbard was one of the leading sources of inspirations, and I still clearly remember his themes for Commandos, Last V8, Knuckle Busters, and Crazy Comet, and over 50 of his other scores.

My obsession with game music did expand over time, and I started including film soundtracks too. I had a hard time understanding the cover text of records, so I would sometimes get things that were unintentional. One of them was Herbie Hancock's Future-Shock album, which had these crazy laser things going on the cover, so I thought it was a motion picture score and then things just took off. This album



redefined me, together with E.T, Vangelis, Jan Hammer, Lee Ritenour, Trouble Funk, Chaka Khan, Sly, and Robbie, and Shostakovich.

Scrolling forward to the last five years, my influences have changed dramatically. I still listen to a variety of composers, including Hans Zimmer, Howard Shore, Pat Metheny, Thomas Newman, Gabriel Yared, David Arnold, Herbie Hancock, BT, Jerry Goldsmith, Gorecki, Hans Gregory Williams, Don Davis, Danny Elfman, Alan Silvestri, John Williams, James Newton Howard, Edward Shearmur, St. Germain, ES Posthumus, Gustav Holst, Bill Brown, James Horner, John Barry, Trevor Rabin, John Adams, Bernard Hermann, Alex

North, Jeff Rona, Richard Bona, Bobby McFerrin, Peter Gabriel, Sting, Sly and Robbie, Enya, Ennio Morricone, Bach, Mozart, and others.

What about influences in the V.I. world?

A majority of my influences are actually coming from people in the established VI community, including well-trimmed poodles such as Thomas Bergersen, Boomjinx aka Oistein, Tobias Marberger, Nick Phoenix, Alex Pfeffer, Gabe Shadid, Craig Sharmat, Aaron Sapp, Alex Towering, Colin Malley, Big Bob, and a few friends at Remote Control.

But there is another side to it that people often neglect, which is related to business and networking. I personally think that these are crucial skill sets to become a successful composer and value on par with the ability to compose, which reminds me of the brilliant quote:

"Just because nobody understands you doesn't mean you are an artist."

Please tell us about your rig.

Thank you for asking the ultimate über geek DAW question. I am quite fanatical about set-ups, but I have also learned that the amount of computers and plug-ins really don't matter at the end of the day. The best tracks I have done are less than 20 tracks and the worst have over 600.

My set-up is a 10-PC rack server solution, essentially broken down into instrumental sections: three strings, two brass, one woodwind, two percussion, one choir, and one ethnic/solo vocals. The main machine is a





quad-core, which is the biggest leap I have ever tried in terms of raw processing power. I did some initial tests and loaded over 30 high-end convolution reverbs, and still didn't see it go over 50%.

Currently I'm running a template with over 600 tracks. I am still running 32-bit, since a variety of applications are not running in 64-bit yet, unfortunately. I believe I am going to make the shift sometime in late 2008, depending on quality of support. I am still contemplating whether to convert to Mac, but a variety of the plug-ins I use are not MAC-based. I use Genelec

ing" of anything you want, either by controlling glitch-FX via MIDI keyboard or just having the program do random glitches in your music. The second plug-in is Time Freezer (PC/MAC), which is this insane program that allows you to sculpt ambient drones out of anything.

Time Freezer essentially takes a small part of a WAV file and freezes it by using different time-stretching and crossfading techniques. If you have a certain piece of music you like, you simply freeze it, render out different time-chops, and make it your own. It is a must-have for anybody inter-

I have also learned that the amount of computers and plug-ins really don't matter at the end of the day. The best tracks that I have done are less than 20 tracks and the worst have over 600.

speakers for stereo monitoring and Yamaha speakers for 5.1.

Regarding plug-ins, I could talk all day long. But I want to mention two that caught my attention recently. The first one is Dblue Glitch (PC), which is the ultimate BT killer plug-in and one of the greatest plug-in innovations ever. The plug-in also happens to be free, which is a great sign of the non-commercial sample world making significant progress.

Glitch allows you to do real-time "glitch-

ested in ambient scoring. I also use UAD (Universal Audio Devices and POCO (TC PowerCore) cards that help on the processing and mastering side.

How about analog gear?

Regarding other gear I have been trying to cut down. The majority of my gear is really based on my interest in custom sampling. The first one is my beloved Zoom H4, which is the ultimate stun gun-looking field recorder.

I use it every day, and it is truly amazing at what it does. It's essentially a \$299 field recorder with condensed microphones on it. You can also plug XLR into it, so I normally do custom recording by plugging in a set of Neumann mics into it. I believe Zoom recently came out with a 5.1 version of it called H2, which is currently listed at \$199 or something and essentially allows you to record 5.1 on the spot with on-board mics, however it doesn't have XLR inputs.

Analog gear counts: 5-string Schecter, 7-string Ibanez, 6-string semi-acoustic Ibanez, POD XT, 50 ethnic flutes from Lark in the Morning, and the mighty Hang Drum, which I am still considering to sell on Ebay, since the last one went for 8K. But there is a karma quality to the hang drum, which is difficult to explain. The drum is extremely pressure sensitive and virtually impossible to translate fully into the sample realm due to its complex resonance chamber and metal composition.

Oh and my beloved Access Virus TI, which is a crazy beautiful and somehow haunted piece of synth hardware.

You're also a Ph.D scholar in Game Music? Tell us about that.

I have always had interest in the academic side of things, so while living as a composer I also took a few Master's degrees in different subjects and eventually decided to combine my passion for music with my passion for academia.

Game music is a challenging subject



from a scientific point of view, since it has never been studied before. So I had to translate some of the more established theories from other auditory sciences to my studies. There is a great deal of cognitive studies on auditory perception and a variety of studies in the field of motion picture music and how it affects the listener. However one of the new challenges with game music is its dynamic/adaptive potential, which is unlike other types of music for

EZ drummer

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New EZX:s!

CLAUSTROPHOBIC. CONTEMPORARY. CUTTING EDGE.

With the Claustrophobic EZX the audio team at Toontrack Music have once again pushed the limits of drumsampling. It was recorded using, room, microphone and kit configuration techniques to make the drums sound short, sharp and processed. With MIDI-files played by Derrico Watson the Claustrophobic EZX brings you a sound that is on the very edge of contemporary Pop and RnB.

The Claustrophobic EZX was produced in collaboration with Sontronics Microphones and Evans drumheads.

Twisted beats with a twisted kit

Michael Blairs Industrial Ethnic Crossover signature sound of trashcans, hubcaps and backward beats was first heard on Tom Waits classic albums "Raindogs" and "Franks Wild Years". Toontrack Music now brings you Twisted Kit by Michael Blair featuring his setup and signature MIDI.

The Twisted Kit EZX by Michael Blair was produced in collaboration with Sontronics Microphones.

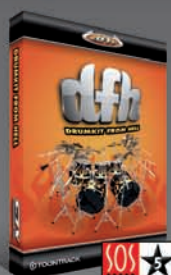
The Claustrophobic and Twisted Kit EZX:s were both sampled through the very best of outboard with distortion, reverb, compression and attack included in the internal mixer. This enables you to access a large number of mixer presets by Count Bass D, Richard Devine, DJ Amplive, STS9, sub-ID or to save your own custom mixer presets (with EZdrummer 1.1)



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EZX Expansion Pack



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EZX Expansion Pack

static media. The interactive nature of game music is absolutely breaking new ground.

A significant part of my Ph.D. studies in game music related to developing new methodologies for advanced types of applications of music in the game. One of my main focal points was—and still is—the development of something I call micro-scoring. Micro-scoring is essentially about breaking the score into a variety of small components that are assembled in real time according to player action and/or interaction.

You have to imagine that there are thousands of things going on in the game environment; the idea behind micro-scoring is to support the major elements in the environment. An example can be a 3-second score for breaking pillars or falling stones, which is scored in the same key as the main ambient background score.

We also have more detailed types of micro-scores, which are based on both real-time time stretching and slice-based samples. This allows us to fully adjust pitch and timing based on player interaction with the game.

An example of this is adjusting beats to footsteps and increasing tempo when the character starts running. A good example of micro-scoring application relates to chopping up a score into multiple components

So it's essentially composing a score in 15 different steps and cutting each step up so it can seemingly integrate into any of the other 15 steps. The system then blends

There is talent (10%) and exercise (90%). I don't have a particular talent for music, but I have a desire for learning and being open-minded towards emotions and influences. I speak of this as a "free mind," which is my mushroom philosophy of an unbiased, naïve, mental condition where you just do what feels right. I know it sounds strange, but allowing myself to work unconstricted helped me a lot.

I believe all composers battle their own compositional patterns and realizing that I don't have to battle them anymore was a great step forward. However it is hard to speak of a free mind without a framework. My framework has been 20 years of having fun with music, which is my way of exercising. You have to know the rules before you can bend them.

I personally believe music is all about generating emotions. It doesn't have to be complex. It doesn't have to be a John Williams. It doesn't have to use the best technology in the world. But it must have the nerve. A beating heart, a pulse, a breath. Otherwise it ends up being a MIDI-based saxophone solo in an elevator or a "Strangers in the Night" pan flute mockup in your local supermarket.

So what am I doing differently now. The best answer I can give is one word: Listen." I listen to music and learn from it. I ask when there is something I don't understand and the VI community is priceless in this context. The combination of the "free mind" and the ability to listen are the two main things I do differently.

I always have different listening periods

sions is that technology or software will make them better composers. I personally don't believe in this philosophy—just like running shoes don't run by themselves. But this is obviously a subjective observation. It is my fault I cannot make a masterpiece with my \$299 Zoom H4 field recorder.

You take part in custom sample libraries (groups of composers who pool finances and editing time to develop private libraries). Why bother when there are so many great ones out already?

All libraries have their advantages and disadvantages, and different philosophies about recording techniques, performance techniques, and programming techniques. One of the frequent complaints is that libraries somehow restrict compositions, since you compose for the library more than you compose for yourself. The custom sample libraries provide you the opportunity of recording libraries the way you want them. I personally do it for the following reasons:

Natural hall-based verb in samples (no reverb can match natural reflections);

Emotionally invested and dedicated performances: uninspired performance is one of the main reasons that sustained samples don't work in the sample realm in my opinion;

Effects: conventional libraries go light-hearted on effects, which is one of the major components used in soundtrack scoring;

No noise reduction of acoustic samples: noise reduction hurts the samples and tends to remove the natural reflection and

One of the new challenges with game music is its dynamic/adaptive potential, which is unlike other types of music for static media. The interactive nature of game music is absolutely breaking new ground.

the steps in real time and you have a much more varied and versatile score—made from micro-scores. This allows you to adjust mood in music with using basic cross-fades, but actually have adaptive types of compositions. Needless to say it's a fairly complicated effort.

Your cues are a lot better than when I first heard them. What are you doing differently now?

where I focus on different types of listening exercises. I remember from 2005-2006 I was mainly focused on understand mixes and balance between instruments, which helped me significantly moving forward. These days I mainly listen for counterpoint melodies and try to understand their purpose in compositions.

But it also important to recognize what did not help me move forward. I believe one of the most frequent composer illu-



properties in the audio;

Wrong samples: conventional libraries tends to cut out the "wrong" samples that may have a slight off-pitch or chaotic aspect to them. I keep them for the same reason, since "mistakes" are unavoidable in any acoustic context, and they help bring life into the samples;

I made it: the feeling of recording your own samples or being a part of sample project can be deeply satisfying. The per-

formance and sampling is fun.

Editing...not so much;

Playability: we all know how certain patches just work for us, both sounding good and being great to play. I refer to this as the playability of the samples, which is one of the most important things. It doesn't really matter whether you recorded a 192kHz string library, if it doesn't play well or was made from uninspired performers and un-dynamic programming.

There are a variety of other components that goes into the custom philosophy. One of the last major custom sessions I was involved with was the sampling of a symphonic choir. We realized that none of the current libraries could sing extremely fast phrases and none of them had true legato features, which eventually became our motivation for recording it. We all learned a great deal from the session and it is now a part of my template together with the other great commercial choir libraries.

However, custom samples do have the same issue as commercial samples, since they will define what you can compose and what you cannot compose. The real frontier for me is live instruments, which is why I spend the majority of my time practicing on electric and acoustic bass and guitars, percussion/drums, and violin, which is crucial for understanding and improving custom string samples.

I would advise anybody to practice on the instrument they intend to sample, since it provides a much better understanding of the instrument and its capabilities, especially in relation to all the details we often miss in both custom and commercial libraries.

I also find it more inspiring and fun to play live elements. It gives another sense of soulful purpose to the process of scoring, at least for me. However, samples can do so many things that I cannot in the live realm, so I just feel privileged having so many amazing options.

People have different philosophies on the subject of sample libraries, but I try to have an open mind about all libraries whether they are commercial or custom. It really comes down to what you like and what sounds good to you. As the great Doctor Phil says: "There is no reality— only perception."

Please describe your approach to MIDI. Are you playing in these parts live, scoring them in, or using a MIDI event editor of some kind?

I am not really technical with MIDI and my MIDI approach is different based on



the style of music I compose, whether it is super polished and tight electronica or more lively orchestral scores. So I cannot really say I have a one-trick pony in this regard, since I like to experiment most of the time.

The orchestral scores generally have a more structural approach, since they build on my +600 track orchestral template, which mainly consists of custom libraries and commercial libraries such as Eastwest Quantum Leap Symphonic Orchestra XP and True Strike Percussion 1 and 2.

I sometimes use quantization on orches-

build custom templates for this group in particular.

It gets a bit more complicated when we start discussing MIDI approach in the electronic realm, since it is often based on what sounds cool or feels good—and highly related to the "free mind" I was rambling about earlier on. I like putting sounds together, so sometimes I will sit with my Virus and combine different arps, then add some beats and lead synth, run it all through glitch, render all the tracks, and re-run them through glitch again.

Other times I will just play a drone and

There is talent (10%) and exercise (90%). I don't have a particular talent for music, but I have a desire for learning and being open-minded towards emotions and influences.

tral scores depending on need and application, however the general rule of thumb is to play things without it, since it tends to create a more vivid sound. I do use quantization in orchestral scores, especially when it comes to more tight layering of rhythms, but I normally have a 2-4% randomization of the note placement

I also have dedicated percussive templates, which I sometimes use afterwards to boost up the percussive sections. I generally use percussion a lot, so that's why I

play live instruments over it with plenty of verb/delay, then render the track and play it through Timefreezer and then start scoring on whatever soundscape I created. Timefreezer will create the most beautiful ambiances, and a single verbed piano on top of that can do it for me.

Let's look at your first cue [vi_custom_choir_example]. I'm struck by the sense of space you're putting into the cue. What IR do you use?

The IR is a convolution shot of the corporate lobby of the game studio, Crystal Dynamics, where I work as Audio Director. The lobby is roughly the size of a small scoring stage and made purely from glass and concrete, so it has an extreme amount of reflection. I used two instances, one for orchestra and one for the choir.

What about mastering?

I generally don't master my tracks too much, mainly due to my lack of mastering skills. But I also like to retain the original quality of the sounds, and mastering can sometimes distort that. However, it is hard to generalize on mastering, since it is different based on what type of music you do. But I tend to go mildly at it in context to orchestral scoring and more heavily in context to electronic-based scoring. Compression, limiters, maximizers are unavoidable on any good rock/pop/electronic/dance/trance mix.

Percussion: commercial or custom?

The percussion is a mix of unreleased commercial samples and custom percussion samples. Tobias Marberger's GTown project got me really hooked on recording custom

and with no processing at all. The arp-based guitars are live and made with a semi-acoustic Ibanez.

This is a great example of a fairly boring track somehow spiced up by live elements. I played the semi-acoustic three times and plenty of delay to give a full sound.

Percussion sounds nice. Bass Drum sounds sweetened. What did you do?

No rocket science here. I tuned the bass drum to match bass tone and colored it slightly with some EQ.

Are these sampled vocal passages or a live singer? Can you tell us something about how you treated her voice?

The vocal passages are sampled improvisations that I just threw on top of the compositions. I added some delay to the voice, but that was about it. The real quality comes from the voice and performance itself.

I believe that performance is the single most important thing in samples. However it can be extremely hard to motivate performers in sample sessions, when you do rigid repetitions. I always try to make the

So all this is a mix of custom samples and EWQLSO XP, which has an amazing 2-trumpet patch. However, if you listen carefully you will notice a lot of different FX on the brasses. All of these are custom, and it really allows me to create more challenging dynamics and provide more versatility in the scoring. I would love to see orchestral libraries focus more on this, but the majority of libraries (both custom and commercial) tend to focus more on the traditional short and long notes.

At :33 you have a very cool melodic percussive part. What was your thinking behind that?

I am just toying around. I wanted to take the composition in a slightly other direction, while retaining pace and sound. However, it can sometimes be effective to remove some of the bass instruments in the orchestration, which brings some air into the composition. I added some sticks to punctuate the percussive hits.

Let's look at your last cue [vi_percussion_example]. The hits sound great—perfect for trailers.

Yeah. I probably went a bit overboard on the maximizing tools on this one. I normally use the UAD as my main mastering tool. UAD still contains some of the best mastering plug-ins around.

The samples in the piece are mainly recordings made with my Zoom field recorder and my tom kit. I have bought a variety of toms over the years, so I have this percussion kit with toms that I have recorded extensively in the corporate lobby I was speaking about earlier. I normally just grab a few people and we have some ensemble sessions and go crazy.

One of the golden tricks for epic percussive recording is to use two sticks instead of one—first of all because it gives you more power, but secondly because it brings a slight flam sound to the percussion, which is great for some of the more epic things. There is really no mystery to this—it's just slamming on things and recording them with a set of stereo microphones. I encourage everybody to do this. You don't have to own any percussion. I recently did a ensemble custom session on an old dumpster that turned out crazy good. **VI**

Check out Troels' site at www.troelsfolmann.com. Also, check out our VI communities at www.vimag.net and www.vicontrol.net.

One of the golden tricks for epic percussive recording is to use two sticks instead of one—first of all because it gives you more power, but secondly because it brings a slight flam sound to the percussion, which is great for some of the more epic things.

percussion, so I have a fairly big amount of custom percussion samples. Tobias has been absolutely amazing at providing advice, and I am in deep gratitude for the knowledge he has provided to the VI community and to me personally. [Tobias was featured in last issue's column.—Ed.]

Let's look at your second cue [vi_custom_live_example]. Your mix is very full and rich with a quite different approach from the preceding piece. The bass and guitar sound full and rich.

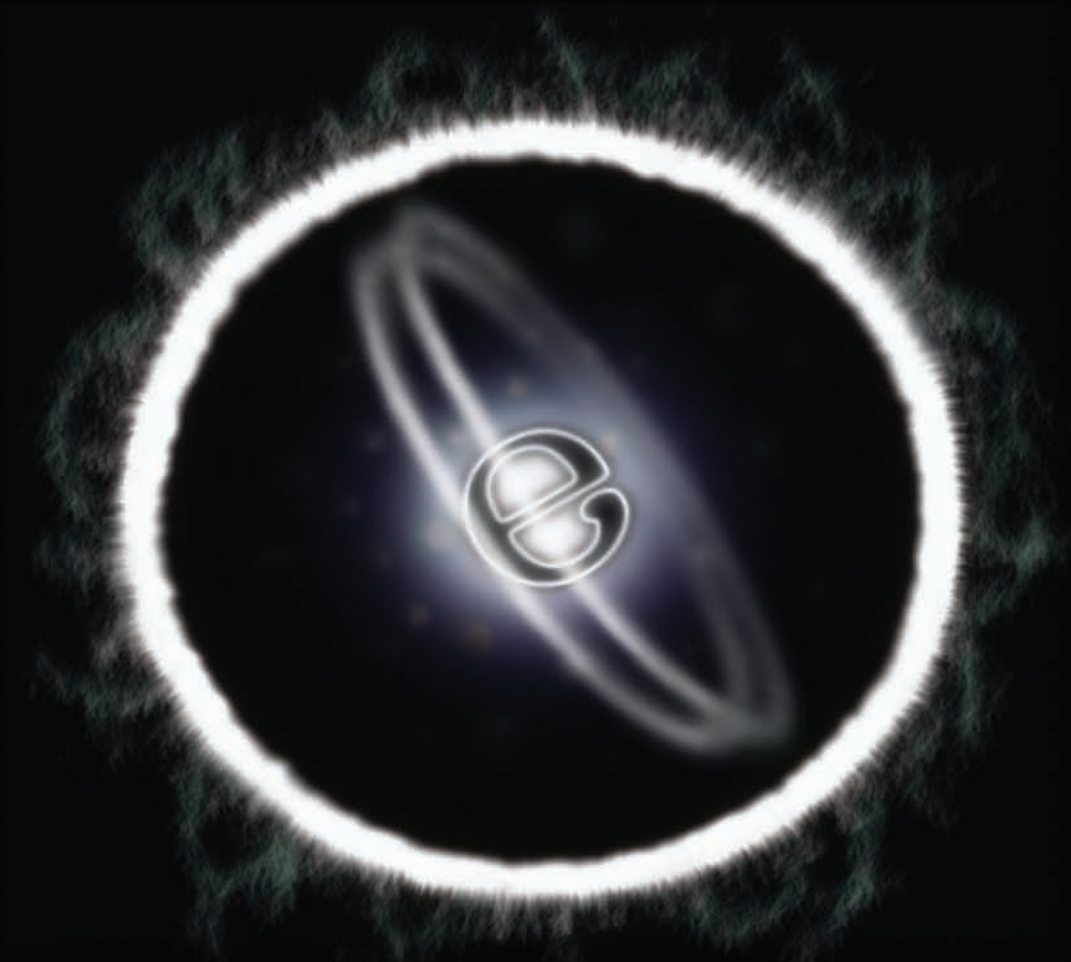
So this example is just something I put together in ten minutes for the purpose of this interview mainly focusing on why live elements are important. The bass and Telecaster is from Eastwest Ministry of Rock

sessions alive by motivating the performers and ensure that material is recorded in an inspiring, purposeful way.

I generally don't process vocals and I know it has been a bad session if I consider auto-tuning the samples afterwards. I like to retain the natural quality in vocal samples and ensure I got inspiring performances. But if somebody asks me to do a polished pop mix I will layer the lead vocal tons of times in chorus and tune the whole thing, since this is most often dictated by the style. Britney, you listening?

Let's look at your third cue [vi_custom_orchestra]. You seem to like big spaces for your symphonic material! Around :17 you're using a very nice brass sound...

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PAV Blüthner Digital Model One

This sampled grand piano library just starts with samples of a great piano. After that the convolution engine transforms it into a whole variety of pianos.

by Nick Batzdorf



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\$299

www.proaudiovault.com

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VST, AU, RTAS.

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1.66GHz, 1GB Ram; Windows
XP or 32-bit Vista, Penium or
Athlon 1.4GHz, 1GB RAM.

Copy protection: online using
Native Instruments utility.

It would be an understatement to say that there's a lot of technology and science behind PAV's Blüthner Digital Model One. This piano library represents a pretty extraordinary effort, and the outcome is one of the very best sampled grands on the market. Or maybe even the best, depending on your priorities.

BDMO is the work of Ernest Cholakis and Dan Dean, who teamed up for the Dan Dean Solo Strings Advanced library reviewed elsewhere in this issue. They recorded a 9' Blüthner grand at George Lucas' Skywalker Ranch studio, under license from the manufacturer, at 12 pedal-up and 12 pedal-down velocities.

Blüthner Digital Model One. This excellent sampled grand starts with close-up recordings of a great piano and "removes" the room. You can then apply one of about 250 different timbral impulses from great pianos in history, giving you a wide choice over the sound (note the very rough approximation of the EQ curve being applied by this impulse). The instrument also features a choice of several sustain impulses that capture the inside of the piano when the sustain pedal is down, shown in the drop-down menu—a remarkably successful feature that sets this instrument apart.

Starting with a really great piano was the first thing these guys did right, but as we'll see it doesn't stop there.

BDMO

This roughly 4.1GB instrument comes in a Native Instruments Kontakt 2 player (it can also be opened in Kontakt 2), and it takes up a little under 258MB of RAM at the default disk-streaming settings. It makes extensive use of the NI engine's built-in convolution processing, so depending on the convolution programs loaded it reached as much as 70% of one CPU in the test dual 2.5GHz G5 Mac.

Saying that BDMO is one of the best digital grands doesn't quite tell the story, because the included timbral impulse responses effectively transform it into a variety of different pianos just by selecting one from a list—which is one of Cholak's specialties. (You can read more about his work at <http://www.numericalsound.com/>; he's an interesting guy.)

There's also a selection of impulses for when you engage the sustain pedal, and if you have a "variable sustain pedal" (we didn't) you can control the impulse level in real time. To me these pedal-down impulses are the most impressive thing about the instrument. There are other sampled pianos on the market that also sound good, but Cholak's just *nailed* the resonance. BDMO offers two different types (that I can't tell apart, frankly) each with a choice of crisp, clear, even, full, or dark.

Finally, there are 20 progressively large reverb impulses labeled A - T, each available in crisp, clear, warm, and dark varieties. These reverbs integrate extremely well with the Blüthner, with none of the ugliness that pianos are so good at exciting in less tailored reverb programs. You have control over the wet level, dry level, and pre-delay.

Ears and fingers

Dean and Cholak like to put their emphasis on sound quality above all else, and that's really the first thing that strikes you about BDMO: it sounds just amazingly realistic—round, rich, smooth, fabulously detailed, with great clarity and sense of space. Well...that's the first thing to strike you once you un-bypass the reverb, which it absolutely needs; the initial defaults want changing every time you load a program (until you save your own custom ones). Then the second thing you notice is the subtle realism when you play the sustain pedal, as mentioned above.

PAV bent over backwards and all the way around again to make this a quiet instrument. One of the reported benefits of sampling the Blüthner at Skywalker Ranch was that the studio is very quiet—far from any

traffic. (Another benefit is that it's a great studio, of course.)

Then they used some proprietary secret sauce to reduce the noise further. While I have to admit that noise in sample libraries—even in pianos—doesn't usually bother me the way it does some musicians, this library has no noticeable noise reduction side-effects whatsoever.

BDMO is touted as having the dynamic range of a real piano, and the dynamics correspond to the real thing (they call this Linear db Scaling™). But you don't necessarily want the full range in a sampled piano, depending on taste and a number of factors including the physical response and transmitted velocity curve of your controller, so the piano is available in six different dynamic ranges (labeled 100, 85, 75...45).

By instinct I first loaded a full-range 100 program and didn't at all care for the way it played—at least not with the default velocity-transmitting curve in the Kurzweil 2500X (88-key weighted action) and minimally skilled fingers employed for this review. The 100 and even the 85 programs are harder to control than a real piano is.

However, the 75 and under programs play just beautifully. The transitions between the 12 pedal-up and 12 pedal-down layers are absolutely transparent, without any notes that bite or fail to speak properly. This is a totally playable instrument, and there isn't a single note that gives away that this is a sampled piano.

A couple of miscellaneous features to mention are the chorus, for those inclined, and the release sample length control. BDMO provides independent control over the pedal up, pedal down, and sustain pedal release times. This can change the character of a piano performance a lot more than one might think.

Timbral impulses

It's always interesting how different developers can approach sampling projects with totally different ideas, yet all of them work well despite their apparent incompatibility. There are pianos miked from some distance that work very well.

But PAV's concept is to mic the piano close-up so you get all the detail, then presumably use reverse convolution to "remove" the room so you get as bone dry recording as possible. After that you have a piano that can be shaped any way you want using the timbral convolution impulses. Note that the reason this works in BDMO is because of the quality of the impulses; it's not something any old fool

could just up and do.

The timbral impulses that come with the BDMO cover an overwhelming variety of pianos throughout the ages in all kinds of different contexts. There are 50 different Classical ones, identified by year (as far back as 1932), coyishly-named piano make if available (e.g. Italian Piano A), and source (almost always a recording). Then come some custom impulses just to change the sound, another 50-odd jazz ones, lots of impulses of other pianos (including some digital ones), pop/rock, R&B, and—believe it or not—vocal syllables. The latter are a novelty.

All seven groups of timbral impulses are identified similarly to the classical ones, i.e. you don't know exactly what they are. But that really doesn't matter, because sounds can usually fit several different contexts. Plus there's a rough 8-band display of the equalization curve for each impulse.

Since you're not going to go through 250 timbral impulses every time you want to find the right sound for a piece, the thing to do is save a few presets you like with names that you can understand. A few of the impulses can sound a little murky, and some can be quite radical, but the majority of them succeed in giving you a very different but equally good sound.

Having said that, it's worth adding—no offense—that I happen to like the unimpulsed sound as much as any of the presets I saved during the course of this review. So it's not like Dean and Cholak's will show up at your door and beat you up if you just leave the timbral impulses completely bypassed. They will if you don't use any reverb, however.

Open wallet?

This is one of those sample libraries in which everything comes together and simply works—concept, source instrument, performance, studio, recording, sample programming, and in this case convolution processing. That magic didn't "just happen," though—developers Dan Dean and Ernest Cholak have a lot of experience with sampling and convolution processing between them, and they obviously gave this project a lot of thought before they even started.

The Blüthner Digital Model One is an outstanding piano library by any standard. It's very satisfying to play, flexible, it sounds fantastic, and it's uncannily realistic. The bar has risen. **vi**

LOGIC

(CONTINUED FROM PAGE 16)

Pro 7 hovered around 50% in Logic Pro 8.

But you can more than make up for that if you have a machine with multiple cores, because Logic now distributes tracks among them. This reportedly works with third-party instrument and processing plug-ins as well as Logic native ones, so a quad or 8-core machine should stretch a very long way indeed.

We mentioned the Logic 8 EXS24 sampler's unlimited RAM access in last issue's "Trends" preview; as long as you have 5GB or more installed, EXS will grab as much as it needs. EastWest has announced that their PLAY sample player (see the 9/07 issue) will also have this feature soon—a major advance, since it will allow one computer to take the place of several. Right now this is a little bittersweet, because the largest EXS24-format library around, the original Vienna Symphonic Library, doesn't work fully in Logic Pro 8 yet.

Still, this is a big advance—especially if you're using larger EXS-format libraries such as, say, BassVI's Anthony Jackson library or one of Kirk Hunter's orchestras.

Conclusion

Apple has gone a long way toward making Logic Pro more accessible to new users, and in general they've done a great job of cleaning up the interface and fixing nag-

ging bugs. But even if they'd done nothing, it's priced so low that a lot of people using other programs would probably pick it up just for the sake of compatibility. **VI**

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2-Track Sequencing

random
tip

We all come up with our own ways of working, and (as people who are about to try and sway you to theirs always say) there's no right or wrong way. But there's a basic sequencing technique—"sequencing" as in the actual process of recording MIDI and audio tracks—that it seems most people aren't aware of.

Now, our concepts about sequencing tend to be rooted in the tape recorder. And that makes sense, because it was the only thing anyone used to record on for a good 70 years.

There's no obvious way to improve upon the basic transport and even more advanced autolocating functions in a tape recorder: record, pause, play, fast shuttle, go to... and so on. That's true even in digital audio sequencers, with their random access—although being able to point to where you want to go is certainly a nice advance.

The basic tape recorder idea of side-by-side linear tracks also works well. You can't really improve upon that as an interface, never mind that in DAWs it's just a friendlier way of presenting what's really going on: data go into a buffer and get bunged onto a hard drive.

Even loop- and region-based programs maintain the basic concept of tracks. MOTU Digital Performer has a "Chunks" feature for building up arrangement in which the borders between lanes aren't hard, but it's still not really a departure from the basic idea of tracks.

We all know the tape recorder recording process: record-enable a track or tracks, press Record, play the song, stop, rewind, and go back to listen. You can

either keep the take or decide to discard it and start over.

Typically you'll record several takes of everything until you produce a good one. Or maybe you like to comp parts, in other words you grab the best sections from multiple takes and assemble a master track. Nobody will know.

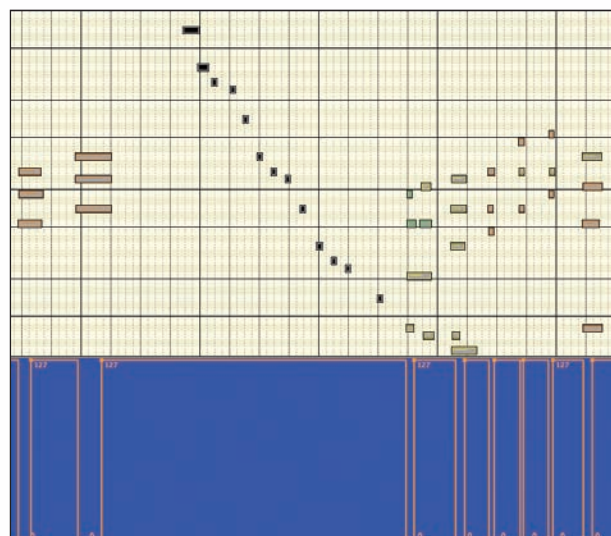
And here's we start circling around the point of this discussion. If the take is good except for some rough spots, you can punch in over the bad parts to replace what's there. You either punch manually or set the in and out points into the autolocator on the fly.

Sequencers work just like tape recorders in this way. Almost every MIDI sequencer since the first ones in the early 80s has been capable of punching in and out. It's a simple, fast feature for replacing bad sections.

But when you're composing in the sequencer, you're typically building up parts, not always in real time. The earliest hardware MIDI sequencers, such as the Yamaha QX-7 from the early 80s, had a great system that still works really well for sequencing. It was a 2-track machine; you recorded on track 1 and then bounced the part onto track 2, freeing up track 1 for more recording.

Today it's not necessary to bounce in order to free up the recording track, and you don't have to combine all the MIDI

parts on all channels onto one track. Thank goodness—although the QX-7 (and later the QX-21 and 8-track QX-5) had an ingenious system that let you extract a MIDI channel from track



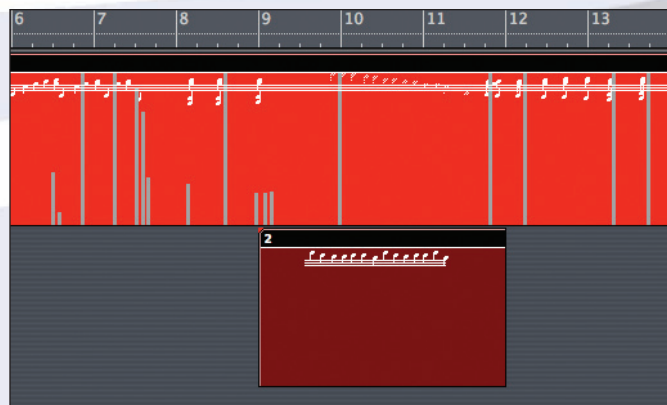
1. This piano part has a sustained chord with some notes playing over it (the black ones). You don't like what you played and want to replace them. But if you punch in, you'll mess up the sustain pedal—plus it's a hassle.

2 back onto track 1, where you could edit it.

And here's the tip: you can borrow the basic 2-track sequencing idea, and it works for MIDI and audio sequencing. A lot of the time you might find it easier to make a duplicate track of the one you're sequencing for recording onto. That gives you a track to work on without having to disrupt or edit the main one when you're recording.

When you need to replace a section, you just mute or erase the bad MIDI notes or audio, locate far enough back to hear the music so you can come in at the right place, and record on the next track. You don't have to worry about setting in and out points, or having to edit region boundaries if you step on something you wanted to keep, or deleting MIDI controller data such as sustain pedal off commands that make everything ring.

It's a good thing. VI



2. Better to set up a duplicate track, record on it, and merge the parts when you get them right. This is just one example of why this basic sequencing technique can save a lot of work.

LITTLE REVIEWS

(CONTINUED FROM PAGE 27)

Odyssey and the venerable ARP 2600 before it. Being small and only monophonic, it really wasn't all too exciting.

So you might be surprised that a developer would care enough about this cheap but affable little synth to bother emulating it. But sometimes it only takes an ounce of inspiration to create something much, much bigger than life...such as KikAxxe.

KikAxxe is faithful emulation of the single-VCO synth, plus an analog-style 16-step sequencer (based on ARP design as well), a programmable drum machine, and a recreation of the vintage Maestro Echoplex tape delay. You begin to see the ultimate intention of this instrument: being a funky, compact beat- and phrase-making toolbox. It's perfect for fashionable tributes to The Who, Depeche Mode, Vince Clarke, Jean-Michel Jarre, or 808 State.

This combo is arranged as modules within a virtual rack, and it can be run either stand-alone or as a VSTi, RTAS, or Audio Units plug-in. Though inviting and familiarly top-down, the interface offers many options between its Easy and Advanced modes.

You start with fun in the Sequencer+ module, where up to four sets of synthesizer and drum patterns may be loaded at a

time. Synth and drum patterns can be stored separately, but they may also be combined as session files for easy song or performance loading.

Drum patterns can consist of up to seven different sounds from five sample-based kits, including Acoustic, Urban, Electronic, 808- and 909-style. Individual drum sounds are editable using fully resonant hi- and lo-pass filters plus discrete LFO shaping with frequency, shape, and range control.

One of the coolest features is the momentary "roll" trigger. This can be assigned to any drum voice, and you adjust the speed all the way up to a high-pitched buzz. Roll durations are quantized so they always begin and end cleanly on a beat.

Synthesizer patterns are plotted across 16 steps using sliders over a wide frequency and dynamic range. Crafting simple bass lines and classic arpeggios of recognizable ARP character is a very organic and hands-on experience with KikAxxe.

You can control the swing and keyboard gating amount globally. It's also possible to ride the sequencer tempo slider in real time, which is handy for the ebb and flow of a live situation.

Every parameter can be mapped to a controller using MIDI Learn, and the internal clock can synchronize to MIDI Beat Clock for LFO and beat-sync triggered

effects. You can shuffle synth and drum patterns manually on the fly, or you can advance through them for different sections in the music.

The Easy mode is ideal for live performance. A non-editable version of Sequencer+ allows you to call up to four synth and drum patterns from the library in real time. The simplified Axxe module includes large performance controls for adjusting vibrato, pitch bend amount, octave transposition, tone color, filter brightness, attack "sharpness," and more.

Sandwiched between the two modules is a horizontal DJ-style fader that lets you to adjust the mix blend between modules. A small 3-1/2 octave virtual keyboard with key-latching spans the bottom of the interface, along with tape delay controls for echo time (0.03-0.87 sec), sustain/regeneration, and echo mix/wetness.

Even in advanced view, the Axxe synth module is dead easy to work with, providing all the standard subtractive parameters you'd expect. I loved the quirkiness of this entire get-up. What I didn't expect was for the whole shebang to sound as beefy and downright nasty-funky as it does.

Especially when you consider the street price, KikAxxe is an ultra-affordable, immensely fun, and groovy sounding instrument to add to anyone's toolkit. **VI**

RAPTURE

(CONTINUED FROM PAGE 22)

ed for each filter and Tube for the drive section. Running two comb filters in parallel allows you to accentuate specific frequency bands; those bands are, of course, determined by the cutoff controls. How pronounced the bands are is determined by the Resonance settings.

We were going for a pulse-width modulation sound (thick and chorus-ey), so we used step sequencers (big surprise) to modulate both filters' cutoffs and the first filter's resonance amount. A liberal dose of Tube Drive keeps the sound fat and edgy.

Crash course

At last we come to Element 6. For this we've selected a crash cymbal sample. Very little was done to process it (a bit of amplitude tapering), but we set up a whacky filter mod scheme utilizing the envelope

generator and the step sequencer. You won't really hear their effect unless you select a filter with more poles (LP 4p, for example) and crank up the resonance. Do so at your own risk.

Steppin' on out

A couple of final tweaks and we're ready to perform: first, a bit of reverb added in the Master FX (small hall, accessed via the GLOBAL button next to E6), and then some balancing and panning of the elements using the mixer.

The manner of performing this program is, of course, entirely up to you. We like to turn off all of the elements except for E1 (use the ON buttons in the mixer), then add the elements back in one at a time at rhythmically appropriate points (and at whatever note intervals strike our fancy). We stay within the note range F2 – C4, and add elements in this order: E2, E5, E4, followed by adding E6 and E3 simultane-

ously. This has the effect of building an ever-more-complex series of interwoven melodies followed by a big climax marked by a cymbal crash and a giant low drone.

Dare we say, the resultant effect is positively...rapturous. **VI**

Michael Marans first worked with Cakewalk software in the late '80s, back when the company was known as Twelve Tone Systems. The product was a very nice DOS-based MIDI sequencer called, curiously enough, Cakewalk.

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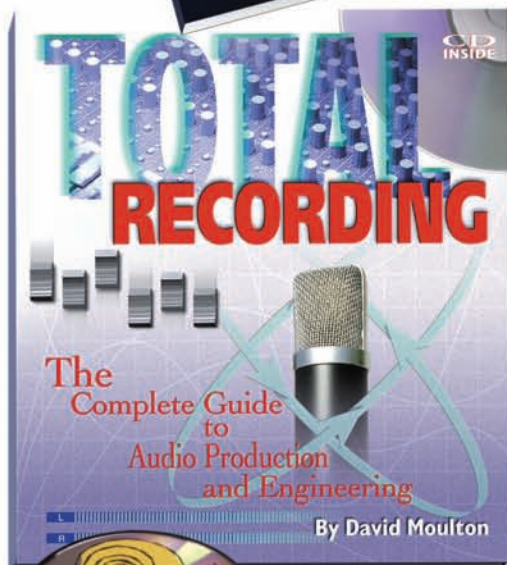
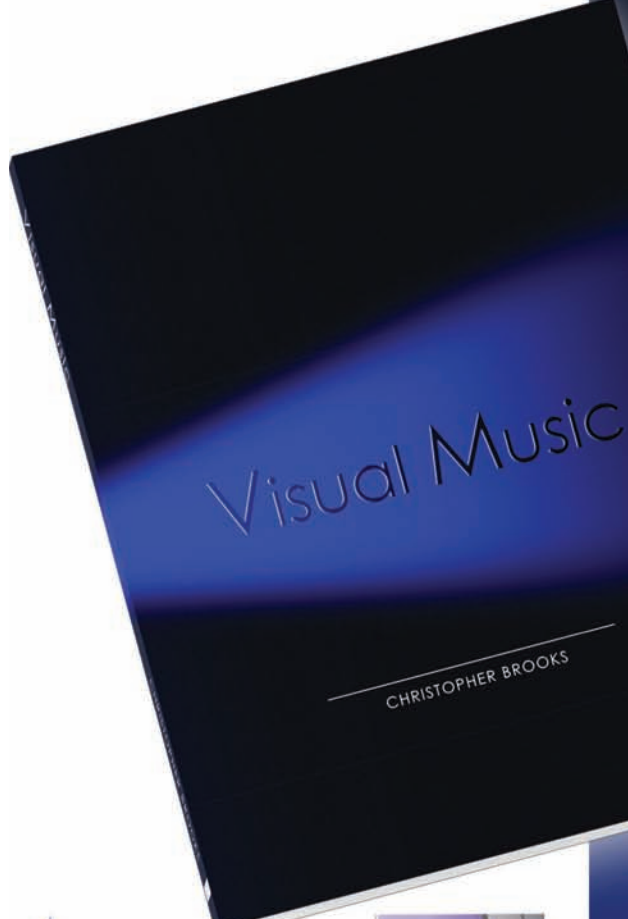
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TRENDS

(CONTINUED FROM PAGE 64)

note: you have no real reason to release substandard products from here on out... Users take note as well: if you find yourself

Except that WIVI has the realism of samples without having to deal with any of the downsides. Memory access and storage are non-issues, but most importantly there's no articulation-switching or programming that's not in real time.

Now, the catch is that WIVI doesn't really sound as good as a good sample library. That's not to say it sounds bad by any stretch, just that I personally wouldn't use an

gram—if you even could program that kind of subtlety.

It's worth pointing out a conceptual difference between WIVI or for that matter any synthesizer and a sample library. This is way overstating the point, but with the synth you're playing the instrument and controlling the sound; with the sample library it's more like you're stitching together performances to come up with the musical line. Again, a major overstatement, but it explains how WIVI is significant.

Will WIVI or something like it eventually take the place of sampling? At the risk of



Flying Hands Percussion

complaining about problems in libraries, this software will make it a lot easier to fix them yourself—and to create new instruments that nobody else has." That says it all.

We'll come back to sampling, but first let's talk about a new synthesizer called Wallander Instruments WIVI. Wallander just released woodwinds, and we reviewed the brass in September.

WIVI does very good orchestral instrument emulations that you just play in real time, and it works really well with a breath controller and especially with a wind controller. The developer, Arne Wallander, is quick to point out rather modestly that this is just additive synthesis and that the devil is in the details—it's not a new technology.

Now that we're well into the second big wave in the digital revolution, it's a little more difficult to point directly at the most important products of the year.

entire orchestra of it, because the overall sound would be too sterile by comparison.

But it can add a lot to a piece if you only use it on some parts, because the detailed expression you can get out of. If you play wind controller you'll really love it, because you can just toss off lines in real time that would take forever to pro-

looking like a total fool at any time, a betting person would have to say no. Samples have a lot of inherent life, and so far we haven't found an easy way to synthesize life. But additive synthesis seems likely to play an expanded complementary role in the future. Keep an eye on what Wallander Instruments cooks up, and for that matter what Synful, another company taking additive synthesis in a different direction, is doing.

As to sampling, King Idiot only said that there's no excuse for substandard libraries

Fable Sounds Broadway Big Band



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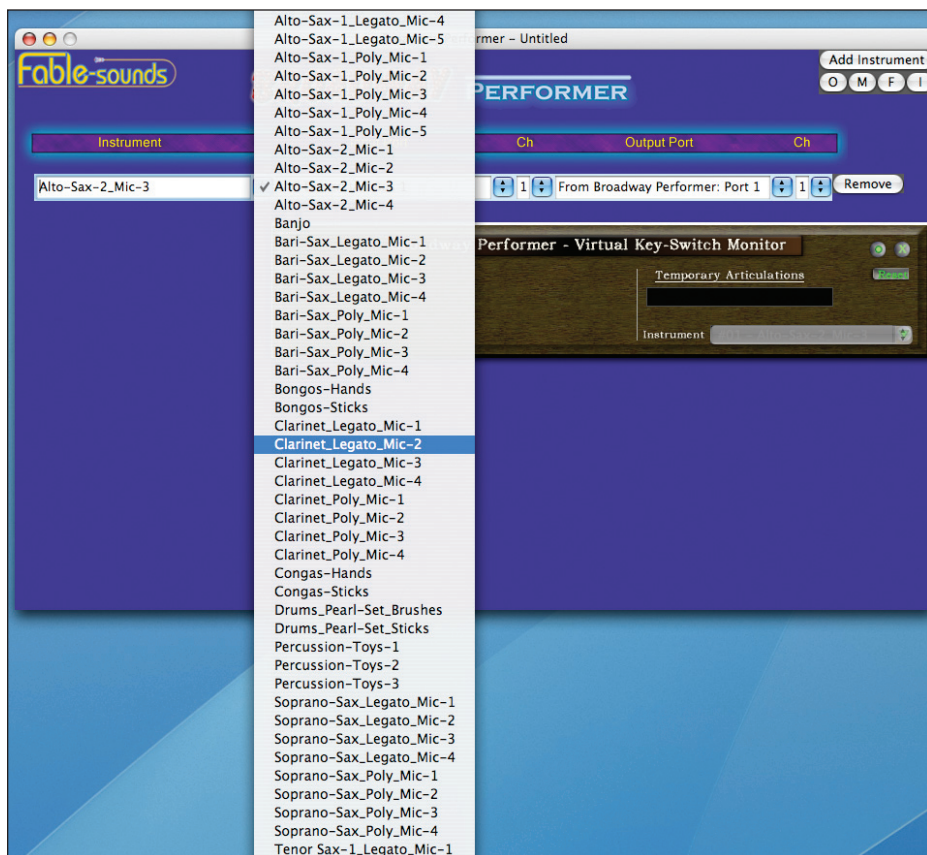
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now that Keymap is out. In fact developers have raised the standards to the point that most of the sample libraries we've reviewed have been very detailed and tended to use some pretty sophisticated programming. Flying Hand Percussion (reviewed July)—a gorgeous library—is a perfect example.

It's not that every library requires that level of programming, but we've come to take features like legato transition samples

If you want a petrified dung zither from the hills of Andalusia, someone has sampled it.

and automatic sample alternation for granted. Developers just didn't have the benefit of Keymap to speed up a lot of the grunt work.

So the overriding trend in sampling has been more evolutionary than revolutionary. However one library that you arguably could call revolutionary is Fable Sounds Broadway Big Band (reviewed in the May

issue). No offense to any other horn libraries, but this is the first one to bring sampled pop/jazz horns to the same level as the top orchestral libraries we have. (BBB also has other instruments that are also very well done, but it's the horns that

induce musicians to buy the product.)

Like many advanced developers, Fable Sounds wrote their own MIDI-intercepting utility program to handle their system of keyswitches, which is what lets you handle the nuances of pop/jazz horns on the fly—different articulations, notes of different length, etc. They have some clever ideas about sampling.

Sure BBB is priced...well, in the professional range, and last time we looked its player still had a few rough edges. But it's worth what they're asking, and even in the beta version we reviewed, the warts in the playback engine weren't devastating in the grand scheme of things. You'd have to say this is one of the more significant products to come out in the past few years.

Another thing about sampling that wasn't as true a year ago: there really aren't any glaring holes anymore. Sure there's always room for another great piano, a bass, a drum library, or even an orchestra (we're waiting with bated breath for Audio Impressions to come out). If you want a petrified dung zither from the hills of Andalusia, however, someone has sampled it.

We even got to check out a good sounding pedal steel library from Wavelore at the New York AES Convention in October. Pedal steel is one of those final frontier instruments that has tended to be sampled rather unsuccessfully in the past.

EastWest Fab Four



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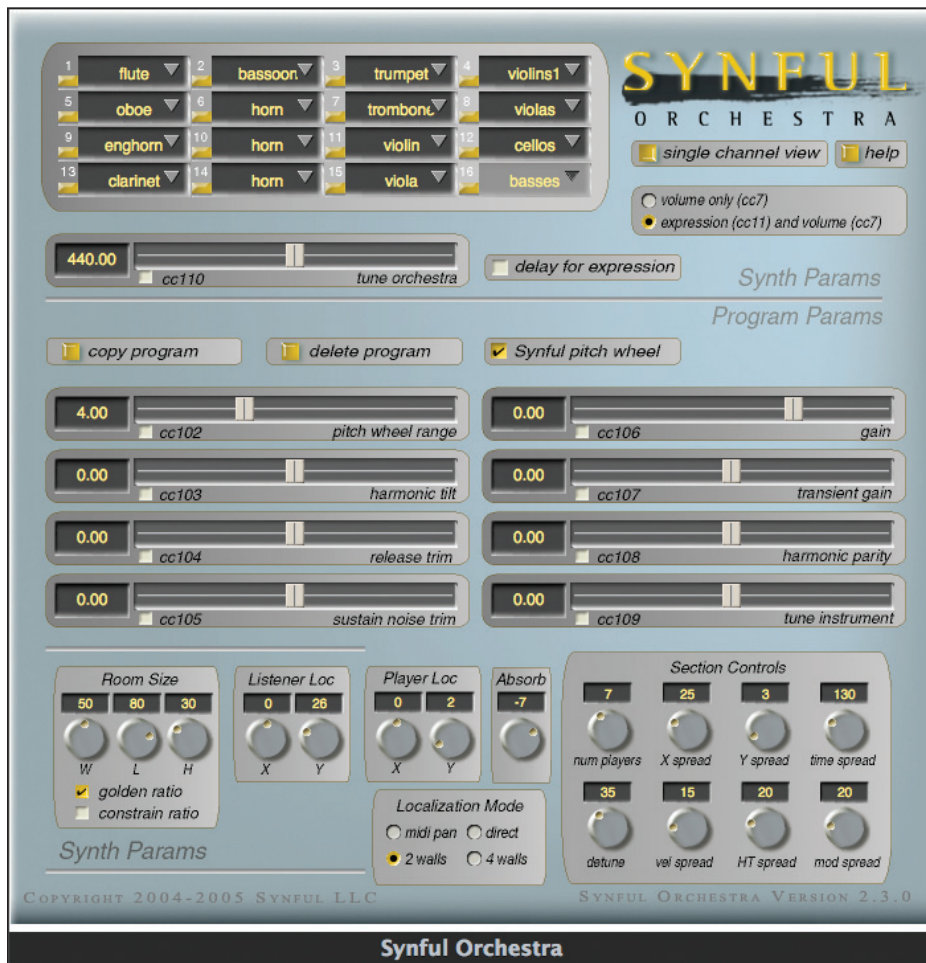


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Well, the problem is finally on the cusp of being solved. 64-bit systems—hardware, operating system, and applications—are finally converging.

Yes, we predicted that last year and the year before that, but now it's really happening. Apple Logic Pro 8's built-in EXS24 sampler can access as much RAM as you have installed in the computer today. EastWest's PLAY player is on the cusp of allowing the same thing. Vienna Symphonic Library just came out with their stand-alone host Vienna Ensemble; the PC version supports 64-bit XP and Vista, and the Mac version is going to be 64-bit soon.

TASCAM announced that the upcoming GigaStudio 4 will be 64-bit, and that should apply to their GVI plug-in version—licensed by a growing number of developers—as well. And of course the latest Mac OS X version 10.5 is now fully 64-bit, which has blown the door wide open.

Does that mean we'll be walking into our studios in the morning and only booting up one computer from here on out? No, it's still going to take more than one due to other issues. But there's a good chance a lot of us will be selling some of our computers on the used market.

You read it here first. **VI**

As a result of the holes being filled, the major developers are coming out with some more interesting and less obvious libraries. They're doing bread and butter instruments too, but for example look at the four new libraries from EastWest we reviewed in September: Fab Four, Gypsy, Voices of Passion, and Ministry of Rock. And Ilio is handling Vital Arts Plectrum (reviewed last issue), which is a totally new category of sampled instrument using mostly "found sounds."

So much for instruments. The big problem that's plagued sampling technology since GigaSampler (now GigaStudio) came along with sample-streaming and revolutionized the field is memory access. As anyone who's every used a large, modern sample library knows, even samples that stream off a hard drive need a pre-load buffer.

Given the current theoretical maximum 4GB of memory access per program in 32-bit computer systems, it takes no time at all to run out of memory (although the old "run several instances of the sampler" trick

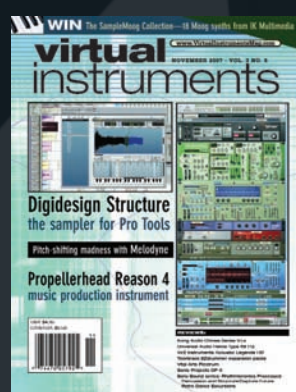
we've outlined in the past sure helps). That's the main reason it takes a few com-



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2007

The year that was

by Nick Batzdorf

Redmatica Keymap



Wallander WIVI

It used to be easy to look back at a year that passed and identify the important advances in music technology. Maybe the keyboards du jour became multitimbral and grew way more polyphony so you could compose completely on a sequencer rather than constantly dumping parts to tape. The new products changed the way we worked.

Now that we're well into the second big wave in the digital revolution, in which everything takes place on computer screens, it's a little more difficult to point directly at the most important products of the year. Other than sequencer updates, few technological advances change the way we work.

Nonetheless, we're going to try and do just that. Bear in mind that this is highly subjective, and people—especially developers of other products!—are wont to disagree.

If there's one new product that has the most potential to affect us all it would have to be Redmatica's Keymap (reviewed by Ashif "King Idiot" Hakik in the 7/07 issue). Keymap's most astonishing trick is to automate the process of mapping samples. It uses the Apple Logic EXS24 format, but since it doesn't use EXS filters, its programs can be converted to any format.

Feed Keymap a recording of someone playing scales on an instrument, and it separates the notes, detects the pitches, finds good loop points if you want, and builds a...keymap for you. It can do that with as many layers and round robin samples as you want, and it has a lot of other interesting algorithms for stretching the time and pitch, adjusting envelopes, and much more.

Now, if you're thinking that while these features may speed up the process, none of that sounds revolutionary, consider Ashif's closing comments: "Developers take

(CONTINUED ON PAGE 58)

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