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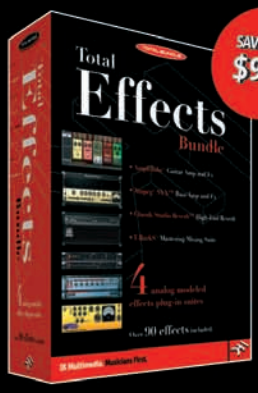

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virtual instruments
The world of softsynths and samplers

From the Editor

Welcome to the tenth issue of Virtual Instruments, and if you're reading this magazine at the NAMM Show, welcome to Anaheim.

Now, how many articles have you read about quieting your computers? At least 87 at last count, right?

I think there are two reasons for that: 1. computer noise drives us absolutely *nuts*; and 2. every article you read on the subject seems to leave you unsatisfied.

So I'm happy to present the definitive article on the subject from Paul Gilreath, an article that is very satisfying. He's done the research and put together a lot of useful information so that you can go out and assemble or have assembled just the right combination of components. That's for PCs, of course; the latest Macs are already quiet (except when they overhead and the fans work overtime).

This issue we also have a Very Deep Clinic on Apple Logic Pro by Orren Merton, who gives us a lot of commonsense tips. By accident it seems we have a slight Logic overbalance in this issue; even though Logic is a very popular program, we don't intend to focus only on it. By next issue the pendulum should swing back to the middle.

Speaking of next issue, we've been getting a lot of requests from new subscribers for back issues. Yes, they are available for $5 each + $5 shipping/handling for the lot, regardless of how many you order (in the U.S.). The exception is the premier issue, which is $20 since there's only a handful left.

Truth be told, it's not uncommon for people to call and ask whether they can back-date their subscriptions to start from the first issue. Unfortunately it's not possible to send out 1-1/2 years' worth of magazines, for obvious reasons—although we do appreciate the sentiment.

However, PDF files of all our issues are available for every subscriber to download, and we have no plans to take them down. That includes subscribers to the paper version and overseas download-only subscribers. So if you become one of the latter, you are in essence back-dating your subscription to the very first issue.

In the meantime, we hope you enjoy this one.—NB VI

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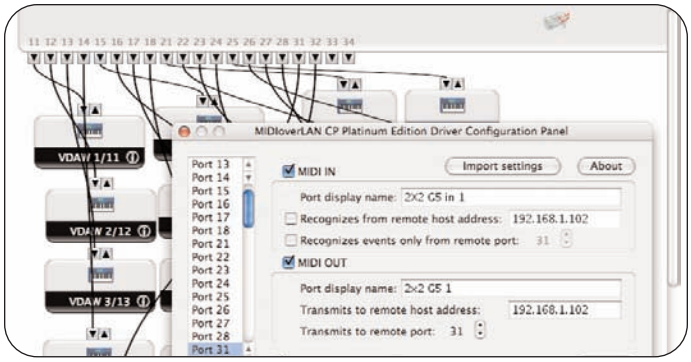

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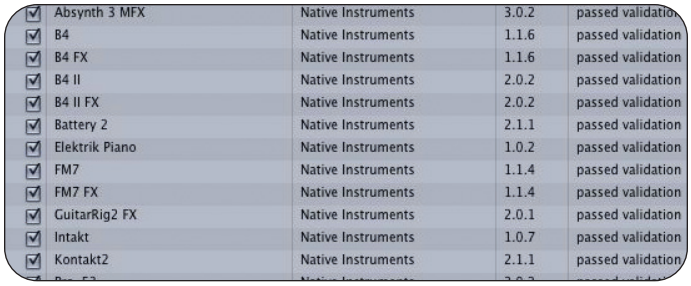

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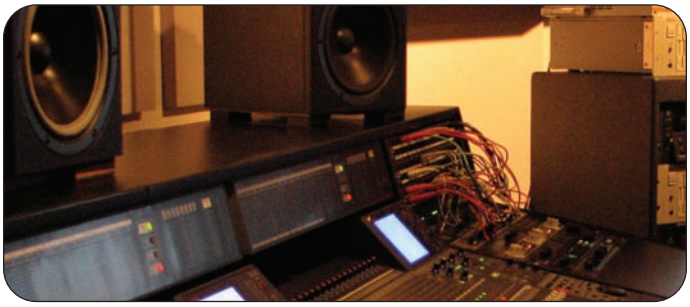

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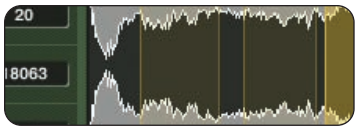

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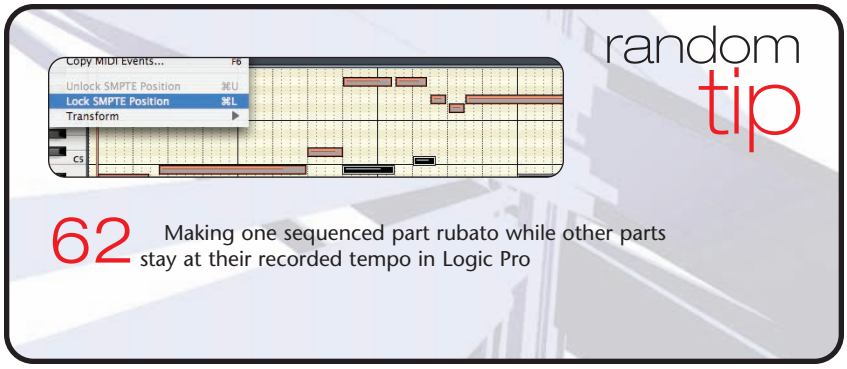

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Letters

write to:
nb@virtualinstrumentsmag.com

EWIs and harsh strings

I was on vacation this past summer in Cape Cod, Provincetown shopping with my wife, and luckily discovered my first issue of VI (the issue with Cubase SX3 reviewed). Since I had just set up a virtual studio at home I was quite pleased with the information I gained from reading that article. Now I subscribe to VI and will be tuned in for the duration. Thank you for your immense contribution and dedication to music and musicians. I have never written to any publication before, but I was driven to send out my heart felt thanks.

I do have two questions for you. The first was prompted by the latest article on the Akai EWI 4000s [in the Dec/Jan issue]! I am a saxophone player that grew up in Cleveland, Ohio and am a personal friend of Joe Lovano. We went to High School together in Euclid and have been friends for life. He is a world renowned jazz artist and so electronic music was never an interest for him, but his buddy Mike Brecker has played the EWI since it was invented. I will be calling my friends at Markertek tomorrow to order the new EWI.

My question concerns MIDI controller issues. I have the M-Audio ProKeys 88 keyboard MIDI connected to Cubase SX and use it to play all virtual instruments in the Kontakt2 and VST plug-ins by Steinberg and Native Instruments. How should I connect the EWI MIDI cable so the EWI a) plays the VST instruments in Cubase, b) play the EWI directly onto its own track in Cubase, c) combine the EWI internal sounds with the VSTs in Cubase?

The second question has to do with the Kompakt 2 string library of sounds. I listened to the Cleveland Orchestra alot in Severance Hall and got the sound of strings in my head. So when I hear the string sounds in most samplers including the Kompakt 2 library, I have a difficult time dealing with what I feel is a harshness to the attack and grainy quality of the sustained bowed passage articulations. Perhaps this question has been answered in your magazine already, but I missed it. But would you kindly direct me to a path of inquiry that would help me to alter these parameters?

Sincerely,
Frank Doblekar
via email

Thanks very much for the kind words, Frank. The response we've been getting from people like you is extremely gratifying. It's good to know we're on the stands in P-Town, that crazy place.

I think you're going to love the EWI—it really is a great instrument. And by the way, a couple of people pointed out that we managed to [smacking self in forehead—very hard] call it the 4000m instead of 4000s on the cover, despite several sets of eyes having seen it before we went to press. Our apologies; it's the rack module that goes with the previous EWI model 3020 that has the m—the 3020m.

How to connect the EWI to your computer. Well, your M-Audio controller connects to the computer by USB, but it has a built-in MIDI I/O. That's where you connect the EWI 4000s (not m!): MIDI out to Prokeys in and Prokeys out to MIDI in on the EWI. The MIDI I/O should show up in your computer as another MIDI port with 16 channels even though it's coming in over USB.

Then in Cubase you have two choices. One is to select All MIDI Inputs, and anything you play on your keyboard or EWI will automatically be merged and routed to the record-enabled tracks. That's the easiest way to do it, although at least some versions of Cubase on Windows can get a little sluggish with lots of inputs. If so, you can just set up MIDI tracks with their inputs set to "listen" to one or the other controller.

Then go to Preferences->Editing->Project and check Enable Record on Selected tracks. Set up one MIDI track routed to your EWI (i.e. to the Prokeys MIDI interface), then set up a second track routed to whatever virtual instrument you want. If you want to sequence one of the two, click on one track; or just shift/click on both tracks (or control/click them if they're not next to each other) to select them if you want to play both sounds together. That's it.

As to the harsh strings, there are a few things you can try. The most obvious one is just to grab an equalizer and lower the ouch frequencies (between 2-4kHz most likely). Things get brighter as they get closer, so you may prefer to hear less bow resin and move the strings farther away by making them less bright.

Linear phase equalizers tend to work best on strings, which can quickly sound very phasey when you use too much EQ; the Waves LinEQ from their Masters bundle is gorgeous on strings, for example. But you may have to wait until you mix due to the extra latency these plug-ins often have, because they do a lot of processing.

If you're using a standard EQ, try to use a relatively broad Q (bandwidth) to minimize the phase shift. And this is where you want to use the best EQ you have available, not the most efficient. Strings basically don't take EQ very well, so less is more.

Another thing to try is to move the sounds farther back by giving them more reverb in the wet/dry balance. You can then adjust the predelay to give them more or less definition by separating the bow attack from the reverb. Also, sometimes the reverb program itself can make strings—and other things—sound nasty if it's too bright and sparkly. Don't be afraid to roll off a lot of high end on the strings going to the reverb send; it's normal to roll off low-end to keep the reverb from getting too muddy, but that's not a solution to this problem.

Other things to try are compression (to soften the attacks) and whatever "tube warming" ju-ju you have around. I don't know that an amp simulator is the right sound, but there are all kinds of plug-ins that can sound good where you least expect them.

Finally, try layering different strings, especially solo strings, with the ones that sound too harsh, to get a warmer sound. The best sampled string parts almost always use layers.

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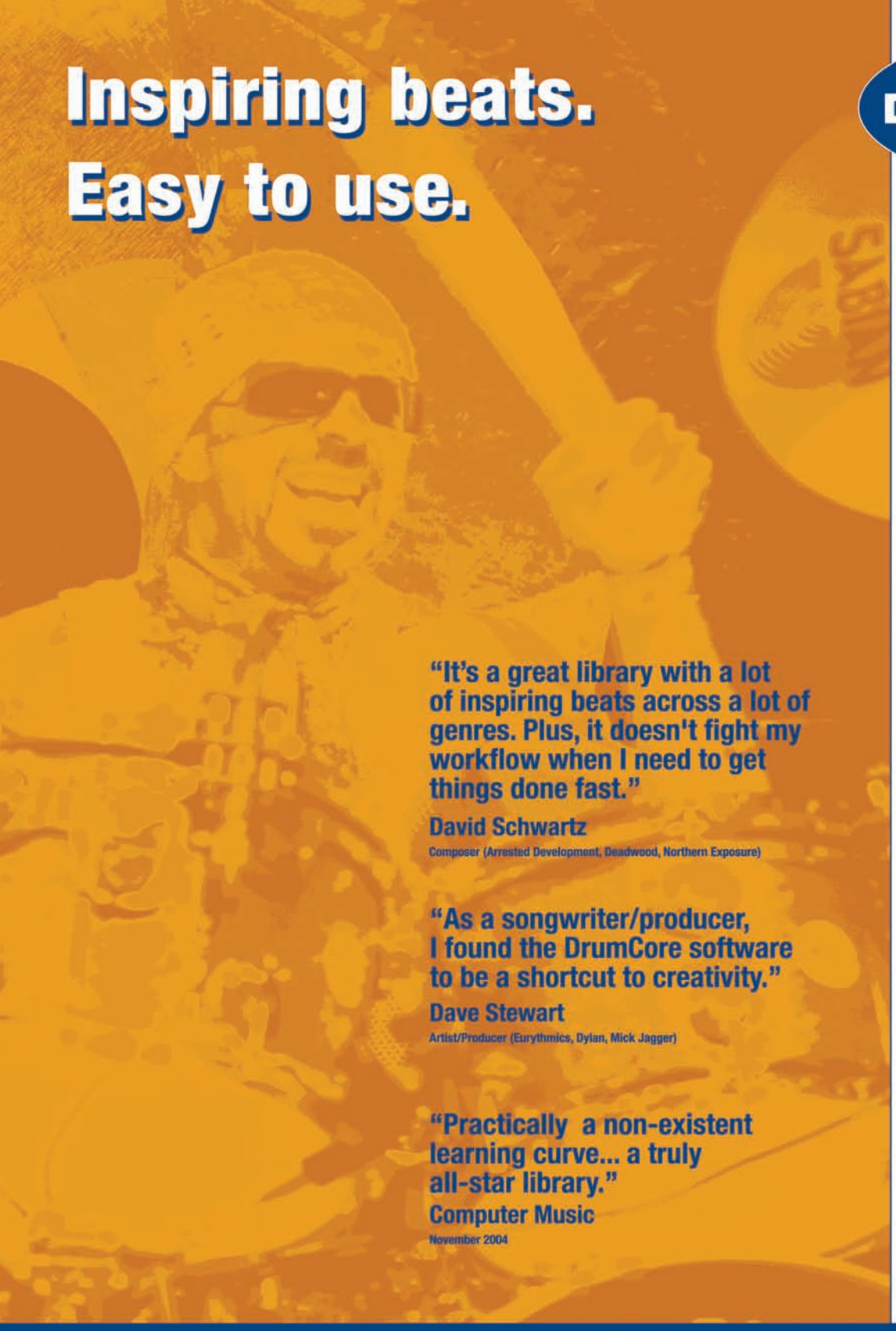

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Stand-alone V.I.s on Mac

Regarding last issue's "7GB loaded on one Mac" article, your readers might find it helpful to know how to set this up in Apple Logic Pro. You have to create a MultiInstrument (or just an Instrument) first.

Then there are two ways of receiving the audio. One is to create an Aux object with Soundflower as the input source, and the other—which is more convenient—is to use an Instrument object and insert an External plug-in. If you do the latter, you must select the Multi/Instrument you created as the MIDI destination, because the IAC busses don't appear on the drop-down.

Hope that helps.

Jay Asher
(Logic Certified Trainer)
Van Nuys, CA

It's worth illustrating what Jay is talking about here. While it's a good idea to launch Logic first, we'll start by showing the stand-alone instrument running outside it, in this case a stand-alone VSL Vienna Instruments player.

In Fig. 1 we have IAC (inter-application communication) Bus 1 assigned as the Vienna Instruments player's MIDI input and Soundflower as its audio output. We showed how to route MIDI to a stand-alone V.I. using an IAC MIDI bus in the article, but for those who missed it, IAC is simply a virtual MIDI interface that works just like a physical one. Also, we showed how to create an aggregate audio device, adding the Soundflower virtual audio interface (which you download from www.cycling74.com).

Jay's first way of setting up the instrument in Logic is shown in Fig. 2. Your Environment will look different from the one we created just for this example, of course, but the principle is that you use a stereo Aux track to receive the Vienna Instruments audio and an Instrument or MultiInstrument to send it MIDI. (The V.I. player receives MIDI on one channel, so we're just using a single-channel Instrument.)

A more convenient way of doing this is to use an Instrument object with an External plug-in inserted (Fig. 3), because this lets you treat the stand-alone instrument just like a plug-in instrument. But note that you must still create an Instrument (or MultiInstrument first) so it appears as an available selection.

Running stand-alone instruments outside the DAW can be very convenient for a number of reasons beyond accessing lots of memory. For example, let's say you want to use two different Synthogy Ivory Grand pianos for a 2-piano piece. If you load one Ivory Grand plug-in instance with the Italian Grand and then a Bösendorfer into a second instance, due to a memory-sharing feature the first one will get the Bösendorfer too.

The solution is to run the Italian Grand as an AU plug-in but then launch a stand-alone Bösendorfer outside the DAW. VI

Fig. 1

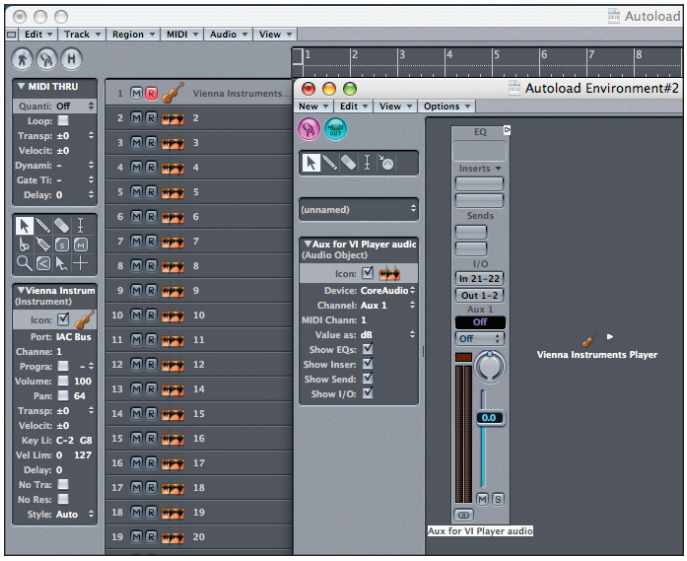

Fig. 2

Fig. 3

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Introductions, updates, news

DrumCore LuisPack 1

This new $79 Latin pop expansion pack for Submersible Music's DrumCore features "smoldering Latin grooves" from percussionist Luis Conte. The pack features layered GrooveSets so you could, for example, just use the conga track. There are both audio and MIDI file versions of all the grooves, and it pops right into the DrumCore search engine.

www.drumcore.com

Garritan Stradivari Solo Violin 2.0 for Intel Mac

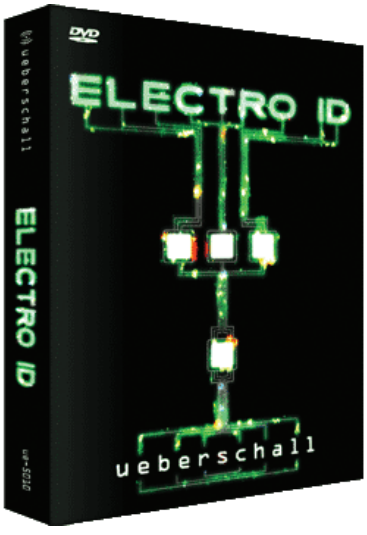
The new version of Garritan's $199 solo violin library is now shipping with Universal Binary support for Intel Macs and PCs. Version 2 now includes a "Lyrical" instrument as well as the previous classic one.

www.garritan.com

MOTU public beta hardware drivers for Windows Vista

All of MOTU's PCI, USB, and FireWire audio interfaces are ready to go (in beta format) with Windows Vista when it gets released late in January. The drivers, which also work in Windows XP with or without Service Pack 2, are available in both 32- and 64-bit native versions. MOTU has also released Vista drivers for their MIDI interfaces.

www.motu.com



Ueberschall Electro ID

Are you interested in being part of the German underground? Ueberschall, which uses a Melodyne engine called Elastik to allow its phrases to be manipulated, has a new library of Construction Kits produced by elektro artist Asem Shama called Electro ID ($119). This 1GB library includes drum loops, patterns, instrument loops, bass lines, effects, and single sounds.

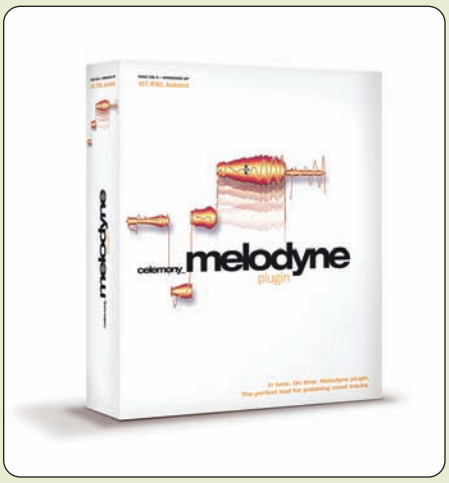
Electro ID is available in AU, VST, RTAS, and stand-alone formats.

www.ueberschall.com

Manytone ManyOne

ManyOne ($37.95) is a VST sample player with a wide range of sounds in four categories: electric pianos, ensembles, organs, and waveforms (including analog waves). It also has an FX rack with ten different units. Wusik and Dash soundsets show up in its browser.

www.manytone.com



Celemony Melodyne Plug-in

Until now this ubiquitous timing and pitch editing program has only been available as a stand-alone version, but now Celemony has introduced a $299 VST, AU, and RTAS plug-in. This version is designed specifically for vocals, and it allows you to work with both the pitch and formants.

Melodyne puts the notes on a piano roll grid, where they can be transposed, shifted, stretched/shrunk, harmonized—and generally treated pretty much like MIDI notes.

www.celemony.com

Zero-G Degrees of Abstract

"If you love the music of Warp Recordings, Planet Mu, and Ninja Tune, etc., we think you are going to love this sample library." That quote from the press release puts this 2GB, $99.95 library in context.

Degrees of Abstract comes in Acid-ready WAV files; Emagic EXS24, HALion, and Kontakt sampler instruments; Reason Refills; and Stylus RMX-compatible REX2 files. It includes full construction kits, breakbeats and drum loops, effects presets and loops, percussion and drum kit sounds, synth loops and pads, bass loops, guitar loops, and vocal loops.

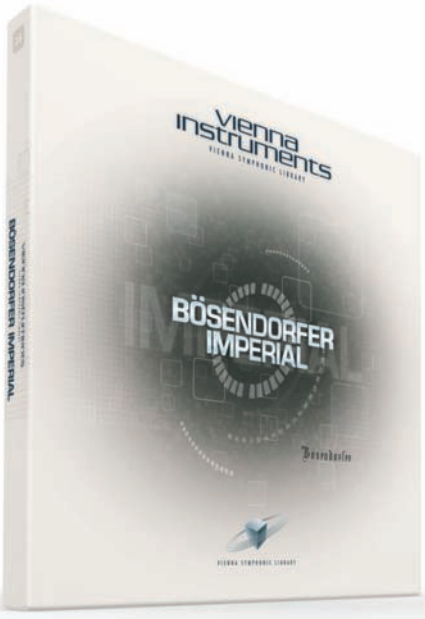
www.soundsonline.com

VSL Bösendorfer Imperial Piano

In addition to the Konzerthaus organ reviewed in this issue, Vienna Symphonic Library has released a Bösendorfer grand piano ($315). This 54GB library includes unlooped sustain samples in pedal-up and -down variations, tone repetitions (so you don't get repeated notes), sustain pedal resonances, multiple release samples, and key noises.

The piano was recorded from two mic positions, each with precisely 4,675 samples, from the pianist's and audience perspective.

www.vsl.co.at, www.llio.com



Native Instruments Massive

The name hints at the sound of NI's powerful new subtractive wavetable synth

Review by **Peter Dines**

Native Instruments Massive, $339

www.NativeInstruments.com

System requirements: Mac OSX 10.4.x, G4 1.4 GHz or Intel Core Duo 1.66 GHz, 768 MB RAM; Windows XP, Pentium or Athlon 1.4 GHz, 512MB RAM

Formats: Stand-alone, Audio Units, VST, DXi, RTAS.

Copy protection: online authorization using included utility to manage all Native Instruments auths

Have you ever wanted to hold down one note on a keyboard and produce a wavefront of damage that knocks out windows, makes birds fall from the skies, and sets off car alarms? I suspect that was one of the guiding principles in the design of Native Instruments' aptly named new subtractive wavetable synth, Massive.

Systems

Like all NI instruments, Massive is available for Windows and Mac (including Intel Macs) in all the standard formats, and it runs as a plug-in or a stand-alone program. This review was done on a 1.73GHz Pentium M laptop, which is just over the 1.4GHz minimum spec. Massive uses NI's new Service Center program, which handles authorizations automatically over the internet; you don't have to go to the Native Instruments site anymore.

The program was stable after I installed the update to version 1.01, and the only issue I know of doesn't affect all users: changing parameters in one instance in a host affects other instances. NI is aware of this and working on a solution.

Waves at the core

Massive's central sound engine is a set of three wavetable oscillators. This makes it, at least in theory, a spiritual descendant of instruments like the PPG and Microwave. Each oscillator setting is actually a number of waveshapes that you can morph between using a host of modulation sources. There's also one audio rate modulation oscillator for FM, wave position and ring modulation, and a noise generator.

Fig. 1: Like all the newer versions of NI instruments, Massive's browser uses their KoreSound format. Sounds are categorized by instrument type, sound generation type, timbre, etc.

Uh-oh: digital wavetable oscillators. Does this limit it to cold, harsh, digital sounds? Not at all. There are warm, analog sounding lead and bass presets, and it took me about five minutes of exploring to make a fat squeaky-squelchy tone from scratch using traditional saw waves and analog-modeling filters. Massive wasn't designed to emulate any particular analog synth, but it certainly shows a strong hand in that general area.

You might expect a wavetable synth to become harsh or aliased sounding when played at high pitches, but experimenting with basic oscillator shapes played high up showed this not to be the case with Massive. Some of the busier wavetables lose their character or sound a bit odd when you play them very high, of course; you'll get more of their intended flavor in the mid and lower registers. An intensity control can be mapped inversely to the keyscaling if you want a smoother sound in the high registers.

[*Native Instruments adds: "The fact that the wavetables are (almost) aliasing-free is due to a very specific design, as they are in fact multi-wavetables, using different tables in different tonal positions that have been created with a special resynthesis process."-NB*]

Massively versatile

This is by no means a one trick pony. The 82 wavetables and eleven filter types allow it to create a wide range of sounds. You can browse through the preset library by descriptive keywords using the built-in Kore-type sound browser interface (Kore is NI's controller/host/plug-in/database package, reviewed in the 8-9/06 issue). The 460 presets include evolving pads and 1-finger jams, experimental noisescapes, basses, leads, keys, physically modeled instruments, and bit-crushed digital shrieks. See Fig. 1, the brower.

But naturally you'd expect a tempting smorgasbord of presets from a NI synth product. Owners of other Native Instruments synths may well wonder what sets this one apart. Does it cover any of the same territory as Absynth or FM8?

Yes and no. While it can create its own flavor of the evolving soundscapes that Absynth excels at, and it can do basic FM and ring modulation sounds, Massive has its own sonic character and its own unique features—for example, its modulation routings.

The rings of Saturn

As shown in Fig. 2, the first thing you'll notice about Massive's interface is the visual representation of modulation routings. You drag and drop routings from the Envelope, LFO, Performer, and Stepper sources to ports under the controls, then drag up or down to choose how much the mod source affects its destination. Each control can be modulated by several sources, negatively or positively depending on whether you drag up or down on the port.

This creates multicolored "rings of Saturn" around the controls. Since they're color-coordinated as well as numbered, this gives you an instant visual reference to what's modulating what and how intensely. I personally find this to be a clean, intuitive design better suited to the computer screen than the 3D rendered patch cords you'll find in some programs with modular routing abilities.

This ease of creating and controlling mod routings encourages experimentation. I was surprised at how easily I developed several relatively sophisticated sounding patches. It's simple to route one LFO to the speed of another LFO, then route that to a wavetable or filter control to create a pleasantly unpredictable sonic instability.

Most of the controls don't have numeric readouts—hey, this is music, not trigonometry. That's a great idea, because you're forced to listen with your ears, not your eyes.

Performance potential

Massive's Macro Control section takes a bit of the fuss out of hands-on operation: map MIDI control surface knobs or faders to the macro controls, and this section relays the messages to other parts of the synth. Routings from here are assigned with the same drag and drop technique as with the envelopes and LFOs. Most of the presets have a few of their parameters controlled in this

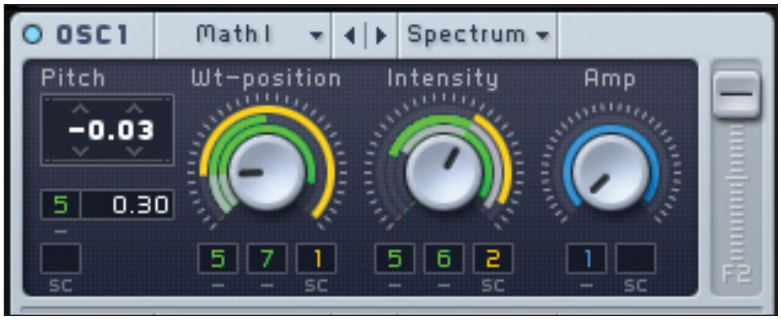


Fig. 2: Massive's modulation routings are indicated by colored rings that surround the controls. You drag and drop routings from the Envelope, LFO, Performer, and Stepper sources to the numbered ports under the controls, then drag up or down to choose how much the mod source affects its destination. Each control can be modulated by several sources, negatively or positively depending on whether you drag up or down on the port.

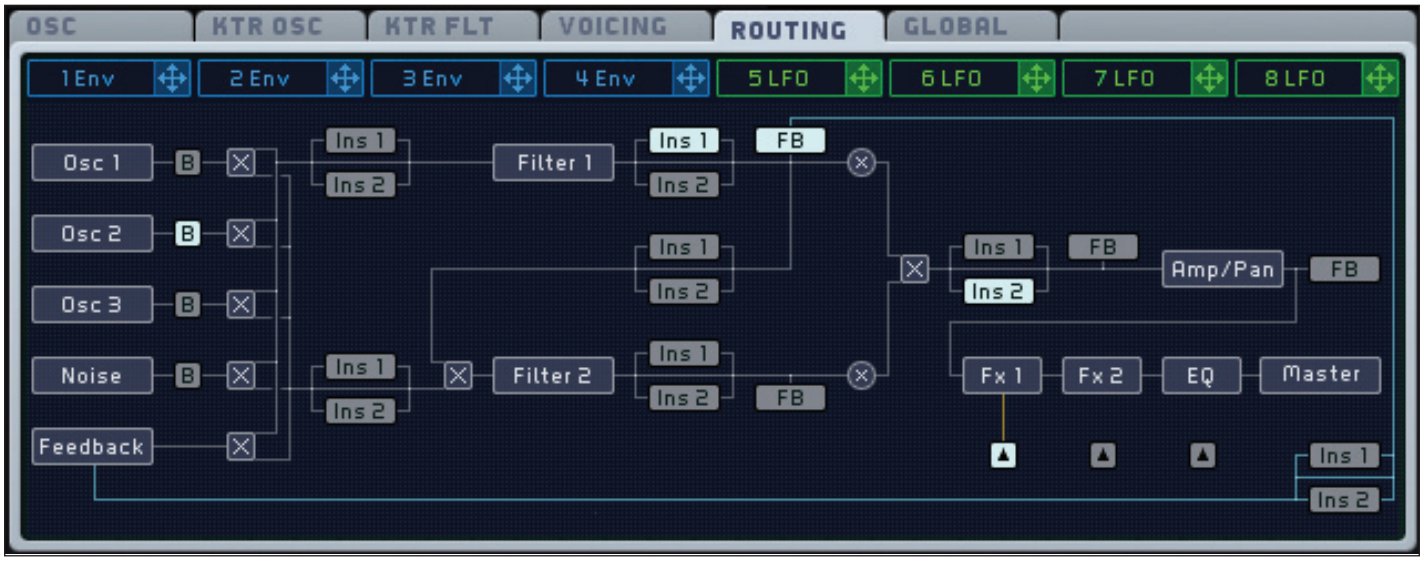


Fig. 3: The routing page. This is where you can set the insert points for the feedback loop and two insert effects, and where you choose an oscillator to bypass the filter section. A bit of feedback and a waveshaping insert effect can create strange and unpredictable results from an otherwise tame patch.

way to create interesting variations on the fly.

This is particularly apparent with some of the sequenced presets like "Cool Alley Cat" that use Performer modulation sources: sequenced-looping envelopes that can create percussive effects. Just hit a key and tweak the macro controls. Musical elements and effects drop in and out, timbres change, effect parameters alter—it feels more like remixing a track than adjusting a preset. The envelopes allow you to set a "hold" option so you don't have to keep a hand on the keyboard while you mess with the knobs and faders.

More options?!

But wait, there's more. See Fig. 3. Above the blue and green tabs for the modulation source pages is another set of tabs that include voicing options for legato and glide, keytracking and oscillator phase settings, and most interestingly, a routing page.

(CONTINUED ON PAGE 63)

www.samplelogic.com

Sample Logic's new release A.I.R. (Mac/Win, $299) is one of the first virtual instruments to incorporate Native Instruments Kontakt Player 2. A.I.R., which stands for Ambience, Impacts, and Rhythms, draws on a 6 GB sample library. This outstanding collection furnishes more than 300 original ambient instruments, 300 rhythmic loops, and 100 percussion hits and kits. Most instruments feature a choice of key ranges and transposition. The loops have adjustable tempos that automatically sync to your host application.

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ALL-IN-ONE COMPOSER'S TOOLKIT!

A.I.R. organizes its sounds by genre, timbre, and mood. Within each of the four main groups—Ambience, Impacts, Rhythms, and Combination Platters—are subcategories ranging from Blissful, Ethnic, and Sacred to Frightening, Metallic, and Piercing. Combination Platters fuse the three categories into compositional tool kits combining timbres, textures, and beats. A.I.R. is well suited to many styles of music, and its evocative atmospheres make it an excellent choice for soundtrack composition. Because it's built on Kontakt Player 2, it affords all the advantages that Kontakt has to offer, including full MIDI automation, 64 simultaneous parts, standalone operation, and compatibility with AU, DXi, RTAS, and VST plug-in formats.

KONTAKT 2 PLAYER

POWERED BY KONTAKT 2 SOFTWARE TECHNOLOGY FROM NI

AMBIENCE IMPACTS RHYTHMS

www.samplelogic.com

The Mac-Mac PC-Mac Rig

How to set up a multi-computer rig between two Macs or Windows and Mac.

by **Nick Batzdorf**

"An article for a VI issue that would be very valuable to me, and to many others as well, would be a step by step overview of running V.I.s on an external Mac and connecting it to a host computer. I know far less about this than I would like to; it is time consuming to hunt up the information; and there are many users, particularly in the Mac community, who are using second computers as V.I. hosts.

If such an article could address things like the network feature in Audio MIDI Setup in OSX, ways to bring a laptop/MOTU Traveler combination or similar rig into the main set-up, avoiding conflicts with dual installs of the same plug/V.I., etc, it would be very much appreciated. Any chance this might happen soon?" - Robert R. Martin, PhD; Victoria, Canada. Letters, 12/06 - 1/07

About a third of our subscribers are using multiple computers in their rigs, and many more of you are contemplating the move as you reach the limit of a single machine. That limit can be pretty far out there—last issue we covered running stand-alone programs outside your DAW on a Mac to load as much as 7GB of samples—but it only takes, say, a large modern streaming guitar or drum library (or a couple of very power-hungry softsynths or plug-ins) before one machine can start feeling cramped.

We've had a couple of articles that cover networked Windows set-ups in great detail, most recently Jesse White's eye-opening "Studio Farms" article in the 4-5/06 issue. Jesse described how to set up a single server containing all your samples and, with FX-Teleport from FX-Max.com, run audio, MIDI, and keyboard/video/mouse over a single gigabit ethernet cable connecting several PCs.

It's a true thing of beauty, and I encourage all subscribers to download the PDF with the back issue from our site for a refresher. And if you're not a subscriber, this would be a totally inappropriate place for a commercial message encouraging you to become one so that among the other benefits you can download that issue. We'll not do that.

In any case, we haven't really addressed dual-Mac or Mac-PC set-ups in detail as Robert Martin requests. This is that article.

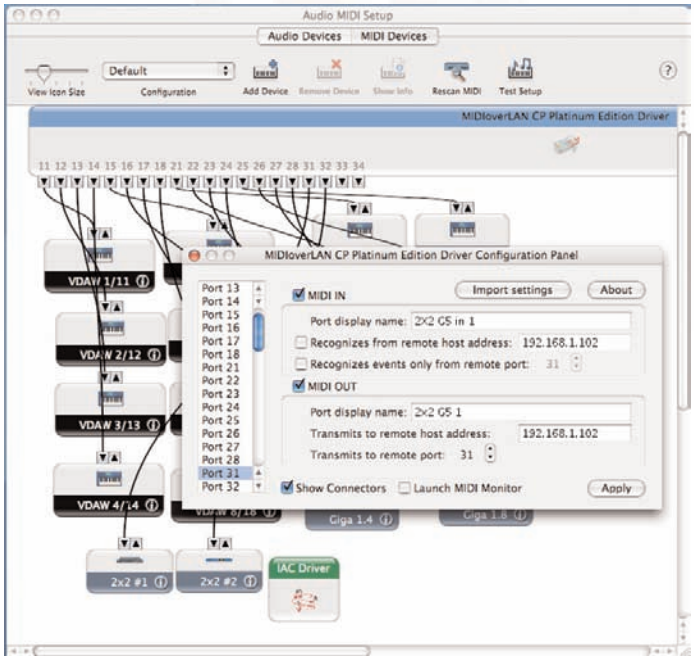


Fig. 1: Music Labs' MIDI Over LAN set-up panel, here dragged over an Audio MIDI Setup screen showing that it works just like a hardware MIDI interface—except that it sends MIDI over ethernet. The remote computers (in this case two PCs and a second Mac G5) are connected just like external MIDI instruments. You install the software on the remote computers too, and it works essentially the same way on Mac and Windows.

White paper

(Get it? Homage to Jesse's article…)

Let's start with a dual-computer set-up consisting of a master computer running your DAW and a slave machine running V.I.s and/or plug-ins, either stand-alone or inside a host (possibly another DAW). Scaling the rig upwards by adding more machines should be self-explanatory.

The basic concept is simply for the slave computer to behave just like an external MIDI module. You trigger instruments running on it with MIDI from the host machine, and it sends out audio that comes back into the master, either directly or by way of a mixer if you're using one.

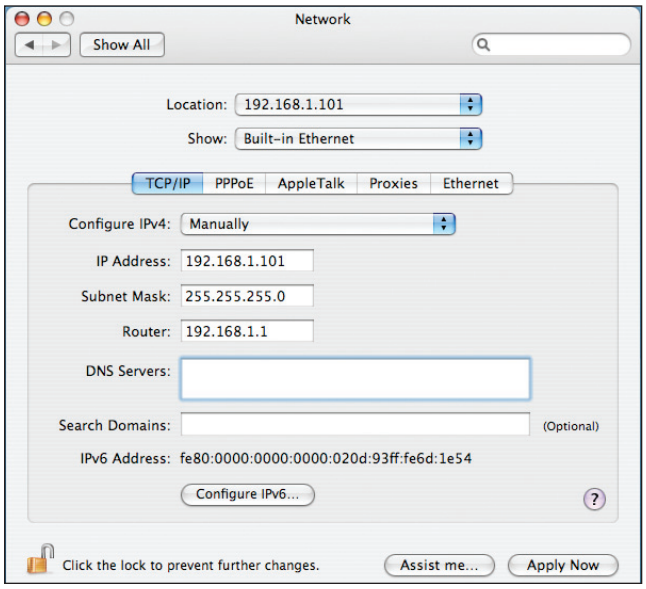


Fig. 2: Every machine on a network should be assigned a manual address. If they're assigned automatically using DHCP (the default), the numbers are liable to change every time you start up, and it gets annoying having to figure out why your slave machines aren't receiving MIDI.

There are two ways of hooking this up: using hardware or using ethernet (preferably gigabit ethernet). Most likely you'll be using a combination of the two.

Hardware makes the set-up very simple and reliable, but it also means you have to buy a MIDI interface and an audio interface for both machines. These days many audio interfaces have at least one MIDI port, which helps, but all things being equal most of us would rather spring for a Cat5e ethernet cable (recommended for best performance) than another box or two.

So far there are no Firewire or USB audio interfaces on the market that can connect simultaneously to two computers, because there has to be one bus master. Bridge chips that will allow this are supposed to be available this year, and products should soon follow, but rumor has it that this won't be an inexpensive solution. We'll be watching with keen interest.

The other thing you have to deal with is the monitor(s) and keyboard for the slave computer. If you have room for two sets of KVM (keyboard/video/mouse) you can just hook them up. To share the KVM, both inexpensive and expensive KVM (keyboard/video/mouse) switches are available, or you can send all three over ethernet—about which more later.

Fig. 3: Mac OS 10.4 includes Network MIDI, a MIDI-over-ethernet feature. Here it's shown working between two networked Macs, a dual 2.0 G5 and a dual 2.5 G5.

MIDI over ethernet

These days it really isn't necessary to buy MIDI interfaces for remote computers—you can send MIDI over ethernet. If you're running two Macs running OS X 10.4 or later, Network MIDI is built into the OS and doesn't cost anything; if you're running a Mac and a PC, Musiclab's MIDI Over LAN (www.musiclab.com) is the program you need, since it's the only known bi-platform MIDI-over-ethernet solution.

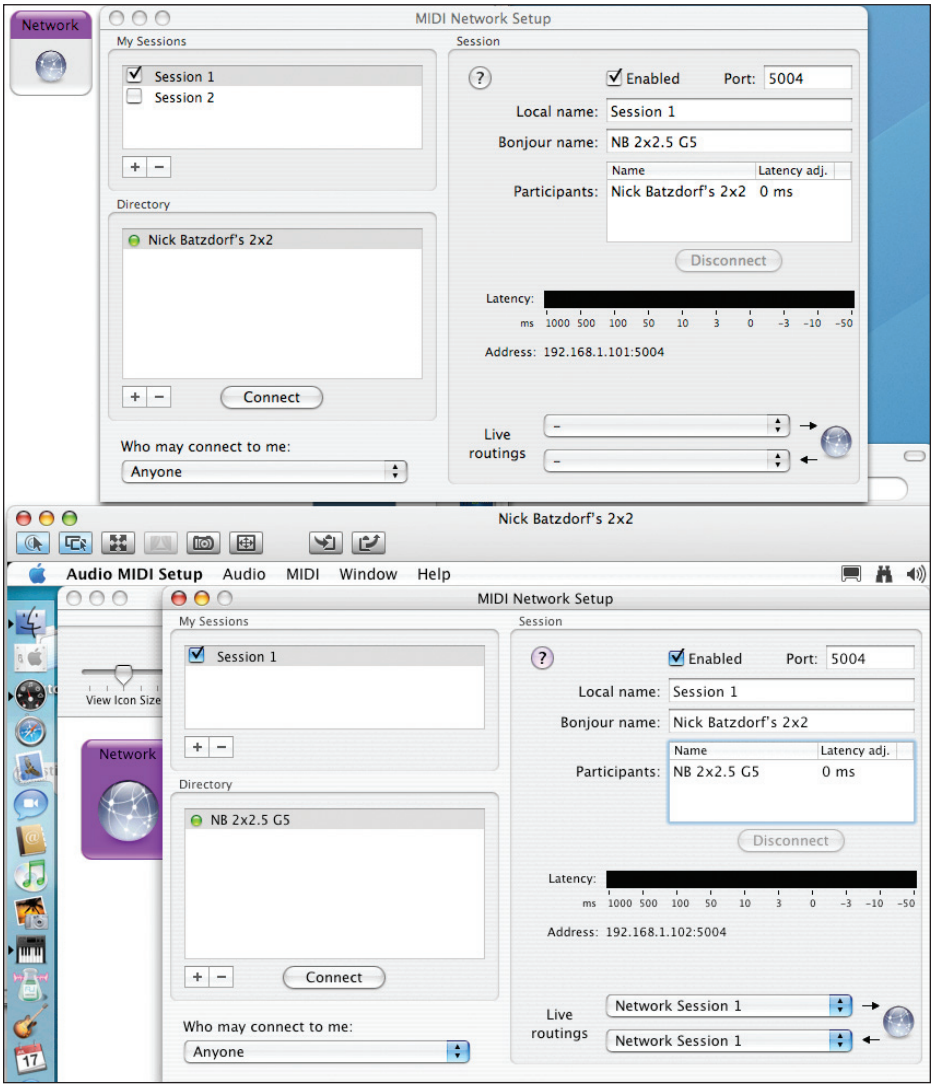
On the other hand if you don't need lots of 16-channel MIDI ports on a Windows slave, sometimes a simple MIDI interface can cost less than MIDI Over LAN.

Fig. 1 shows MOL's set-up panel dragged over an Audio MIDI Setup screen showing that it works just like a hardware MIDI interface, and the remote computers (in this case two PCs and a second Mac G5) are connected just like external MIDI instruments. You install the software on the remote machine too, and it works essentially the same way on Mac and Windows.

They have a newer version that doesn't use IP addresses and is even easier to set up, but in the version shown you simply type in the network address of the remote machine. In this case the slave is a dual 2.0GHz G5 at the network address 192.168.1.102.

It's important to assign fixed IP addresses to every machine on your network, as shown in Fig. 2. If you use DHCP, the default setting that assigns numbers automatically, the addresses can change every time you start up your computers. That can make you very angry.

Fig. 3 shows Network MIDI running on two G5s: a dual 2.5GHz one (2 x 2.5, the master) and a dual 2.0GHz (2 x 2.0, the slave). Due to the miracle of KVM-over-ethernet, the slave computer appears in a window on the monitor connected to the main machine, which is how we were able to generate this screen dump showing both computers simultaneously.



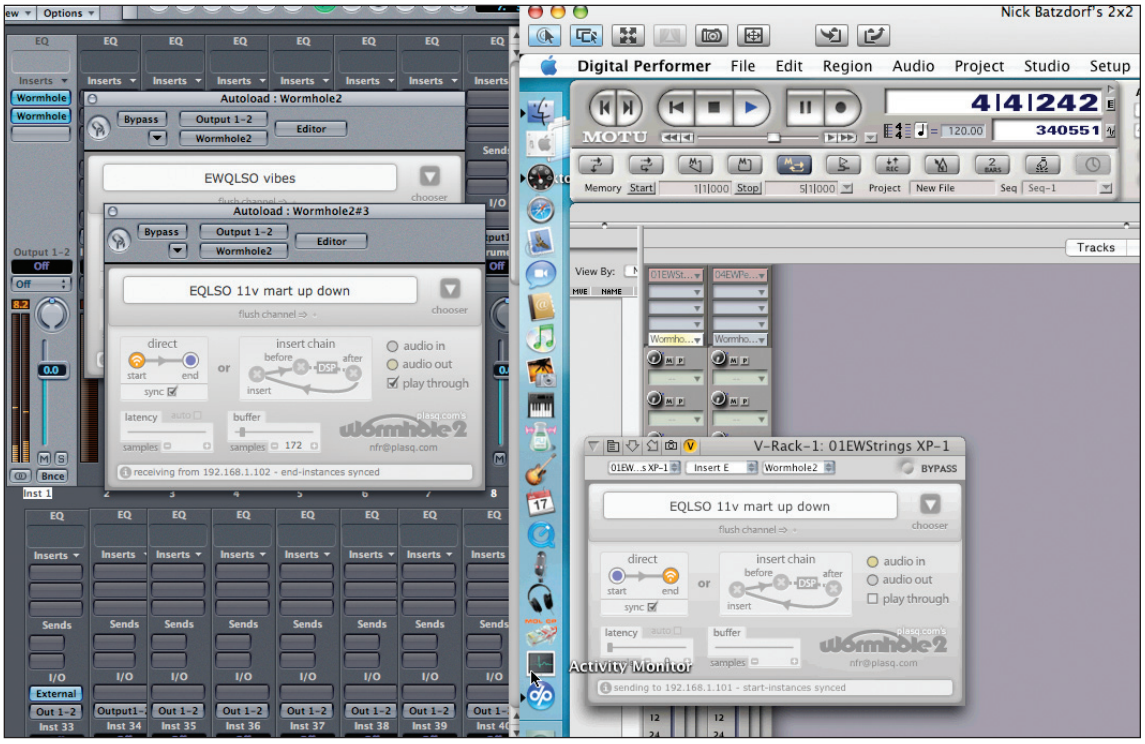


Fig. 4: No audio interface required? Plasq Wormhole 2 is sending two discrete stereo audio signals from MOTU Digital Performer (hosting two East West Quantum Leap Symphonic Orchestra instruments) to Apple Logic Pro on another machine.

Note that MIDI doesn't require gigabit ethernet on both machines, because it doesn't take up a huge amount of bandwidth.

Audio over ethernet

For a long time only Windows users could send audio over ethernet (using FX-Teleport, mentioned above); Mac users were out of luck. Mac OS X 10.4 has a pair of built-in audio-over-ethernet plug-ins, AUNetsSend and AUNetrReceive, but the latency with them is too large to be playable. We've also had issues with the latency drifting due to the two machines being out of sync using AUNetSend/Receive.

However, I was able to get a $50 program called Plasq Wormhole 2 working pretty well between two Macs, and the latency is perfectly playable. See Fig. 4, which shows two stereo instances sending audio from MOTU Digital Performer on the slave G5 going into two instances in Apple Logic Pro on the master. (Note the very faint Audio Out and Audio In indicators lighting up on Wormhole 2.)

A full review of Wormhole 2 will require more time working with the utility, but my preliminary findings are that while it's a little more fussy than one would hope for, it really does work—between two Macs. I did find myself tweaking buffers to avoid clicks and pops, inserting and reinserting plug-ins, and generally fooling around a fair amount; and so far my first attempts to get it to send audio from a Windows XP slave to the master G5 have been unsuccessful. There's a good chance that the fooling around will diminish once I figure out the quirks, though, and I have no doubt that it does eventually work between Windows and Mac.

It's important to stress that these are not official pronouncements against or for Wormhole 2; all we know so far is that a) the initial set-up isn't guaranteed to be straightforward, and b) I was able to get it working between the two Macs well enough to get some work done, and that's a big step forward. So far nobody we know of has been using audio-over-ethernet on Macs, at least not for musical applications that are serious enough to warrant using two computers.

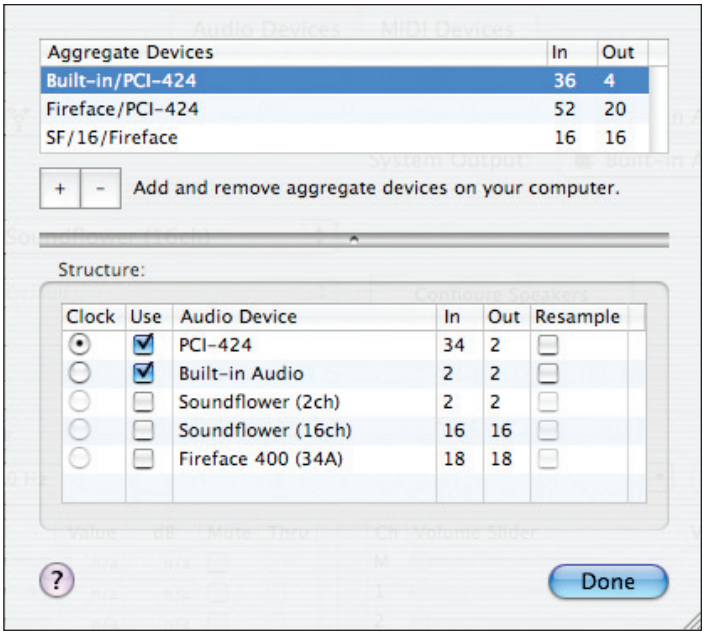


Fig. 5: Just go into Audio MIDI Setup's Aggregate Device editor to enable the built-in audio's CoreAudio drivers so they show up as extra I/Os in your DAW or host software. (You have to specify digital vs. the built-in analog connections in the Sound Control panel.)

Wormhole 2 is only designed to work between two computers—it can get out of sync if you're using more. However, it's possible that you can daisy-chain the built-in TOSlink optical digital I/Os between multiple Macs and use that to keep Wormhole in sync between machines.

That's an area ripe with intrigue, and one that spills the beans over our next point.

Built-in audio

Every recent Mac has built-in 2-channel digital audio interface that passes 24-bit 44.1 or 48kHz signals perfectly well. The half empty way of saying the same thing is that the digital I/O in recent Macs only carries two channels in each direction, despite appearances of it being an 8-channel ADAT lightpipe (on some machines—Mac Minis use different connectors).

If you connect a TOSlink cable between a slave and the master, you have a built-in digital interface that's at least good enough for monitoring. Depending on how you're using your slave machines, the 2-channel limitation can slow you down when you're mixing, but on the other hand the price is certainly right. If you need to effect more than two individual channels, you'll have to record two channels at a time, or else you can bounce files, transfer them from the slave to the master over the network, and import them into the cue you're working on.

To enable the Mac's built-in digital audio I/O, simply go into Audio MIDI Setup's Aggregate Devices editor and create a new device with it and your standard audio interface(s) as shown in Fig. 5. Your DAW will see one combined interface.

Digital sync

No step-by-step article would be complete if we didn't mention that any time you transfer digital audio in real time between two devices—two computers in this case—the two have to be referencing the same digital clock. There are a few ways off setting that up.

The easiest way is to connect digital out of an audio interface on the slave (either built-in or one you've added) to digital in on the master, then set the master on external sync (aka digital sync). It will lock to the clock embedded in the digital datastream.

That's not the best way of doing it, however, especially if you record audio onto the master machine. The reason is that analog-to-digital converters generally sound better when they're running under their own clock. There are exceptions, but that's the golden rule of thumb—subtle as it may be.

So it's better to run a digital connection from the master and have the slave be the one on external sync. Better yet, run a word clock connection from the master to the slave if it's available.

It's also not a great idea to use the clock embedded in an optical cable for sync. Always try to run a separate wired connection to use for sync when you're using optical connections to carry audio. It's not that the optical sync flat out won't work, it's that especially over longer runs it's notoriously jittery. Jitter is a word for very slight fluctuations in the timing that causes the sound not to be as good as it could be.

KVM-over-ethernet

As intimated earlier, you can have the slave computer appear in a window on the master very easily. KVM-over-ethernet—more specifically V-over-ethernet (the picture)—is nowhere near as snappy as a direct connection. But it's absolutely fine for loading V.I.s and other light fare. I personally find this much more convenient than using a KVM switch, among other reasons because having the remote machine in a window means that you don't lose keyboard and mouse control over the master while you're KVM-ed over to the slave.

If you're using Windows XP, this is a built-in feature that you access in the System control panel (see Fig. 6). There's a free Mac client available at www.Mactopia.com, and this system works beautifully.

If your slave has XP Home or it's a Mac, you'll need different software. There are commercial alternatives, but if you do a search for VNC on the internet you'll find many free utilities that will work. I've used Real VNC and Chicken of the VNC with good luck, but there are lots of them. Just be aware that the slave computer runs the server (i.e. it broadcasts the video) and the master runs the client.

Another alternative is Apple Remote Desktop, which has a lot of network administration features and is therefore fairly expensive ($300), but like Windows Remote Desktop it's considerably faster than VNC. Apple Remote Desktop allows you to control multiple Macs in a network, in fact it will control Windows machines running VNC servers as well (at VNC speeds, unfortunately).

If you prefer to use a separate monitor for the slave but share the K and M, a free utility called Synergy lets you move the mouse between monitors as if you were using a dual-monitor set-up on one machine. It isn't sluggish at all.

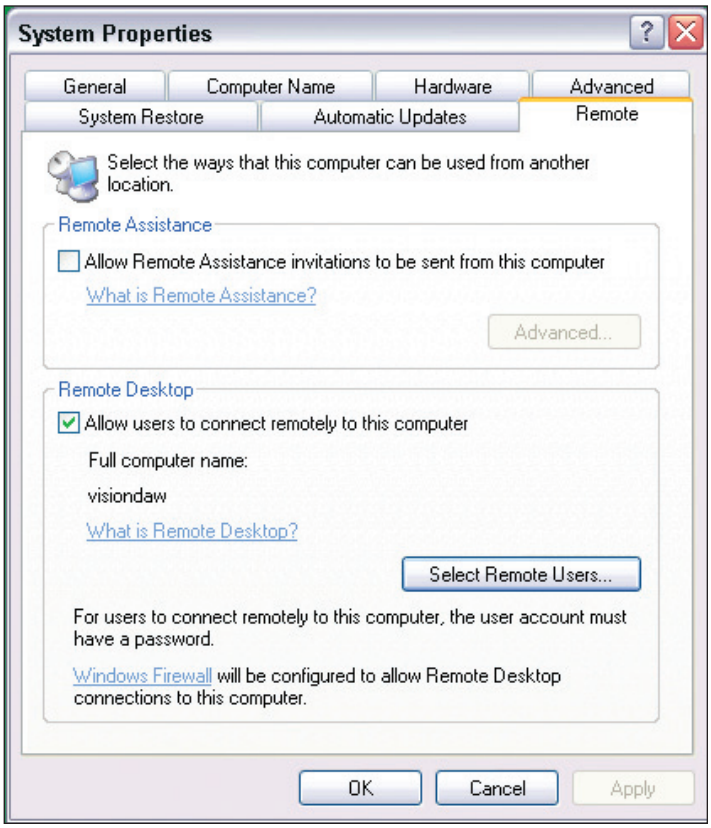


Fig. 6: Remote Desktop, which lets you control this machine over ethernet using the keyboard/video/mouse connected to another machine, is built into Windows XP (but not Home). A free Mac utility is available from www.Mactopia.com.

Due to the miracle of KVM-over-ethernet, the slave computer appears in a window on the monitor connected to the main machine, which is how we were able to generate this screen dump showing both computers simultaneously.

Dual installs

Robert's final question about avoiding conflicts with dual installs doesn't have a ready answer. That is, there is no *conflict* per se—any V.I. or plug-in with a license that lets you install it on two machines is fine with your having them networked.

But if you're using, say, a dongle-protected V.I. on your master machine, you can't also run it on the slave. Given that so many of us use multiple-computer rigs—and that multiple-computer rigs are absolutely necessary to use a lot of dongle-protected libraries properly—it would be great if dongle companies like Syncrosoft and iLok offered "sub-dongles" for slaves that would work if you have the "master dongle" somewhere on the same network.

That hasn't happened yet, however, and nobody has said it ever will. So let's all write to our Congressmen. And if you have questions like the ones Robert asked to warrant this article, by all means write to us. VI

V.I.s in Apple Logic Pro

Memorize these tips and you may yet become a *Power User.*

by **Orren Merton**

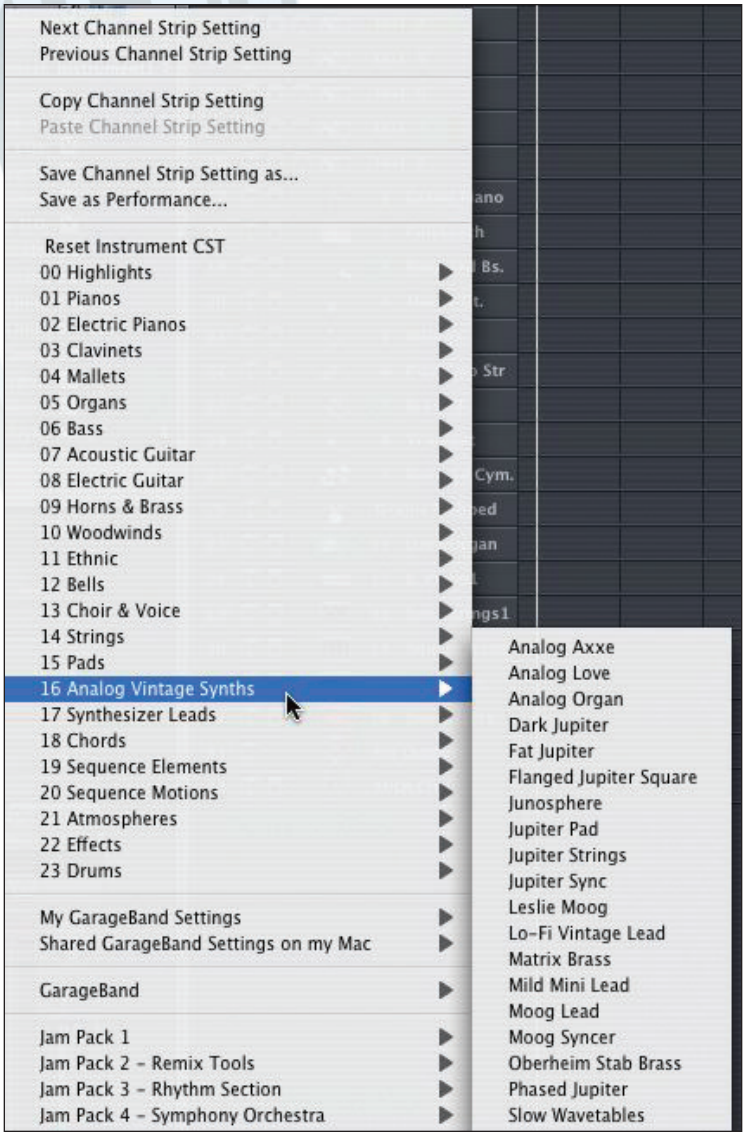


Fig. 1: Use Channel Strip settings to save all your virtual instrument patches, their samples, and processors, and recall them in a single click.

There's so much muscle under Apple Logic Pro's Apple-ized GUI that it's easy to miss some of its fun features or get bogged down in one working method. Sometimes a slight change might result in a faster and smoother experience. I'd like to share a few of the methods that help me save time when using V.I.s in Logic Pro.

Kitchen sink autoload

Nearly every experienced Logic user knows this, but it bears repeating here: if you keep the instruments and sample libraries you use regularly in your Autoload song, you will be ready to start creating with all your favorite instruments and patches immediately. And I don't just mean inserting a plug-in in an Instrument track and leaving it at its default setting—load it to your favorite preset or channel strip.

Logic Pro 7 allows you to have up to 128 Instrument tracks; you can fill as many as you want and have them bypassed so they don't take up CPU (although they do increase memory usage and initial Song load time). If the plug-ins you like to choose from are pre-inserted, you don't end up wasting the moment loading plug-ins and choosing samples when inspiration hits.

Setting the channel

Thanks to version 7's Channel Strip settings, you can now save presets that include every plug-in, individual preset, sample library, etc. that you like to combine. Don't be shy—save every combination that you use as a setting!

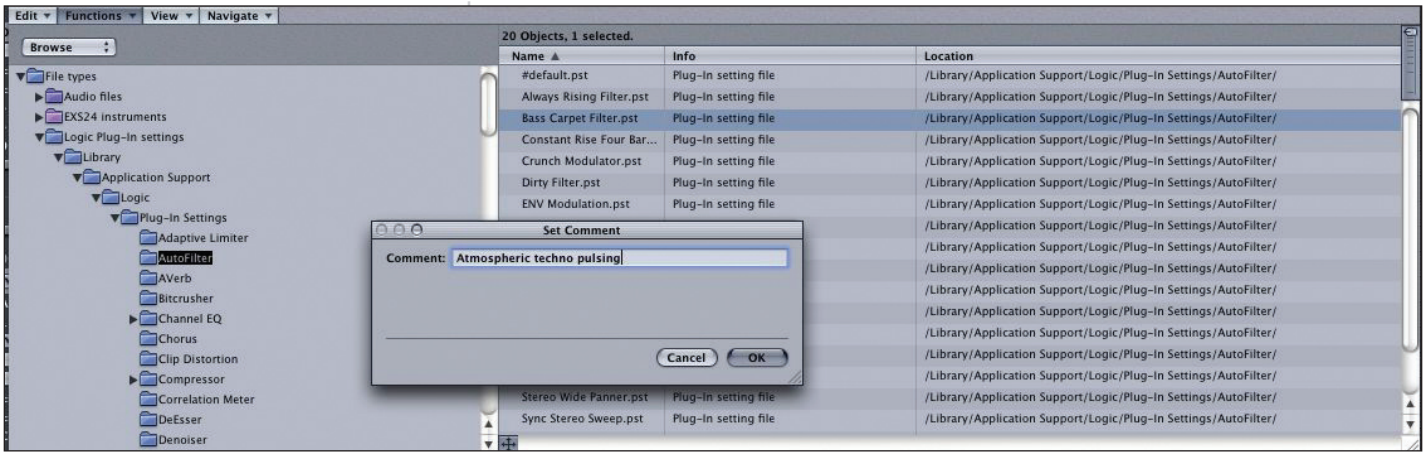


Fig. 2: Add comments to your settings in the Project Manager to be able to search your settings by keyword.

This way you can get entire the virtual instrument, complete with the right program, samples, and processors, available from the Insert menu (see Fig. 1). Along with a Kitchen Sink Autoload, copious amounts of Channel Strip settings are invaluable in getting you up and running quickly.

All the king's auxes

If you use Multi-Channel instruments in Logic, in order to access those additional output channel, you need to create additional Auxiliary (Aux) channels in the Environment, and then select the various outputs of your Multi-Channel instrument as the inputs for the Aux track. If you already have all the Instrument and Aux channels you need set up in your Autoload, this isn't a problem.

But if you tend to switch out and/or use different Multi-Channel instruments in the middle of working, stopping to create the necessary Aux tracks can be a drag. One trick is to create lots of Aux tracks in your Autoload—far more than the inserted Instruments use. If you decide to insert new Multi-Channel instruments, you have enough pre-created Auxes that you can just select the Auxes and change their input to the new Multi-Channel instrument.

Search your settings, Luke

Wouldn't it be nice if Logic Pro allowed you to search all your channel strips and preset settings by name or keyword instantly? Well, you *can* search your settings and even use your own keywords using Logic Pro's Project Manager if you're willing to do a bit of preparation.

The first step is to scan your settings folders using Logic Pro's Project Manager. Once scanned, the Project Manager will be a 1-stop database of all your settings. You can even set comments (see Fig. 2) for each setting. This way you can use the Project Manager's Find function to search through all your Logic settings to find those sounds that match your criteria.

Thanks to version 7's Channel Strip settings, you can now save presets that include every plug-in, individual preset, sample library, etc.

Get multitimbral wit it

Logic is not the most facile application with multitimbral virtual instruments, but it does offer you a few ways to deal with them. The first method is to create numerous tracks on the Arrange that point to the same Audio Instrument channel, then assign each individual Instrument track to receive MIDI on different channels. This lets you access the virtual instrument plug-in from each multitimbral track.

You can also cable a Multi-Instrument object in the Environment to the Instrument channel, and then on the Arrange window assign the various tracks of the Multi-Instrument to Arrange tracks. If you choose to do this you won't be able to access the Instrument channel itself in the Arrange, but you also won't have the same Audio Instrument showing up on multiple Arrange tracks, which you might find confusing.

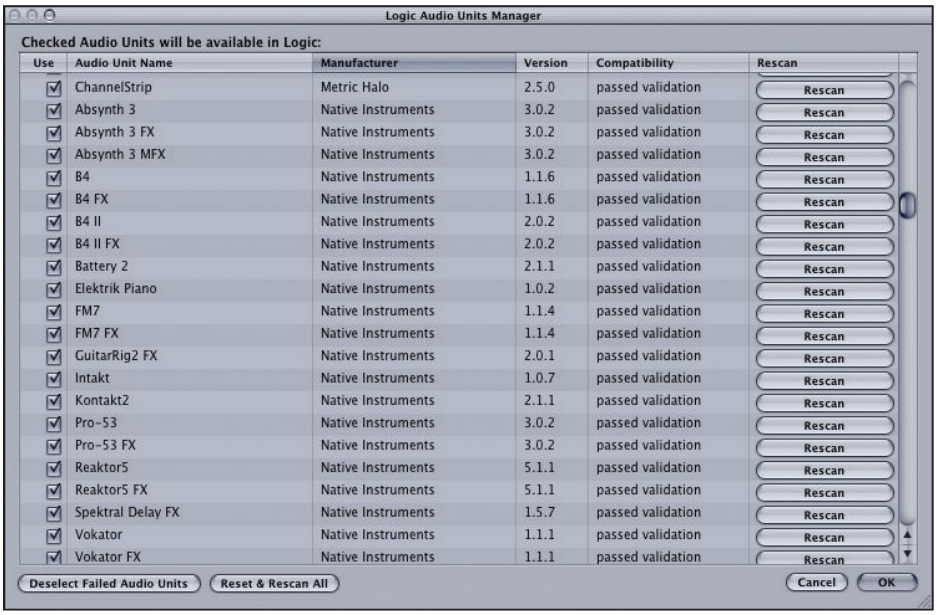


Fig. 3: When you find yourself only using a few plug-ins from a huge bundle, you can decrease clutter and save yourself from temptation by using the Logic AU Manager to deactivate unused Audio Units.

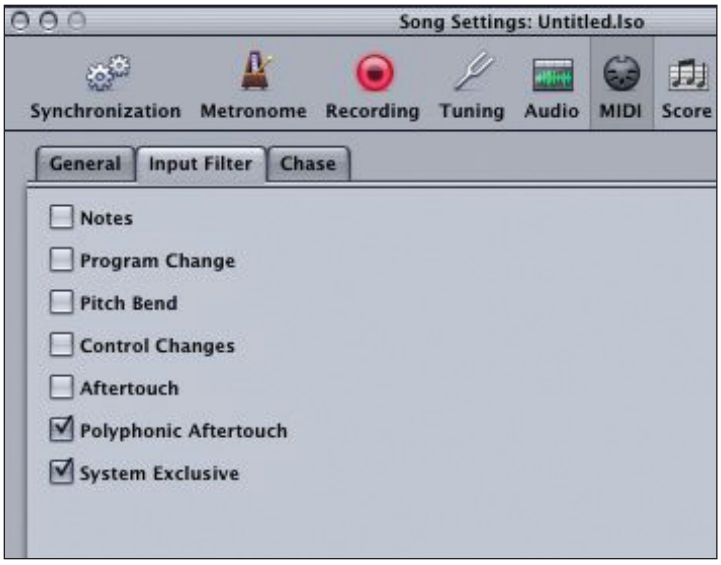


Fig. 4 : Logic's MIDI Input Filter song setting lets you filter out MIDI messages that you don't want recorded in your MIDI region.

Middle management

Do you find yourself with an armload of Audio Units plug-ins you never use? While they don't hurt anything just sitting in your list of plug-ins, if you're like me, you're always tempted to go searching through every plug-in "just in case" one of them has the perfect sound. Depending on how many plug-ins you have, this can be a major time sink (see Fig 3).

This is especially true with large bundles, such as Pluggo, that comes with over 20 virtual instruments (of which I only normally use three or four). Remember that you can use the Logic AU Manager to deactivate plug-ins so that they don't show up in the plug-in menu. This will reduce the clutter of your list of Audio Units, while retaining the ability to activate the plug-in if you decide later you want to use it.

Automation modulation

Often, the difference between a dull patch and an exciting patch is the sense of motion and animation one creates over another. Keep in mind that even with virtual synthesizers that don't offer a wide variety of built-in modulation options, you can use Logic's track automation to create a sense of movement by varying parameters over time.

If a synthesizer doesn't let you assign an LFO to modulate a parameter, for example, you can still automate it in Logic for a similar effect.

Cold filtered

If you find your controller keyboard is sending out too much MIDI data to the point that it's affecting performance, don't forget the MIDI Input Filter options to be found in File > Song Settings > MIDI > Input Filters (see Fig 4). You can also use this if you just want to send one particular type of data—for example you may want to record a pass of yourself just sending aftertouch data, and not notes. These filters can come in very handy.

Even with virtual synthesizers that don't offer a wide variety of built-in modulation options, you can use Logic's track automation to create a sense of movement by varying parameters over time.

Bringing the outside in

Among the list of Logic Pro 7's software instruments is the External Instrument plug-in, which lets you use a hardware synthesizer on an Audio Instrument track, just as you would a software synthesizer. You can also use External Instrument plug-ins to route stand-alone virtual instruments into the Logic mixer (see "Letters").

The External Instrument gives you a single track for both MIDI to and from your synthesizer, plus an audio input to bring your audio into Logic's mixer. One caveat though—you cannot send System Exclusive data to your hardware instrument using the External instrument, so if you send a lot of SysEx to your hardware synth, you may not be able to use this method. VI

Fig. 5: Insert an External Instrument plug-in on an Instrument track to route external hardware instruments—or stand-alone V.I.s running outside Logic—into the mixer.

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Silencing the Beast

A guide to making your studio quieter and preserving your sanity. Part 1: quiet computers.

This article is only important if you value your sanity, hearing, ability to hear what you're working on, and concentration. For those of you, even a single computer in the room can be annoying; and since a third of our subscribers use multiple computers in their rigs, the need to get the computer noise down is pretty serious.

by **Paul Gilreath**

A search on the web for "quiet computer" produces hundreds of thousands of hits, indicating that the problem is relevant not only to musicians but to anyone using a computer on a regular basis. That makes sense, because the constant noise that most computers produce can even cause hearing loss.

So how do you go about regaining solitude? First, make your computers as quiet as possible, and second, isolate them from your listening/composing/mixing position as much as possible.

In this article we'll look at how to diminish the computer noise. Next issue we'll discuss moving your systems to a remote location, as well as construction techniques to help soundproof the area.

Sources of noise

PC noise can mainly be attributed to three items: the power supply, the CPU cooler fan, and the hard drives. The first two items typically use fans for cooling, and these produce noise from the motor, from airflow and from vibrations.

Hard drives produce noise from the rotation of the platters inside as well as vibrations from the unit. Fans typically produce a "wwwwhishing" noise, while hard drives produce a "whining" noise as well as clicks.

And because most audio production computers have one drive for the system and least another one for the audio and library data,

the noise adds up. In addition, cases that use small fans can also contribute to noise, since the fans have to run faster to move the required amount of air.

Silencing the boxes

The most important challenge is to provide adequate cooling for the computer and its components when you quiet the machine. There are a number of commercially available solutions to help quiet a loud computer.

Because of his expertise in this area, I contacted Mark Nagata, President of VisionDAW, a company specializing in custom-built PCs for the audio industry, to get his perspective on the subject. VisionDAW has built systems for leading composers including David Newman, John Debney, James Newton Howard, Harry Gregson-Williams, Cirque du Soleil and a host of others.

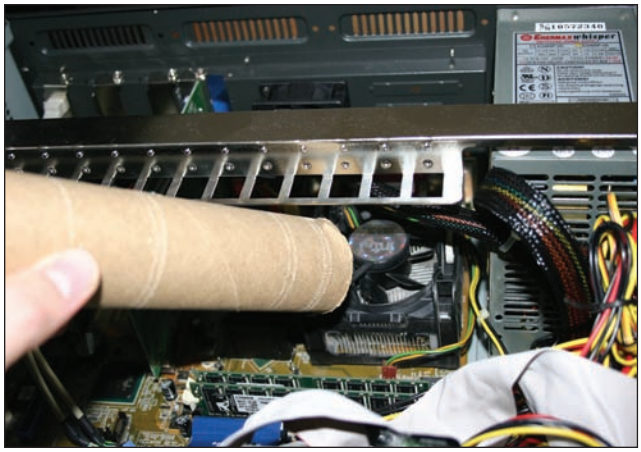


Fig 1. A paper towel core being used to find the noisiest components

(As a matter of disclosure, I also use seven VisionDAW systems in my studio. They are incredibly stable and very quiet.)

Mark replied, "Creating a quiet and stable system requires research into the thermal guidelines and thresholds of your hardware. This is the single most important fact in determining how quiet your system can be. Once you have the thermal specifications, you need to implement the best methods and products that will keep your system at a respectable sound level while upholding the thermal guidelines for your hardware. Heat is generated from every component in your PC, and it needs to be dissipated in one way or another."

For the do-it-yourselfer, Mark gives several suggestions on how to decrease the noise level of a PC:

- Use hardware that is very efficient and does not produce excessive amounts of heat (processors, motherboards, power supplies, etc.);

- Use a case that offers large diameter fan options for front and rear air flow. Generally, larger fans are quieter and move the required air necessary to keep the system chassis cool.

- Use processor heat sinks that utilize heat-pipe technology. Heatpipes work silently to transfer heat away from the processor.

- Use manual speed control case fans so you can adjust the chassis air flow.

- Cable your system as neatly as possible as to minimize air turbulence in the chassis.

Mark also advises that you check your system at peak load to determine if it is running within your hardware's thermal specifications. Running your system at the appropriate temperatures will help keep your PC running smoother and longer.

So how do you make your systems quieter? If you have a boisterous PC, you must first determine which component(s) is making the most noise. An easy way to accomplish this is by using a cardboard core of a paper towel roll (Fig. 1). Get close to the components, hold it up to your ear, and aim it at the various fans and drives. By doing this you can see which is the loudest and start there.

Changing fans is fairly easy. It can be more challenging to change power supplies, but it's certainly doable for anyone comfortable on the inside of a computer. Changing a CPU cooler is the most difficult, mainly because of the risks. If not done correctly, you can zap your CPU with static electricity or even burn it up due to poor installation techniques.

So when in doubt, get help or advice from a professional. Let's start with case fans.

Case fans

As a rule, you want the biggest fan that your case can accommodate. Large 120mm fans (Fig. 2) can move more air at lower speeds than smaller 80 or 90mm fans, so change out your fans to the largest size that your case can accommodate.

Luckily, 120mm fans are now the norm in most tower, 3U, and 4U systems. If the case includes a 120mm fan, odds are it is not the source of your noise. But listen carefully and if it making too much noise, consider changing it out.

Fig 2. Antec's TriCool, a 3-speed 120mm fan

To replace a case fan, you simply unplug it from the motherboard—the wires from the fan terminate into a connector that inserts into a socket on the motherboard. Unscrew it from the case, install a new fan (Fig. 3), and plug it into the motherboard (Fig. 4).

Fig 3. Typical fan installation in a case

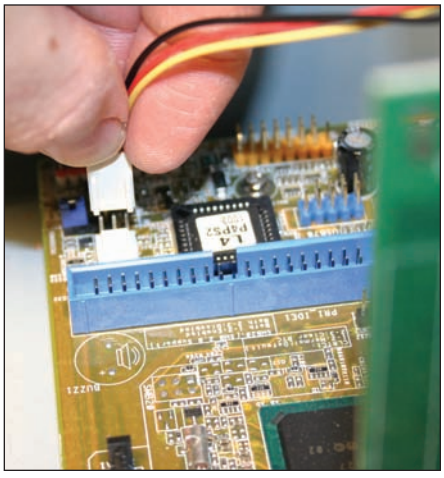


Fig 4. The modular plug found on a fan fits onto a motherboard's fan connector

If the fan is a smaller unit and you have room for a 120mm fan, you might have to get a mounting bracket to accommodate the new size or you can drill screw holes in the case. Be extra careful of extra metal scraps during cleanup.

Not all fans are equal, so when choosing your new fan, choose a quiet one. Antec, Zalman, Nexus, and Papst are good choices for fan components. Their websites include fan specs that show fan noise vs. airflow. Pick a fan that provides the most airflow within a range of noise that you can tolerate.

And as Mark suggests, install a fan with at least two speeds and preferably three. This

will allow you to modify the fan speed as needed. In a rack, for example, the upper system receives all of the heat that rises from the systems below it, and consequently you might need to crank up the case fan in that unit to provide adequate thermal protection.

Typically a quiet fan will produce 24-30 dB of noise. Most of these fans run about $12-20, so the investment is minimal.

And if your case includes a front intake fan, consider disabling it. Removing a fan in the front of the case will decrease your noise. Typically these fans don't do much to cool the case.

Fans that blow hot air from the case are more effective than fans that pull air into the case. AMD corporation research has shown that front fans do not add measurably to the cooling of a computer case and in some situations actually decrease cooling by re-circulating hot case air.

Power supply

Unfortunately, the power supplies that come in most stock cases are often loud. Quiet power supplies are available in the 20dB range.

Cathy Schoenborn of endpcnoise.com suggests using power supplies that include a bottom-mounted ultra silent fan, wire grille, hefty heatsinks, and silence minded circuitry. "A bottom mounted fan, which pulls air out of your case, is the best for computer case airflow, is the most efficient design, and isolates sound away from you the best," suggests Cathy.

In order to decrease the noise from a loud power supply, you have to change it. Changing out a PSU is a relatively easy thing to do, though harder than the case fan substitution.

Changing a supply involves removing the supply's 24-pin power cable assembly from the motherboard (Fig. 5), unplugging the 4-pin connectors from the drives (Fig. 6), and then unscrewing and removing the supply from the case.

To reinstall the new PSU, fasten it to the case, plug the 4-pin connectors into the drives, and plug the 24-pin cable assembly to the motherboard. Quiet PSUs typically cost $100-$200.

CPU fans

The CPU fans are usually small and are often very loud. There are plenty of low noise options available.

High quality construction and efficiency is a must in CPU coolers, so this is not a place to skimp. Most high-end CPU coolers employ copper and aluminum heat sync technology to move the heat away from the CPU and a large quiet fan to dissipate the heat from the copper tubing (Fig. 7).

Installation of these devices is specific to the product. Substituting the cooling mechanism on a CPU is sensitive, and is perhaps a process best left to a professional if you are at all hesitant.

For those who want to try, follow scrupulous grounding protocol so that you don't introduce static electricity into the CPU and/or motherboard. And proper use of thermal compound, which transfers heat from the CPU to the cooler, is a must.

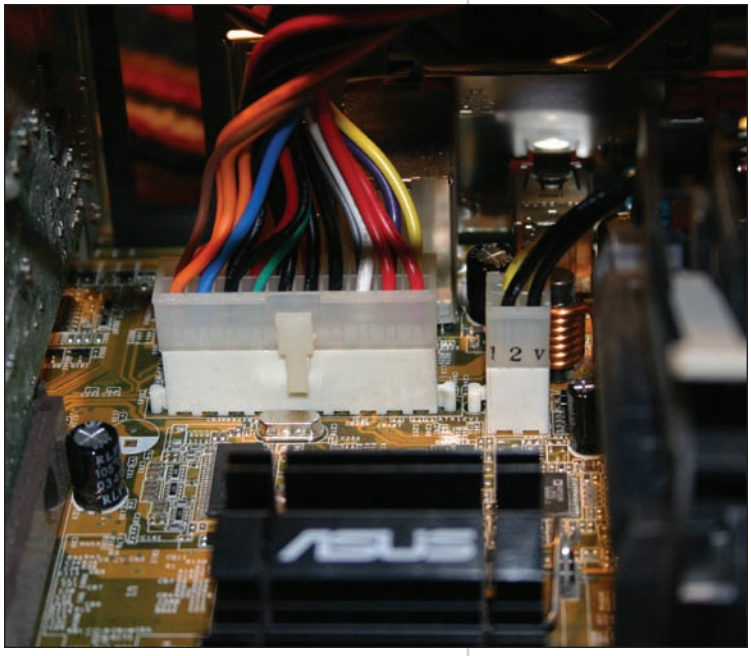
Whether you do it yourself or have a professional help you, substituting a small CPU fan with a larger cooler can make a big difference in the noise level of your system. Costs for CPU coolers run the gamut from $30-$125.

For the more adventuresome, there are liquid cooled products that remove heat using liquid coolant. One solution that gamers have been using is CoolIT Systems' Freezone CPU Cooler (Fig. 8). This is a self-contained product that comes already plumbed and ready to install.

The system consists of a special liquid heat sink that mounts on the CPU. This sink is attached to tubes of chilled liquid coolant, which are connected to a box that mounts in the back of the case in lieu of a regular case fan. The system provides incredible cooling

Fig 7. One of Zalman's most popular coolers, the CNPS9500LED

Fig 5. The modular plug from a PSU connected to the motherboard



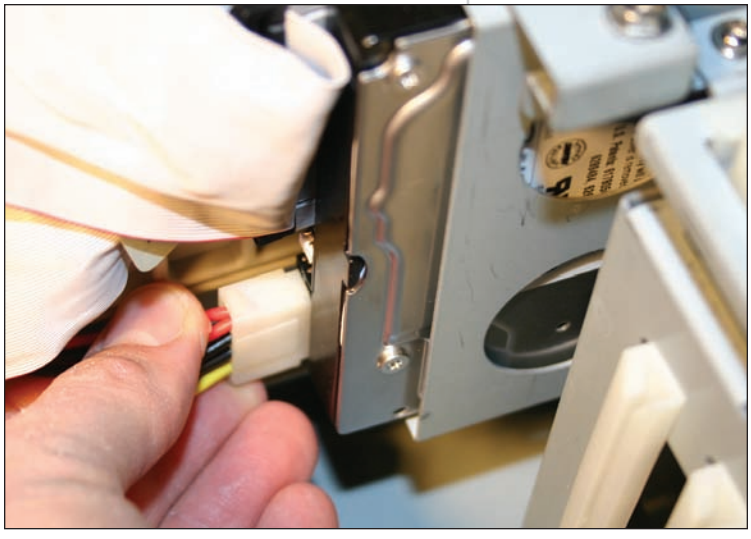


Fig 6. A 4-prong power connector from a PSU connected to a drive

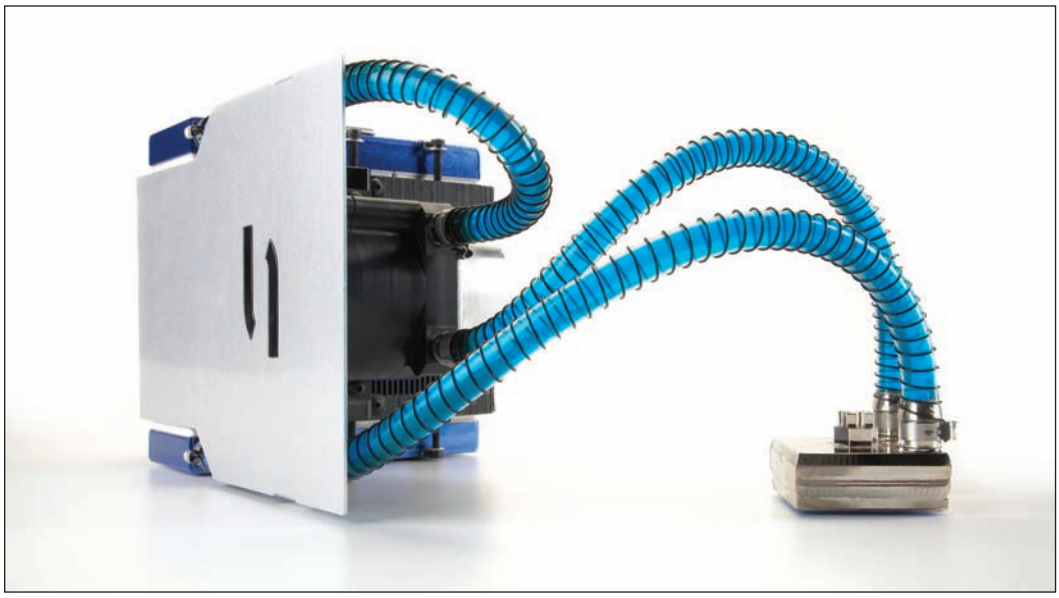


Fig 8. CootIT Systems' Freezone CPU Cooler

power with a low noise level.

There is one drawback: it lists for $400.

Cases

What about cases? Several case manufacturers including Antec and Nexus have produced products for musicians, gamers, and multimedia enthusiasts.

These cases are optimized so that the components stay cooler and require less air flow. They also come standard with quiet case fans, vibration absorbing material, and a quieter than normal power supply. Antec's Sonata and Sonata II (Fig. 9) and the 180 as well as the Nexus Breeze are all good foundations for a quiet PC system.

You can modify your computer case for an even better result by installing acoustic material inside the case to help dampen noise. Several manufacturers including Nexus, Acoustiproducts, and Antec make these products, which are foam-based and usually include an acoustic barrier made of a different mass than the foam. Grommets for reducing vibrations from hard drives are also available.

Fig 9. Antec's Sonata II Case

Drives

Hard drives are notorious for high pitched, irritating noise. Streaming sampling has mandated our use of fast drives, and these produce more noise than slower ones. Even so, great streaming results can be produced from 7200 RPM drives in lieu of 10,000 RPM drives, which are much noisier.

Maxtor and Western Digital drives are known for their reliability, and both companies produce several drives with silent features and decibel ratings of about 26-28 dB. These drives are almost silent when mounted in a good case, except for any noise that is produced from vibrations from the drive itself.

If your system is going to be out in the open in your studio, you might consider installing the drive in a noise dampening enclosure (Fig. 10). These reduce noise by about 4dB, which for most drives results in about half the noise of the original drive. And there are grommet kits that provide rubber insulation that reduces the vibration of the drives.

Another interesting solution is to mount your 3.5" hard drive in an empty 5 1/2" drive bay using special mounts. These greatly reduce vibration while providing ample airflow around the unit.

Conclusions

So where does the DIYer find products like these? There are several companies that specialize in helping users silence their PCs.

Two companies that are very knowledgeable and have a great reputation are endpcnoise.com and quietpcusa.com. For technical information, extensive unbiased reviews on fans, drives, cases, supplies, and other components and a knowledge base and forum, SilentPCreview.com is a great source for anyone interested in the subject.

When possible it is better to *start* with a quiet computer, instead of having to isolate and change components. Companies that build audio workstations have a responsibility to make sure that they use the quietest components possible. If you use an "off-the-shelf" system or a system that is too noisy, changing the components can help.

In addition there are a few more ways to keep your computer quiet:

- If possible, leave PCI Slot 1 empty so that a built-in graphic card can have more circulation. This makes your fans not work as hard.
- Vacuum out the dust from the air intake

(CONTINUED ON PAGE 60)

Fig 10. A Nexus hard drive enclosure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Loop Librarian

Hip-hop Loop Libraries from Big Fish: Heat Seekers, Hip-hop Exotica, Hip-hop City, The Rhythm Station

Review by **Chris Meyer**

Hip-hop remains one of the most varied musical genres going. Not unexpectedly, loop libraries that bear the "hip-hop" name or description are varied as well. As a result—and unlike the stereotype—many are useful for creating music in genres other than strictly gangsta rap, especially if you are trying to add an urban feel to your compositions.

This issue, we're going to take a look at four hip-hop-themed collections published by Big Fish Audio. All are song builders that contain WAV, enhanced "Apple Loop" AIFF, and chopped-up REX versions of the loops on single cross-platform DVD-ROMs. Documentation for all four is thin; be prepared to take your own notes to remember what you liked in each library.

Each collection contains multiple "songs" divided into folders that have the tempo and (if applicable) key in their names. Three of the four contain a demo mix version of the song, the components that make it up, and additional folders per song of matching hits or further breakdowns of the drum loops. Most contain a sampled-and-programmed feel; most also lack variations of the component parts. Therefore, song progression will have to be built by switching parts on and off, or adding overdubs—which isn't unusual for this genre. The last one we will look at—*The Rhythm Station*—is the exception to most of these rules, providing a live-performed, drums-only take on hip-hop.

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(www.bigfishaudio.com)

Platform: 16- or 24-bit 44.1 kHz AIFF/Apple Loops, WAV, & REX2 files

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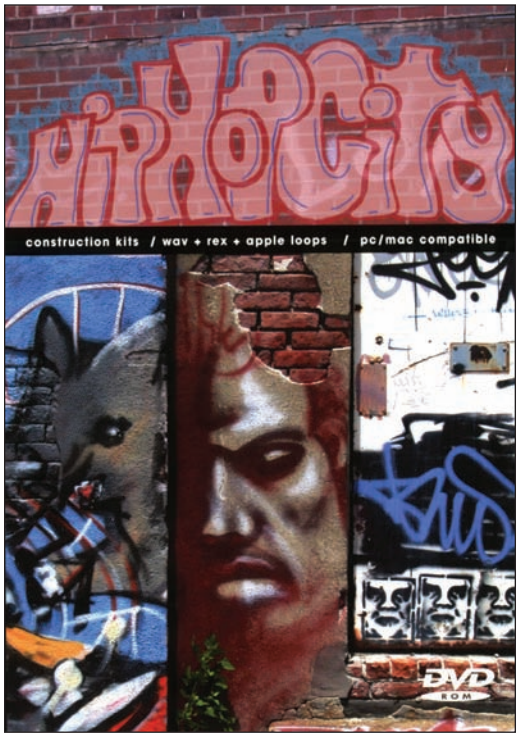
Heat Seekers

If you already work in the electronica/dance arena, this is the most appropriate of the four collections for you. The production features a blend of lo-fi sounds (including liberal doses of noise) and adventurous rhythm programming, plus strings, synths, and other pop-oriented instruments with an occasional touch of glitchiness. Stylings spill out into the fields of big beat, ambient, trance, lounge, R&B, and even Led Zepplin references—in other words, not strictly hip-hop.

There are 50 songs, all in minor keys, ranging in tempo from 70 to 140 bpm (although most are in the 80s/90s/100s). Each song features from four to 13 component loops, plus a folder that breaks down the main drum loop into two to 11 components (three to four being more typical). Each song also contains a folder with a similar number of individual hits. A combination of longer component loops (4 to 16 bars each) plus 24-bit recordings—perhaps an indulgence, given the lo-fi nature of most of the sounds—brings the AIFF version up to 1.86 gigs of material. In short, a nice dance toolkit.



Hip-hop Exotica

Imagine crossing hip-hop with Indian film soundtracks or Turkish folk music, and you'll get an idea of what this library sounds like. There is a predominance of plucked instruments from around the world (from banjo to bouzouki to sitar, and many points in between), along with symphonic strings and even the occasional flute. The bass can be acoustic, electric, or synth; the drums are simple but slammin', often with loops of both a count-in (how rare!) and the central rhythm.

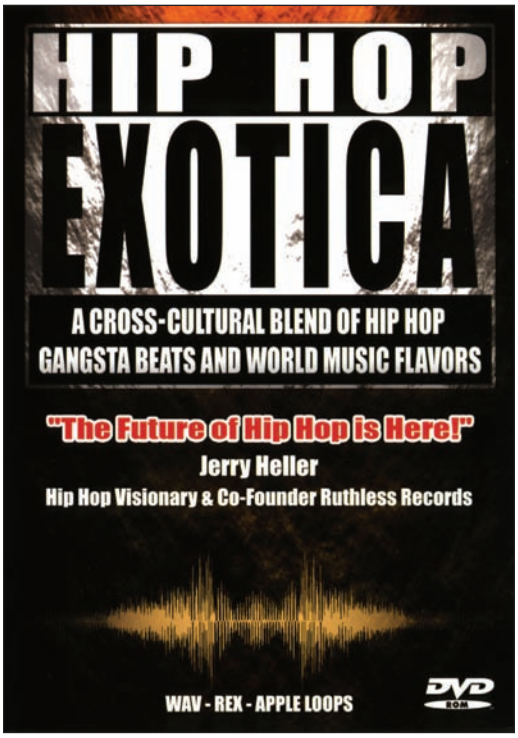
There are 55 songs, again all in minor keys. Tempos range from 68 to 104 bpm. The arrangement of each construction kit is very similar to *Heat Seekers*, with 4-14 loops per song, plus folders of single hits and drum breakdowns including 2 to 11 subloops (3-5 being typical). Individual loops tend to be two to four bars each (some are eight), yielding a library size of 1.27 gigs for the AIFF version. As always I would personally like to hear more variations and longer loops per song, but the unusual instrumentation alone will certainly inspire the more adventurous songwriters out there.

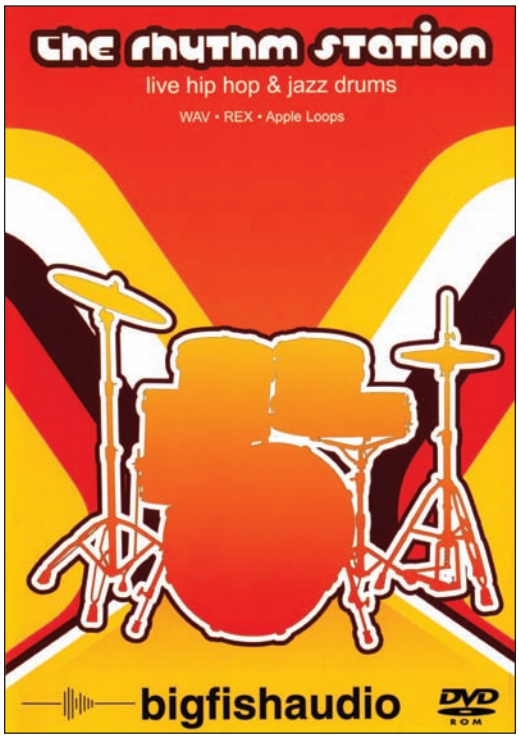
Hip-hop City

If you're looking for a middle ground between the pop and dance sensibility of *Heat Seekers* and the overseas excursions of *Hip-hop Exotica*, this library may be more to your tastes. The drums are hard-edged and slightly fractured; the live scratching and guitar playing help add a busy, dramatic, almost histrionic feel to many of the arrangements. African and Oriental influences are often lightly layered into the instrumentation. The overall feel is more exuberant old-school than brooding gangsta rap, with occasional excursions into lounge or R&B territories.

There are 50 songs in a variety of keys. Like *Heat Seekers*, the tempos range from 70 to 140 bpm, with the majority being in the 80s/90s/100s. There are eight to 31 loops per song; these numbers are inflated by a relatively large number of scratching performances plus some drum break-outs (there are no separate drum component folders, although individual hits are provided). The individual loops are one to four bars each, adding up to a size of just under a gig for the AIFF version.

If you're the kind who judges the value of a library based on sheer bulk, balance this against a reduced list price of $69.95.





The Rhythm Station

Which of these is not like the others? This library consists of nothing but live acoustic drum loops, ranging in style from hip-hop to classic jazz and in sound from dry and gated to open and ambient. There's no lo-fi heavily-compressed kick and snare here; instead you get an abundance of fills, a lot of hi-hat interplay, and even the occasional dose of brushes. There aren't any melodic instruments, but there are occasional folders with processed variations on the drums.

There are 30 song folders; in some cases two or three folders are related (including the two songs in 6/8). Tempos range from 64 to 134 bpm, with some of the loops in a set having a half-time feel. There are anywhere from three to 19 component loops per song, mostly on the short side of one to four bars in length. This adds up to 313 meg of material for the AIFF version (for a list price of $49.95). As a result, composing with this library takes a completely different approach than the others: you will be bouncing back and forth between short pieces to produce variations, rather than repeating the same loops for the entire song and muting individual loops to create variation.

This is not necessarily my favorite library in either the hip-hop or drummer-as-star genres, but it just goes to show the variety of collections you'll find with "hip-hop" on the cover.

VI

TASCAM Giga GVI

The VST plug-in (and stand-alone) player version of GigaStudio is here.

Combo review
by Nick Batzdorf

Fig. 1: Giga GVI's main screen has 16 slots—one per MIDI channel—for loading instruments. It's also easy to stack instruments on a single MIDI channel, as the instruments in slots 2 and 3 have been set up. You can map the layers to keyboard zones or switch between them with keyswitches or MIDI controllers.

TASCAM Giga GVI, $369

www.tascamgiga.com

System requirements: same as the host applications; runs on Windows XP

Format: Windows VST, RTAS, and stand-alone. Mac version in development.

License: USB dongle (Syncrosoft)

By streaming samples of unlimited length off a hard drive, TASCAM's GigaStudio sampler revolutionized the field of sampling a few years ago, creating a whole new musical medium. Since then several other streaming samplers have come out, the whole V.I. scene has exploded, and most of us use instruments from lots of developers side-by-side.

GigaStudio (GigaSampler at the time) came out when computers were less powerful than today's, and to make it as efficient as possible its developers needed to bypass a lot of the Windows operating system. That pretty

Fig. 2: The GigaPulse convolution processor is built into Giga GVI. Convolution isn't only for reverb—this program is TASCAM's continuous velocity piano, which is using convolution to model the pedal up resonance. Embedded convolution programming is a big part of Giga.

much meant dedicating a computer to it—not an unreasonable concept at the time considering all that it could do, in fact people often dedicated several computers to it.

While the current version of GigaStudio can coexist with other instruments on the same machine, it's not exactly a social animal. Realizing that musicians were clamoring for more convenient solutions, TASCAM came out with GVI, a plug-in and stand-alone player version that doesn't bypass Windows.

GVI (presumably Giga Virtual Instrument) is convenient indeed, and based on its performance on the review computer, a custom 2.8GHz Pentium 4 VisionDAW machine (www.VisionDAW.com), that was a very wise move. (VisionDAW is a TASCAM-certified system builder.)

In a break with tradition, TASCAM announced that they're developing a Mac version of GVI at the same time as the Windows version being reviewed here, which is the first one out. What's ironic is that Giga prompted a lot of Mac users—myself included—to buy Windows slaves machines for the first time.

GVI layout

This V.I. couldn't be more intuitive and easy to get around, especially if you're used to GigaStudio. There are program slots for each of the 16 MIDI channels, and you start by clicking on one to get drop-down hierarchical menus for loading instruments or stacking others on top of others you've already loaded.

As shown in Fig. 1, all the basic playback functions are on the main MIDI Mixer screen, which borrows heavily from GigaStudio's look. Once set up, you can save the whole state of the instrument as a Preset. And as with any V.I., it's automatically saved with the project if you're using the plug-in version.

Impulse presets for the built-in GigaPulse convolution processor from GigaStudio (see Fig. 2) are loaded by stacking them on top of a loaded instrument (or v.v.). An instrument can be routed directly to audio interface outputs or to one of up to 16 effects inserts, each of which has Reverb, Chorus/Mod, Tap/Delay, or EQ available—in addition to GigaPulse if you've activated it by loading an impulse (or one gets loaded automatically in a stack as part the program you're playing; convolution is a big part of the programming in upcoming libraries like TASCAM's Giga Violin).

While anyone with the computer horsepower to use GigaPulse is not going to use the stock reverb effect, subjectively its quality is in line with the built-in reverb in other software samplers. The same could be said for the EQ and other effects, although a developer would have to work pretty hard to get a delay or delay-based chorus effect wrong.

You can set up some basic MIDI controller performance assignments—things like a volume-riding control (which can be automated by the host DAW)—on the main page. Then you get deeper into the performance editing by clicking on the Edit button, which brings up a waveform display and a screen with tabs for General parameters, amplitude and pitch, filter, and basic loop settings (sample offset, and if the program has a loop, its start and end points). Please check out Fig. 3.

Different colored lines superimposed over the waveform show the amplitude, filter, and pitch envelopes, as well as LFOs for each of those three. The envelopes and LFOs are

Fig. 3: As in its filter editing screen, GVI's amplitude/pitch envelope or LFO modulation is represented as a line superimposed over the waveform. This sine wave pattern here is a tremolo effect created by modulating the amplitude with an LFO.

interactive, and you can use the mouse or controls to adjust the envelope levels and the way amplitude, filter, and pitch are modulated (either automatically and/or with MIDI controllers).

Once you've loaded a stack, you can bring up a Stack Properties editor to set keyswitches or assign controls to switch between the stacked instruments; otherwise by default they are layered to play at the same time. You can also set the keyboard zones where each program plays.

If they've been programmed in, GVI also supports TASCAM's iMIDI rules, which interpret incoming MIDI to vary the phrasing.

Performance

While it's hard to compare without having the identical programs, GVI's streaming performance is on par with other streaming sampler plug-ins. Put another way, the performance isn't compromised by not bypassing Windows the way GigaStudio does.

Unlike early versions of GigaStudio, GVI has no preset restriction to the number of voices you can play—your system performance is what sets the limit. Of course, you can restrict the polyphony and tweak the playback settings to optimize the performance.

I was able to load roughly 1.2GB of samples into GVI, but that's mostly a function of the host software used for this review: Steinberg V-Stack. The review machine has 2GB of RAM installed.

While this performance is in the same ballpark as GigaStudio, GVI can take advantage of the latest dual processors alongside everything else running on the same computer. That's not important for streaming samples—before GigaStudio 3, Giga would use very little of the CPU—but of course it is important when you're running GigaPulse convolution and other processing at the same time. The only time the interface feels sluggish is when it redraws the MIDI Mixer; otherwise it snaps along.

GVI supports sample rates up to 96kHz, but today's computers aren't really ready for that and therefore it hasn't caught on. The program can work very well in surround, though—GigaPulse especially is designed to make that easy.

It's worth pointing out that GVI uses a Syncrosoft USB dongle, so you can only run it on one machine at a time.

GVI library

GVI comes with a nice library of included sounds from ten different companies (see Fig. 4). While these instruments certainly do serve to whet your appetite for the full libraries from these developers, these are complete instruments and not half-assed demo programs.

For me the first highlight is the Larry Seyer Acoustic Drums from his huge library with the same name. It's hard to explain why, but his kits have a lot of life to them, and they really do sound good.

Another highlight is the church organ from Notre Dame de Budapest, but that's hardly a surprise to anyone who's heard the full library. It's one of the most impressive Giga libraries around.

SONiVOX' contribution is tied for the largest and most eclectic, with everything from string, brass, and woodwind ensembles to Afro-Cuban percussion, a couple of drum kits, and a Rhodes (that's far from the entire list). Their stuff is consistently high quality, in fact their tour de force Muse collection is the first third-party library to come inside a GVI player. We'll have a full review of it next issue—it's really good.

Best Service also has a lot of instruments here, including some nice ethnic percussion and decent ethnic winds with keyswitched articulations. The best of their bunch is Smart Violins, which puts a variety of short disco string licks under your fingers. You're restricted to the tempo and somewhat limited keys provided, but they're great.

Westgate Studios' contribution includes a really nice nylon string guitar in a lovely GigaPulse reverb program, a keyboardfull of percussion toys, and an orchestral trumpet. I hadn't heard any of their instruments before, and I'm pleasantly surprised.

Bigga Giga's DX-7 programs sound richer than the original, Sample Tekk's tenor recorder is quite good, and there are some samples of the old standby Jim Corrigan guitars. We're glossing over a lot of material very quickly here.

The most interesting program of the bunch comes from TASCAM: a continuous velocity piano. Rather than being sampled at an infinite number of velocities (!), this one uses the Giga Dynamic Emphasis Filter to create the continuous velocities out of one sample. As shown in Fig. 2, the pedal-up and -down resonance is created with GigaPulse. It plays well and sounds quite good—and it's certainly an advance over the original Giga Piano, which was the sole program that came with GigaStudio when it was first introduced. That does come at the expense of a lot of CPU when you're playing piano parts (like 75% of the review computer), however.

GVI or GigaStudio

If you do a lot of sample programming, the full GigaStudio 3 Orchestra version is still available, and it has a more extensive sample library. But for playing libraries this is a much more convenient and also more affordable way to go. We'll probably see a number of third-party libraries come out in player versions follow SONiVOX Muse as well.

GVI is likely to make a lot of people with investments in Giga libraries very happy, and the bundled content should attract some attention too. VI

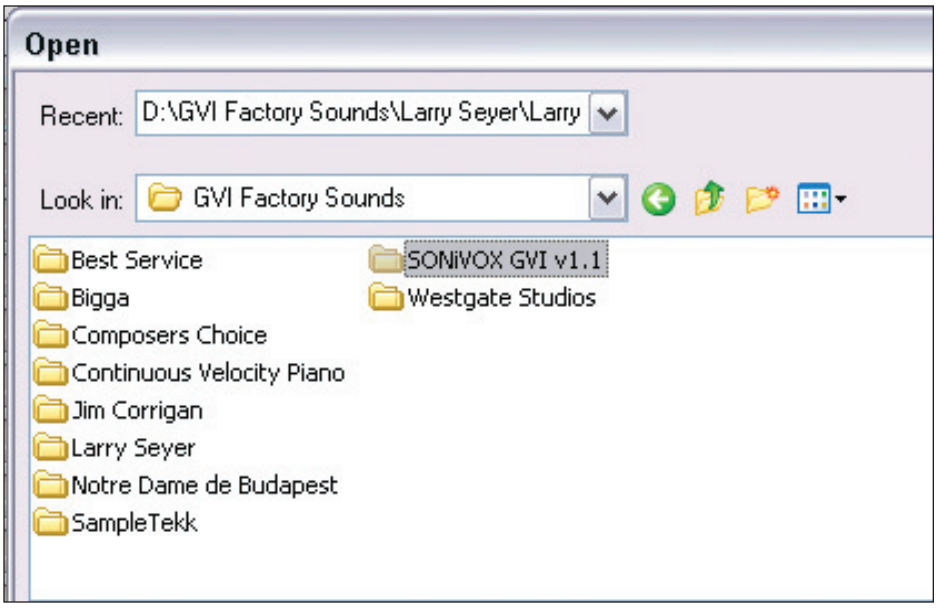


Fig. 4: The included sounds are an important part of every sampler, and Giga GVI includes a lot of good ones from well known developers.

In a break with tradition, TASCAM announced that they're developing a Mac version of GVI.

NEW!

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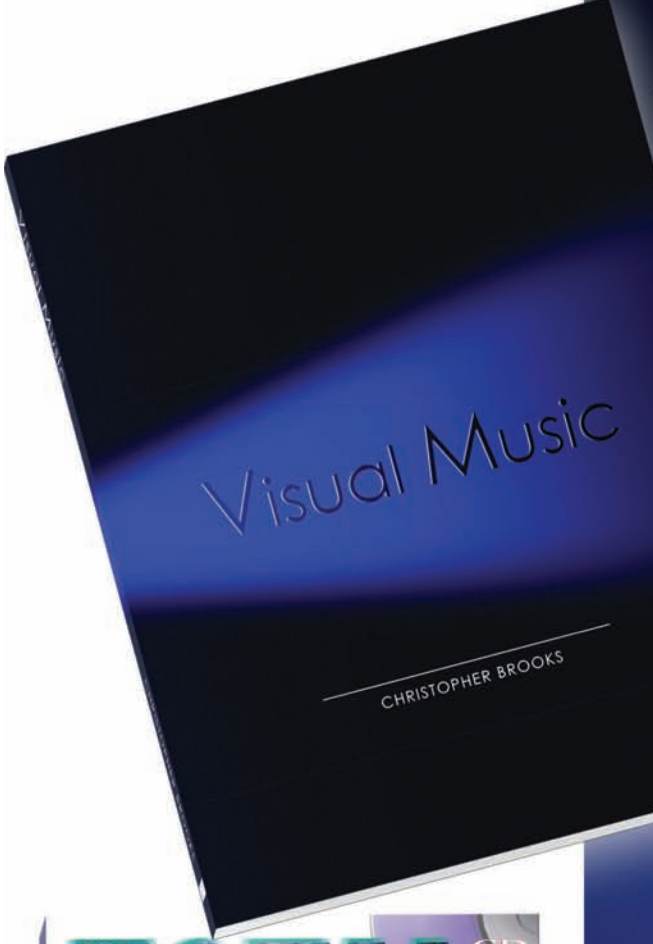

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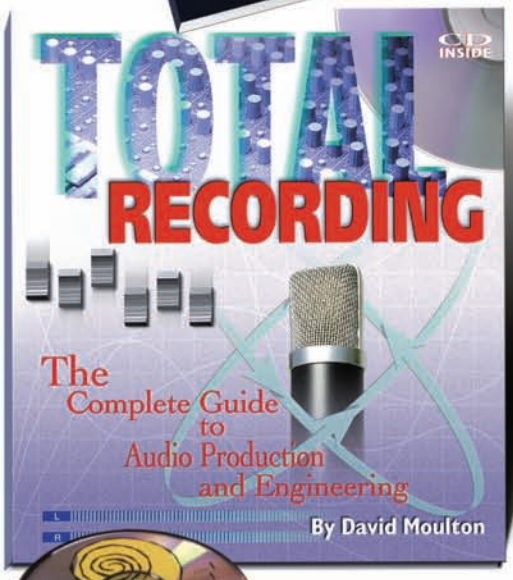

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Wizoo to Digidesign AIR: Peter Gorges

The driving force behind high-profile Softsynths from Steinberg and Digidesign

by **Jim Aikin**

Most of us just play virtual instruments. A few lucky people get to make them.

During the past decade Peter Gorges has cut a swath in the VI world, first as head of his own company, Wizoo, in Germany, and currently as the head of Digidesign's Advanced Instrument Research group. Wizoo developed some important softsynths for Steinberg, including The Grand, Hypersonic, Virtual Guitarist, and Xphraze. They also released, on their own, Darbuka and Latigo, a pair of "intelligent" percussion plug-ins. Since Digidesign's parent company Avid acquired Wizoo last year, Peter has been the force behind Digi's Xpand!, Hybrid, and Strike instruments.

In person he's outgoing but modest, and quite enthusiastic about his work. During a December '06 trip to California to visit Digidesign's offices, he made a side trip to my home studio for a chat. A few years ago, for another music technology magazine, I edited the English-language version of a series of columns Peter had written on synth programming for the German *Keyboards* magazine. Later I wrote a short book on FL Studio that was published by Wizoo. I thought Peter and I had never met, but he reminded me that before

Wizoo was born he had come to the U.S. as a product specialist for organ manufacturer Wersi. He had been part of the team that brought their latest model to the office where I was working (at that other magazine).

Peter started college intending to major in computer science and/or music, but soon he was also working in a local studio in the Dortmund area as the resident keyboard player. Before long he had dropped out and was a full-time musician. His first big project was a book on programming the DX7. Throughout his career he has been eager to roll up his sleeves and take on the next project, and he hasn't missed a step yet. In this interview he provides a revealing look at what happens behind the scenes before a virtual instrument reaches the market.

Was the DX7 your first synthesizer?

No, my first synthesizer was a Korg MS-20. Then I had a Korg Delta. At the age of 15 I wrote my first product review that got published—I was so proud of it—of the Korg Delta. Then I got a Multimoog, and after that the DX7.

How did Wizoo get started?

It's kind of a bizarre story. I had been a freelance guy for more than ten years. At some point *Keyboards* had a university do a reader survey where they asked questions about what magazines people read. Two weeks into the survey, the professor who was doing it called them and said, "Who's this Peter Gorges? He's mentioned on 80% of the questionnaires." My chief editor said, "What's so strange about this?" "Well, we haven't asked them to write in a name."

Then MusikMedia, who's the publisher of *Keyboards*, said, "We have to make something with that name. We should start a company or something." I had always planned at some point to start my own company, because I thought at some point I probably want to build some assets that make money rather than getting paid for my work.

I thought that was the right moment, so we started Wizoo. It pretty much did what I had done before. We did books, we did sample CDs—I had worked for a couple of synthesizer manufacturers doing samples and synthesizer programming, so that's what I did with Wizoo. That started in 1997.

What was Wizoo's first synthesizer?

We got a job from Steinberg. We did the drum samples for the LM-4. Except for Generator from Native Instruments, that was pretty much the first commercial virtual instrument ever. And it was very successful. So they asked us to consider doing more virtual instruments.

At that time I wanted to do an acoustic piano. I had done a couple of jobs for Kawai. I gave them the idea for what became the MP-9000 digital piano, the product specifications. They said, "We owe you something." I said, "You can pay me back by setting up a piano and allowing me three weeks in your research laboratory." They have an anechoic chamber there. So we went there, and the samples we recorded became The Grand. That was released by Steinberg in 2001. That was our first big project; LM-4 we only did the samples, but The Grand was pretty much our project. It ran on the first Halion engine.

Manfred Rürup, who was the CEO of Steinberg, called me at some point and said, "We want to tie you guys to us." In 2001 they bought 60% of the shares of what became Wizoo Sound Design. Originally it was just Wizoo GmbH, so we split it into the book publishing company and the sound design company. That's how all this virtual instrument business developed.

Within two years we contributed more than 10% of their revenue.

After that you developed Xphraze and Hypersonic. There were some plug-in modules for Hypersonic that were sold just through Wizoo, that Steinberg didn't pick up on, though they were later folded into Hypersonic 2.

Yeah, that went totally wrong. We started doing what we called Hypermodules—the synthesizer, the grand piano, and the organ. We started them during the time when Steinberg got bought by Pinnacle. By the time we were finished, they had to listen to Pinnacle people whether to distribute them or not. At some point I said, "I'm tired of this. We're going to sell them ourselves."

It's a nice concept—a plug-in within a plug-in.

I thought, firstly, what's nice about this is that you don't have to have an instance of an instrument in its own track for every patch that you need. You can store multis. And also I thought, sooner or later people will not want, how should I put it? There are people who want to pay $250 for The Grand. But there are also people who just want an okay piano sound. And they would pay $40. So that was the idea behind the plug-ins. We can do smaller instruments, and do more of them, and cater to these people.

Digidesign, by buying us, by buying M-Audio, and by buying Sibelius—you can see that they're making a very strong effort in the music creation direction, as opposed to just replacing the tape machine or the mixing console.

I heard a story that an early version of Xphraze was presented to Korg, and they weren't interested.

Actually, what happened was that Michael Kleps, who has a small company called reFX, had a software version of the Korg Wavestation done, including all of the samples. He had a finished product. He went to Steinberg and said, "Can we do something with this?" At Frankfurt MusikMesse (I don't know which year it was, but it was the year we showed Virtual Guitarist for the first time), they had a meeting with Korg. They showed the software to the guy from Korg, and he just shook his head and said, "We're not going to do this, and you guys are not allowed to publish this."

So Michael Kleps had hit a dead end. About a minute after that meeting the Steinberg people took him over to my booth and said, "This guy has done this Wavestation thing, can you do something based on it?" I had a concept in the drawer that was pretty much a phrase synthesizer. The inspiration came from my studio days, when somebody said to me, "Can you just quickly do a stereo polyphonic sequence?" Like rhythmic stuff. It never went quickly, it always took me an hour. And then somebody would change a chord somewhere. I always wanted to have something that would do that in real time. So we threw my idea together with his existing engine and that became Xphraze.

Then a year later, Korg came out with their Wavestation software.

And then we knew why they refused his product.

What's weird is that since then they've come out with a version that has resonant filters. It seems to me the whole point of their software is that it's authentic, so why change it?

Sales people keep asking for stuff like this. If you want to be innovative, my experience is you don't ask the sales people. You can talk to them to make sure you're not doing something that's completely uninteresting, but if you ask them what to add to a product, they'll say, "More voices, more keys, more patches, and half the price."

Before Wizoo was acquired by Digidesign, Hans Zimmer was part of the business.

Yes, he actually owned shares in Wizoo. I'll try to make it not too complicated. When Pinnacle bought Steinberg, all the Steinberg daughter companies went into a pool. Pinnacle didn't want to buy them, because Pinnacle is publicly traded. When you're public and you want to buy a company, you have to audit every daughter company. In addition to Wizoo there was Steinberg Canada, Steinberg US, all these companies, and Pinnacle wanted to do distribution themselves anyway. So they sold the 60% of the Wizoo shares for one Euro to Manfred, Charlie Steinberg, and a couple of others.

> There are people who want to pay $250 for The Grand. But there are also people who just want an okay piano sound. And they would pay $40. So that was the idea behind the plug-ins. We can do smaller instruments, and do more of them, and cater to these people.

Seven months after Pinnacle bought Steinberg, Manfred left. So I managed to get him actively involved in Wizoo. And about that time we got a call from Hans. He had a close relationship with the Creamware development team. In his studio, which was called Media Ventures, at that time they used a lot of Creamware Scope systems for mixing. Hans got word that Creamware was going bankrupt, so he called Manfred and me and said, "I know these guys. They're really good. They should be kept together as a team. Can you find a business model for them? I'm happy to invest money."

So that's what happened. We hired them into Wizoo, and Hans pretty much funded their payroll for one year. Their goal was to develop a huge sampler system that would be given only to Hans and nobody else. It would never be sold. Hans needs to keep his competitive advantage. He said, "Look, guys, I'm going to do a whole new sample library. There's this one horn sample, every time I play it I hear this guy farting in the right speaker. I'm so bored with it. I want something new. You guys build me the engine."

Just so you know how huge it is, it has 16-channel samples, so Hans can pick from eight sets of two microphones each and mix them in real time. Samples are cut into into pieces so he can round-robin the attacks when he plays spiccato. Everything that makes sample playback very realistic. We had I don't know how many velocity layers. Just to give you a figure, one note on this system would have been at least eight velocity layers times 16 channels.

Then Wizoo was acquired by Avid. Is Hans out of the picture?

He's been bought out, like Manfred and me as well. So the company is now completely owned by Avid. But Digidesign still has a contract with Hans. Next year he's going to get that sampler. A smaller version will be released by Digi. We're going to announce it at the [January 2007] NAMM show.

So that will be the next component of the Pro Tools instrument line, after Hybrid and Strike.

When they bought us, they needed the sampler. Everything we did on the way, we did either because we had it 70% done by the time we started talking to them, or just to have something before we finished the sampler, because it's such a huge project.

Was Hybrid something you started from scratch, or was it something you had been working on before?

That was a request by Digidesign during the due diligence. You know, the four or five months [prior to the purchase] where we dance around each other. In the beginning when they approached us, when [Digidesign GM] Dave Lebolt came to our NAMM suite and said, "Look, guys, we want to cooperate with you, and because we're a public company, 'cooperate' means we want to buy you," I wasn't that fond of the idea. I had other plans, and we had already a couple of cooperations, so it took like four months to get me convinced. Hans and Manfred were totally easy, because these guys are wealthy enough anyway. For them it didn't change much. I was the one whose existence was pretty much on the table. So they said, "We'll leave it to you."

During those four months I discussed with Dave Lebolt what are we going to do during the first three years? I wanted to know, would it be interesting for my team? Does it give us a new perspective? Obviously the Pro Sampler, which is the working title, was the biggest project, but we needed a few products to fill the first year. To get back to

your question, Hybrid was a mixture. Dave wanted a very simple synthesizer, something we could do in a few months so we would have something. It turned out that our ex-Creamware guys had done the Minimax, a Minimoog emulation. And they had a couple of ideas that they couldn't put into reality in Minimax. They wanted to do the ultimate high-end oscillator and filter.

It took them seven months or so. I let them start working on it when I started talking to Dave Lebolt. So during these four months they developed Hybrid. I said, "Look, guys, I only want to do a virtual analog synthesizer once. I couldn't be bored more. Let's just do one really good one, and then we can update it if we need to." We're now doing a filter update. Hybrid will have a classic Minimoog-type filter, and also more distortion modes.

How directly involved are you personally in developing the specification for a synthesizer like that? Do you talk over all of the details of oscillator waveforms and such things?

Now with Digi, I'm way more involved than I was before. Before Digi bought us, I had to deal with banks, finances, human resources. That kind of stuff needed 40% of my time. Now I'm way more involved, because people are doing that for us. The way it works usually is, with Strike, for example, I had the initial idea. I didn't just want to do some drum tool. I wanted to do something that really solves the problem that most other drum tools have—sounding unnatural, velocity switching, that kind of stuff. Not reacting to what you want it to do. You cannot conduct a drum sampler, usually. You cannot tell it to play a little bit less, or more, or these kinds of things.

So one of our developers and I pretty much sketched the idea during a four-hour train trip. Then what I usually do is, I give my guys a 5-page or so proposal. Very high-level. And I let them chew on it. Because there are better people than me in the company to design an oscillator. I want to retain my user perspective. I don't want to become too much of a developer.

What usually happens is, they chew on it for one or two months, everybody on his modules. What we do first is the graphic user interface. We do the interface before anybody starts work on any algorithm, so we know how this thing is supposed to feel.

Then they will come to me with questions like, "How many waveforms do you want? Which ones? Which way do we want to control them?" Stuff like that. It depends on the product. With Hybrid I wasn't that involved, because that was at the beginning of the Digi time, and I had other things I had to do. I just signed off on stuff.

Are there other upcoming projects that you can talk about?

No. [*Laughs.*] Everybody asks me exactly that. What I can say is, Digidesign, by buying us, by buying M-Audio, and by buying Sibelius—you can see that they're making a very strong effort in the music creation direction, as opposed to just replacing the tape machine or the mixing console.

My first guess would be something in the area of dance music production.

I can tell you there's going to be something in that area, of course. Our mission is to provide a good basic set of tools that people need. We don't want to kill all the third-party business. But what Digi wants to be able to provide in a couple of years is, when you buy a Pro Tools system you get all that stuff bundled with it, or you buy a complete package that comes directly from Digidesign. One of our goals is to build all those instruments, but the other goal is also to help them make Pro Tools more friendly for music creation. Which it definitely wasn't two years ago, or even one year ago.

They're making the right choices with M-Audio and Sibelius.

I think so. M-Audio was there when we came on board. To buy us or any instrument company was very smart, and to buy Sibelius was also very smart, because that gives them the education market. And now if you look at the Avid audio group, what they have to offer, they can actually give people a complete set-up—software, keyboards, speakers, notation tools. I think that's pretty smart.

If you want to be innovative, my experience is you don't ask the sales people. You can talk to them to make sure you're not doing something that's completely uninteresting, but if you ask them what to add to a product, they'll say, "More voices, more keys, more patches, and half the price."

Have you seen any instruments lately that are not part of the Digidesign family that have excited you?

I was so busy last year getting our own stuff done that everything that I looked at was just competition. When we did Strike I would look at Stylus RMX, I would look at BFD, all these things, and actually try to use them. When we did Velvet, I looked at the Native Instruments Elektrik Piano.

Do you still play music yourself?

Yes. I've just built a small home studio for myself. Actually, I'm an organ guy, not a piano player. I've researched a lot over the last year to finally get a good B-3 setup without a B-3. I have a Hammond XK-3 with the Motion Sound "real Leslie." In our company we started a rock band, and that's a lot of fun.

One of the things that I've noticed is that the people who are doing the most interesting products tend to be musicians themselves.

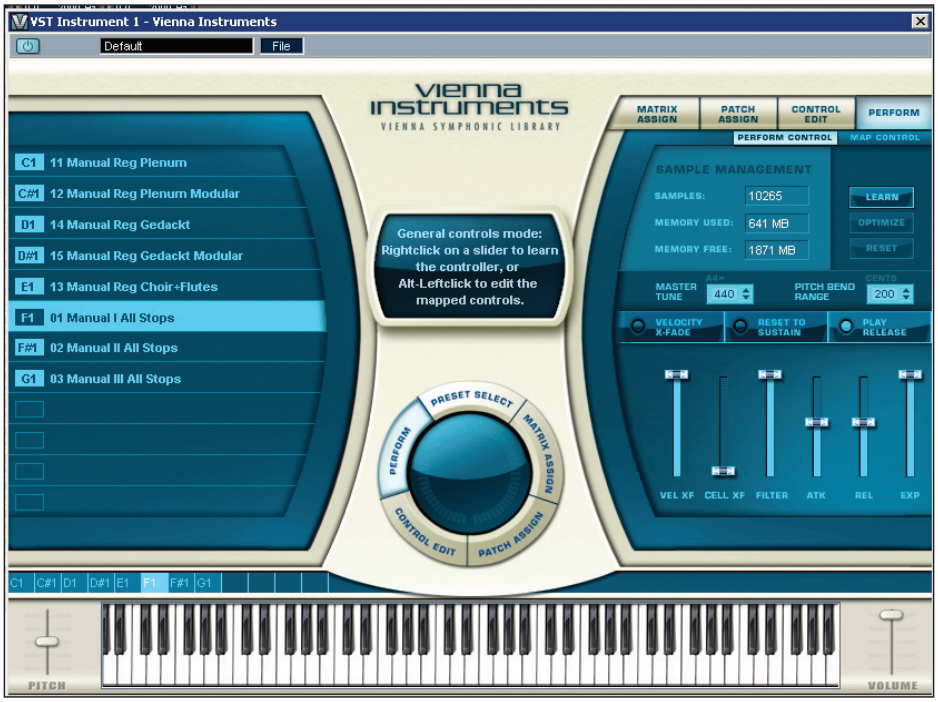
That was one of the reasons why I finally agreed to join Digi. They're run by a guy, Dave Lebolt, who is more of a musician than I am. He played for Billy Joel and David Bowie. He did film music and stuff. You can really see—I keep making the joke that he wants my job with his salary.

I think that factor is absolutely important, and that has always driven me: I want to have the stuff for myself. Something like Strike: I've always dreamt of having that kind of drum tool. VI

Vienna Symphonic Library Konzerthaus Organ

A new library that's both extraordinary and out of the ordinary

Review by
Hilgrove Kenrick



Vienna Symphonic Library Konzerthaus Organ $595

www.vsl.co.at, distributed in the US by Ilio: **www.ilio.com**

System Requirements: Apple G4 1GHz (G5 recommended), OS X 10.4; Windows XP: 2GHz processor, 3GHz recommended. 1GB RAM, 2GB recommended.

Formats: Windows VST, Mac OS X AU, VST. Stand-alone.

Copy Protection: Vienna Key (Syncrosoft USB dongle)

Newsflash! The Vienna Symphonic Library, kings of the Silent Stage recording studio, masters of pitch-perfect purity and immaculate noise-free recording have released a pipe organ library. Not just any organ either, but the fully restored Rieger organ from the Vienna Konzerthaus. How on earth did they manage that with their usual purity, and more to the point how did they uproot it and fit it into their silent stage?!

The instrument in question was installed by the renowned Gebrüder Rieger in the Great Hall of the Wiener Konzerthaus in 1913, and lovingly overhauled in 1982, with MIDI facilities being added in 1995. It boasts five manuals with 38 stops, and a full pedal board with 18 stops pumping air through 149 ranks of pipes, including a pair of monstrous 32 foot Bombardes.

It's alive

No this is not VSL's trademark silent-stage recorded purity. The Reiger organ is part and parcel of the very fabric of the Konzerthaus, and thus somewhat immovable.

However, having spent a great deal of time in the hall working on the long awaited MIR project (a sophisticated mixing engine for their library based on huge numbers of impulse recordings), the team felt they knew the venue well enough to work *with* the acoustics rather than try to hide or remove them. With the MIDI control over the organ it was possible to retain precise control over individual notes, and allow for short and long sounds and the resulting reverb tails—particularly as some of the bigger pipes take up to a second or so to get up to full power.

The end result is VSL's first "live" library, or at least one recorded outside the confines of

their trademark Silent Stage. However, as the organ is situated in a concert hall and not a church, the reverberation is well controlled with no enormous tails to contend with and muddy the sound. But then close-miking a pipe organ would be a bit daft—not to mention injurious to the microphone!

After the requisite editing and tweaking, you end up with the now familiar VSL Vienna Instruments interface of matrices and patches with which to access 14 gigabytes worth of data. The editors have carefully split them up into the relevant individual stops for both manuals and pedals, along with common registrations for each.

To help add that extra layer of authenticity there are also separate samples for pedal and manual valve sounds, and a cunning recording of the noise floor in the Konzerthaus itself along with whispers from the wind-chest, which works particularly well layered into quieter sections (if there ever were such a thing in an organ piece!). Unlike the majority of the other VSL collections, there is only one edition of the Organ, with no expanded library available.

Out of the room into the box

Like so many of the VSL collections, there is a certain amount of artistic assumption. To really get the best out of it the user needs some knowledge of the workings of a pipe organ, what comprises a playable combination, and how to use the various control options to get the best representation of the true sound. Having said all of that, this is one of the best of the bunch, being so easy to just load up and let rip, be it renaissance twiddling or full on baroque monstrosities.

The advantage here is that VSL samples usually require decent reverb to bring them to life, whereas the natural acoustics of the Konzerthaus make the organ playable right out of the box. But the reverb is so subtle and natural that you can easily add extra over the top for that huge cathedral sound without it getting in the way and causing phasing issues.

The registrations have been carefully chosen and grouped together in logical collections such as Small and Large Principalplenum, String Choirs, Gedakt and so on. Chery picking from the enormous stop list allows you to create your own registrations, with the interface offering multiple ways to switch or blend between them.

How on earth did they manage that with their usual purity, and more to the point how did they uproot the organ and fit it into their silent stage?!

Let slip the stops of war

In all, this library has much to recommend it. VSL are to be congratulated on picking such a fabulous instrument for the recordings and then proving their recording and editing prowess is second to none. It matters little whether you are after delicate flutes or glass-shattering reeds and mighty bass—this library has it all, ready to pick up and play. **VI**

by **Frederick russ**

MIDI Mockup Microscope

In this installment of our series on composers and how they did their MIDI programming, composer Andrew Keresztes discusses several of his cues. Download these cues at www.VirtualInstrumentsMag.com and follow along.

With a solid career composing orchestral music and underscore for over 40 film and television projects, Andrew Keresztes relies upon his command of music technology, traditional training, and sensitivity to picture to cover a wide range of styles. His clients include ABC, NBC, CBS, and FOX as well as Columbia Tri-Star, Lions Gate, HBO, and Disney.

Let's start with your rig.

The centerpiece of my setup is my DAW, which runs Nuendo and it's on a PC, a dual Athalon. I then have six computers total. They are all based on the Native Instruments Kontakt 2 format.

I used to have a few GigaStudio machines, but I have since migrated everything to Kontakt. I like the idea of having all my machines sharing the same format, so if I need one sound on one machine, it's not a big deal to copy it over. Also, if I have everything under the same format, then as I learn that sampler it's much easier for me to go in and tweak sounds instead of being afraid to

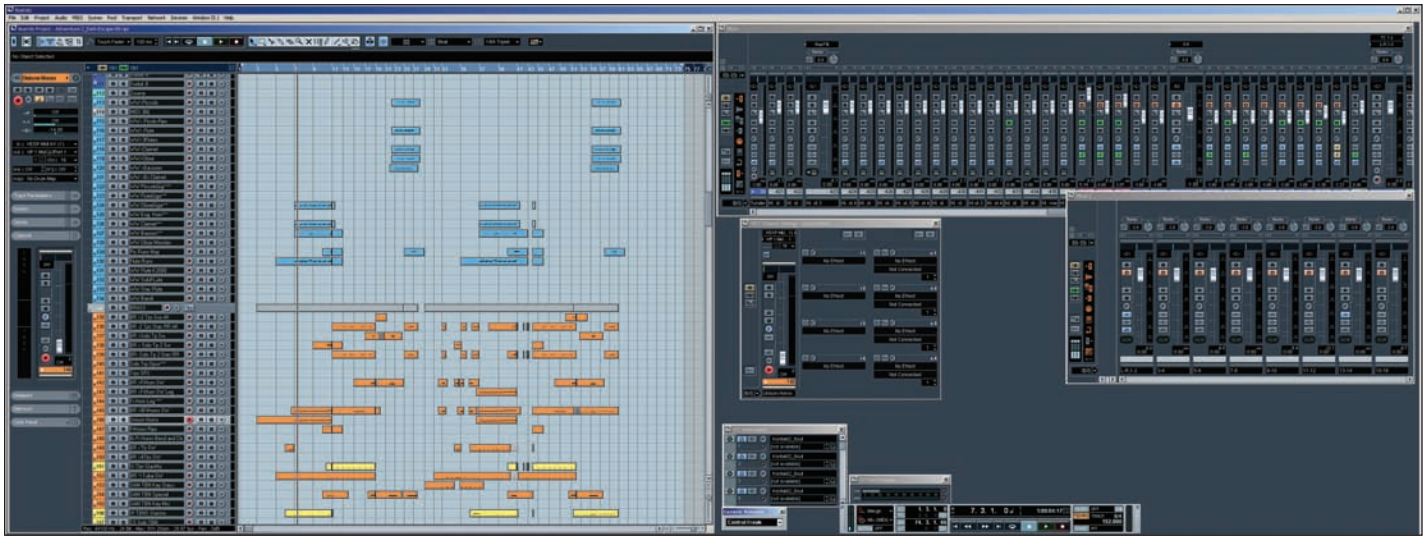


Fig.1: Part of Andrew K's main template in Steinberg Nuendo.

go in and change something because you are not familiar with it.

My computers are either being fed by MIDI interface—Steinberg MIDEX 8s, I have three—or they are using Music Lab MIDI Over LAN. My most recent computer is using MIDI Over Lan. The reason I am using three MIDEXs is because I have a couple of racks full of MIDI hardware.

Do you ever use those old boxes?

Yeah, I do. I use the Access Virus quite often for techno kinds of synth sounds. I've probably pared down my hardware gear quite a bit because I've been having the same samples loaded into these guys. I don't ever turn them off, they're on 24 hours a day. The only time I have to turn them on is with a power outage, and then I have to reset them.

They've have the same samples for a few years—some of the older libraries like Spectrasonics Symphony of Voices, Presonus, Roland libraries, some of the Peter Siedlaczek stuff. Some of those sounds are still very, very reliable. Also, they have a lot of percussion on them. Something about the Akai sampler has a nice ballsy sound to it. I have a patch bay that I can then send it to the Sherman filter bank, or analog filters and tweak it that way for techno or deep technical stuff. You can do a fair amount of production and signal processing that way.

The centerpiece of my mixing is currently three Panasonic DA-7 digital consoles. It has 96 channels of input plus it has 24 channels of digital input, clocked with a Lucid Gen-X 6 clock generator. I got it when they first came out, and I noticed a marked improvement—everything sounded like it was a little more glassy, transparent, less edgy. It was much smoother than trying to have everything clocked off the DA-7s or just use ADAT lightpipe for sync. My general philosophy with ADAT Light Pipe is, if possible you send word clock to each side—the send and receive of the ADAT device. So I sort of don't buy anything that has the ADAT interface unless it has word clock in or out.

The imaging on "Escape" is really nice. How much of that is due to your clocking set-up?

It's a number of things. Obviously there's is the whole mixing, wordclocking process, partly the arrangement, and also the samples. The samples being used for a large part, especially the measured tremolo strings, are part of a custom library that has a fairly defined panning and placement of their instruments.

Also, reverb. I have impulse reverbs I use with convolution reverbs, but I use them after the fact, not during the mixdown. During mixdown I have two Lexicons that are running as my reverbs—one for the stage and the other one for the bloom. Those tend to be a nice kind of glue for the sound, they make it feel like everything is in the same place. In fact I just bought a new laptop, one of the new 17" Macs. I'm going to put Audio Ease Altiverb on there and figure out a way to incorporate that into my set-up as just a reverb box.

Fig. 2: These scripts for Native Instruments Kontakt 2 sampler, referred to in the article, can be downloaded at www.VI-Control.net.

Fig. 3: Keresztes' studio is based around three (now discontinued) Panasonic DA7 digital mixers.

I would imagine that the Lexicons probably don't impact the sound equalization-wise as much as the convolutions.

You know, that's an interesting point. I have found that the convolution does seem to do more than just reverb. It definitely has a tonal component to it that can change the mix quite substantially, but that's usually if the convolution reverbs are done really well, that's a real welcome thing.

That's on my New Year's resolution list, to really get more into Altiverb or one of the really good convolution verbs. I really believe that gives another layer of reality. My sound tends to be a little more like the Hollywood sound—for better or for worse. A lot of the guys mixing here still use the Lexicons, and a Lexicon is an artificial reverb. The convolution reverbs are artificial, but they are based on an actual, real space. I would like to get more involved with that as time goes on.

The regular ambience from the East West library plus the Lexicon really works, especially when you are doing any kind of staccato stuff, you can hear what is happening in the reverb field. It's a trumped-up thing because the East West does have so much ambience, and some of the other libraries like VSL have close to no ambience, and some custom stuff I use has a little ambience. It's a little bit of a juggling game as far as reverb sends and how much to send, so it can get a little tricky.

I basically have one patch in the Lexicon and one convolution patch, a hall bloom kind of tail. In my DA-7 console I'll have the East West channels of my console sending less of the stage reverb, and with the other libraries I'll probably add in a little bit more of the Lexicon bloom tail just so they will fit in better with the East West. The problem is you really can't take away reverb from East West, you sort of have to match the other libraries to East West—the sound, wetness, so to speak. Ears can fill in the gap—it's all about maintaining the illusion.

Do you remember how many sequencer tracks you were using on "Escape?"

Yeah, well, my template is about 450 tracks, which means that I'll have like four or five variations of different tremolo strings, measured tremolo, then you'll have attack tremolo, staccato, marcato on just the violins. Then you go down the list and then you have the same thing for violas, cellos, and basses. So you can get a high track count for your template very easily.

But at the end of the day when you have done your cue, there's a function in Nuendo called Remove Unused Track so that the only stuff that stays on your template after you are done is the tracks that are being used—maybe 120, 130 tracks.

What are those clusters in Example 1?

I have all the strings sort of playing cluster chords in the low register and adding in brass doing the same thing higher up. I have an old box that only has one purpose: to play a patch called the Perfect Hit. It's basically just a massive metallic sounding hit that is too good sounding; it serves one purpose, which is why I haven't relegated it to the dust bin.

That's on my New Year's resolution list, to really get more into Altiverb or one of the really good convolution verbs. I really believe that gives another layer of reality.

Why don't you just sample it?

Because built-in processing is doing its thing. It's not just a sample, it's also a synthesized patch. Depending on how hard you hit it, it has a different thing going on. It's very useful—I keep coming back to it. I look for new sounds, I look for new things, I look for these anvil hits or something like that, but nothing even comes close to it.

So that with I believe I used a custom trombone staccato library patch for the low stuff—low brass. I think in there you'll hear a couple of crescendos. Most of the bass, cellos, and violas are divisi cluster cresc.

And the trumpet that is playing over the top of that?

It's unison, kind of playing odd, rhythmic, melodic lines, just to add accents and drama to that section.

Let's go to Example 2, the build-ups. I don't know of any commercial string library that glisses up like that.

That's a combination of glisses, and it is a commercial library. It's one of the old ones, I think it's Advanced Orchestra. But I also do have a trick. I have some perfect fourth downward glisses, and if you hold down your sustain pedal, if you start playing arpeggiated clusters really low and kind of slowly with your volume—with MIDI controller 7—you kind of go up and down, up and down very slightly, and you kind of build—you go up and up. I will sometimes back up a gliss like that, because I can play to the picture more accurately or to crescendo in a way that is timed with the music using the samples that are free time.

The first three seconds of Example 3—you build up to percussive hit.

I've created a sort of combined patch to make my own patches. Some of the stuff I've used will go from the old-fashioned Roland stuff or Presonus—really old stuff—to the newer East West to Percussive Adventures to Storm Drum.

I do have samples I have used here and there—a couple of custom things that I have done, but mainly stuff that is pretty much out there. I do like the timpani a lot from East West. They are very good. I upgraded to the East West XP. They have a few nice additions there with their percussion. I also have East West RA, which has a fair amount of ethnic percussion. I have Spectrasonics Stylus RMX, which is nice for more trailer epic-type stuff.

The crescendo roll comes from dead center but the hit itself was panned wide, so maybe this is the combining of all those different libraries?

Yeah, it's probably a Frankenstein moment. Also, I'll have a roll—in this case if I recall it's an old Presonus thing from years ago combined with the Wagner Bass Drum Roll from East West going into a big hit that might have been from RMX.

I don't use RMX in my template. I've exported all the things I think are really cool into regular sample waves that I chopped up in Propellerhead Recycle so I can bring it into Nuendo as I need it. That way I don't have an extra application taking up resources. Nuendo imports REX files very nicely.

Also, for percussion I do a lot of processing. I have an Empirical Lab Fatso, which is an analog compressor, and I use Nuendo's External feature, an insert send/return to the analog realm. So I am able to go out and back into the box to build my own sound, make it a little larger than life, a little more massive.

Some people call this the New York drum sound [explained in the 4-5/06 issue, p.30]. It's basically parallel processing. You just take a sound and then you compress the bejeepers out of it, put a little EQ here and there and run it back in, then play it along with the original sound sample. You have to make sure that your software allows for 100% latency-compensated external effects or else you'll get phasing. It's one of the old-style engineering tricks that somebody turned me on to.

You're using some really cool things in this little brass crescendo from 0:12 to 0:13 in Example 3. Is that a timed crescendo or do use the mod wheel? Do you like using mod wheel x-fade patches for that kind of thing?

I have a few of those I use. One probably everybody uses: SAM Horns flutter-tongue trombone. But I also use a modified patch from East West—a *fff* French horn. I play it really hard and bring it up with the mod wheel, with a correct amount of filtering. It's actually what blends the track and gives you that nice crescendo, timed perfectly for your performance.

I have started messing around more with the Kontakt 2 Time Machine, in fact I am becoming very intimate with it. There are a lot of great uses for it. The only drawback is that you obviously have to load the entire sample into memory for it to do its thing.

The French horns intro from 0:14 to 0:22—what library are you using?

It's East West, one of the keyswitch patches where you can use the mod wheel to control a cross fade patch, and it's combined with an East West solo French horn using SIPS, a legato script by Big Bob. [*Links to the scripts mentioned here—and an entire discussion section on K2 scripting—can be found on www.VI-Control.net, which is an excellent forum anyway that all our readers should join.—NB*] I found sometimes if you put a solo French horn combination with a

(CONTINUED ON PAGE 60)

Fig. 4: The workstation.

Native Instruments Battery 3

Assault and pepper from a primo percussion plug-in

Review by
Jim Aikin

Fig. 1: Battery's main window includes a matrix of cells (upper area) and a multi-tabbed interface for cell and global parameters (lower area). Right-clicking on a cell opens up a menu with a complete list of the cells in the library, for easy rearrangement of kits.

Native Instruments Battery 3, $229 ($119 update)

Native Instruments, 5631-A Hollywood Blvd., Los Angeles, CA 90028. 866/556-6487.

www.native-instruments.com

Formats: Mac/Win; stand-alone, VST, AU, DXi, RTAS

Copy protection: Serial number and online authorization required.

As much as I admire auto-play drumming software like Digidesign Strike (reviewed 10-11/06), at heart I'm still an arranger—and a wannabe drummer too. When composing, I want to decide on the placement of kick and snare hits myself. So Native Instruments Battery has played a big part in my music since it was first introduced.

Battery is a percussion-oriented plug-in with a vengeance, but it makes no attempt to dictate the beat to you. All of the percussion hits are laid out on separate keys, and you're the drummer.

Battery 3 is a significant upgrade. Improvements over version 2 include master effects, tons of new factory kits, an integrated browser, a basic wave editor, two ways of loading and playing REX and Acidized WAV files, and a more flexible way of laying out the cells that make up kits. But since some readers may not be familiar with Battery, we'll take it from the top.

Cell block

Drum kits in Battery are arranged in the cell matrix (see Fig. 1), which can contain up to 128 cells. Each cell contains its own samples and has its own filter, envelopes, and so

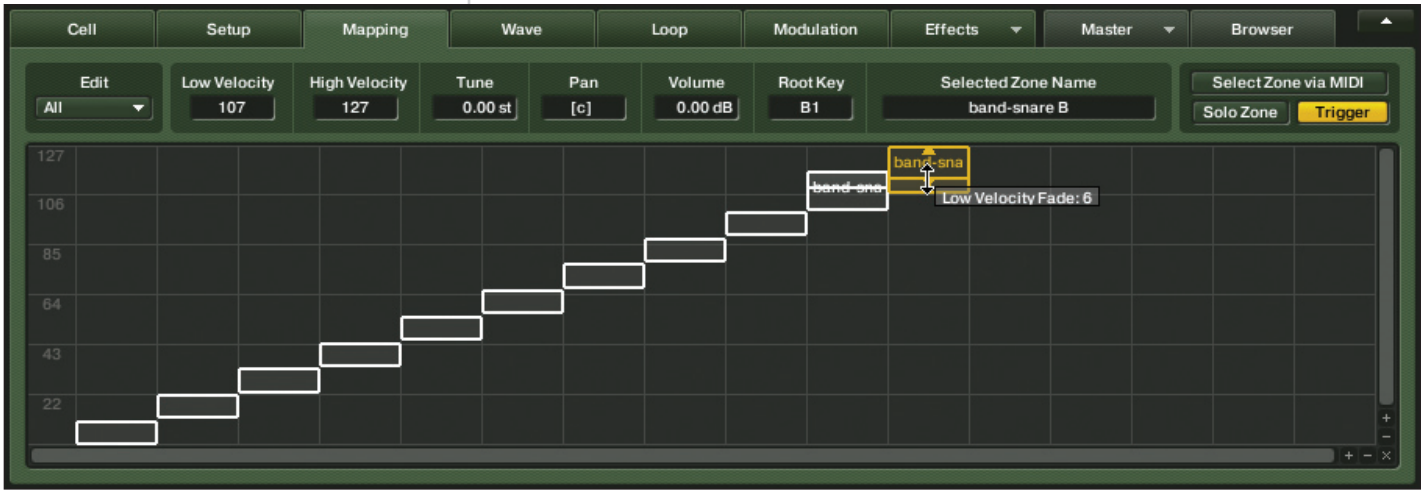


Fig. 2: Each cell in Battery can contain many samples. This window is where you adjust the velocity zones and crossfades.

forth. Normally each cell will be assigned to a separate MIDI key, but if you like you can assign several cells to one key or vice-versa. If one cell is assigned to a range of keys, you can play melodies and chords in its key range.

Most drum synths have one or more hi-hat groups, which cut off one another's sounds. Battery has a generous 16 groups, and a given cell can be assigned to any group. Each cell can also be given trigger conditions, so that it will play on key-up or only when a certain MIDI control change message is in a specified value range. Using this feature you could switch from one set of drum sounds to another using the mod wheel, for example.

Each cell has its own velocity response curve and an articulation generator for quick programming of flams, ruffs, rolls, and so on. An echo generator can produce repeating hits that sync, speed up or slow down, and change tuning. A "humanize" section produces random changes in the velocity, tuning, volume, or response time.

Assigning samples to velocity ranges within a cell is easy (see Fig. 2), and programming velocity crossfades is just as easy. The manual, which is not terrible but definitely not great, doesn't say how many samples can be loaded into an individual cell. I queried NI about this and was told that Battery can load a total of 4,096 samples per kit, which can be allocated across cells in any way you like, including all of them in a single cell.

Speaking of the manual, though, be sure to watch the eight video tutorials on the installation disk. These presentations tipped me to several features I had missed.

While Battery isn't going to compete with a full-fledged wave editor, its Wave page breezes through basic chores. You can cut and paste portions of waveforms, normalize, fade in or out, remove DC, and so on. The graphic display can zoom in both vertically and horizontally to the single-sample level, which makes it easy to locate areas that need editing, but there's no pencil tool for drawing out glitches.

Each sample can be given up to four different loops, and each loop can be assigned a number of repetitions, from two to infinity (see Fig. 3). This feature is great for programming stuttering effects, and also for making sustained tones sound less monotonous. Each loop can have a different crossfade length, and loop length and start point can be modulated (though this modulation routing is for the entire cell, not for individual loops within single samples in the cell).

Each Battery cell has eight modulation routings in all. Available sources include a pair of LFOs, three envelopes, and a random number generator (useful for introducing small variations). The list of destinations is longer—individual envelope segments, for example, the cell effects, and sample start.

Missing from the list are the send levels from the cell to the two global effects. Being

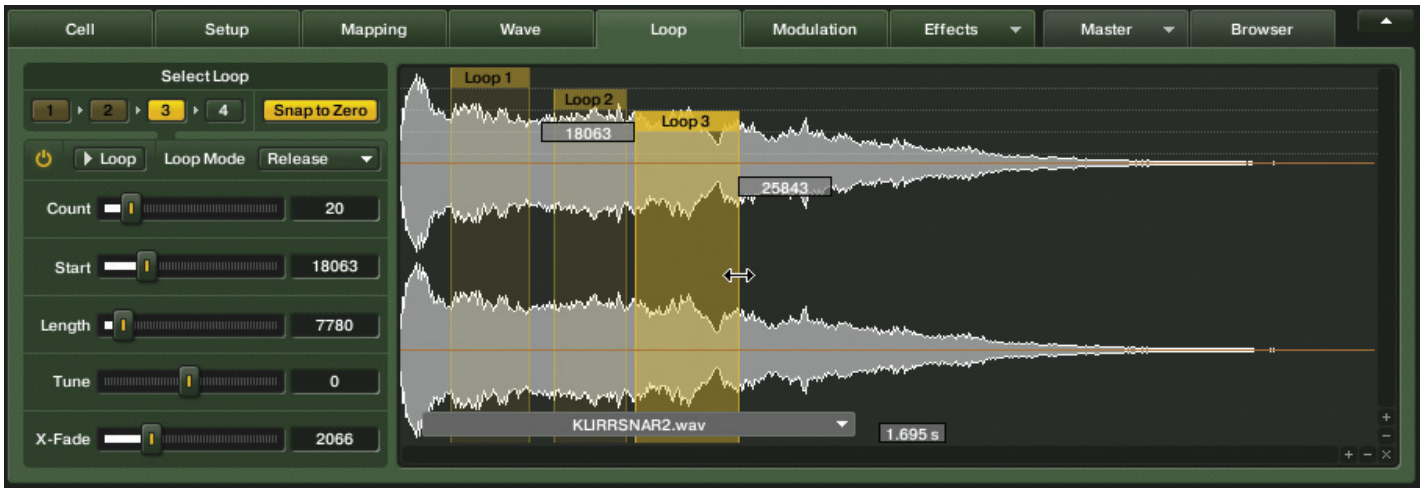


Fig. 3: In the loop editor, you can create up to four loops per sample. Loop boundaries can be adjusted with the mouse, and you'll hear the changes while the note continues to sound. The data readout for the tuning slider shows only half-steps, but the actual resolution of the slider is about 25 cents. Finer pitch adjustments can be made to short loops with the Length slider.

able to get more reverb with harder strikes or add a delay line in response to the mod wheel is pretty basic, and I'm surprised that Battery won't do it.

As shown in Fig. 4, the cell Effects page is where you'll find the resonant multimode filter, lo-fi, saturation, and a compressor. The filter includes a couple of vowel modes, which have two resonant peaks each, and a phaser mode. More could have been done with the saturation module. It's okay for adding an edge, but some programs do a lot more in this area, such as speaker and amp models, neither of which Battery has.

Each cell can be switched to either conventional sample playback mode or time-stretch mode. The latter uses granular synthesis with adjustable grain size and smoothing. A bit of granular speed-up can tighten a loose, sloppy tom-tom hit, and an extreme granular slow-down can turn a hand percussion hit into a long, unstable tone. Granular time-stretching can also be used to transpose a REX file loop up or down from the keyboard without changing its pitch.

Global FX & output

Battery has 24 outputs—eight stereo pairs and eight more mono outs. Only the master outputs use the global effects, of course. In this section are another multimode filter and compressor, a limiter, a pingpong delay, and a reverb. The delay and reverb are fed strictly by the sends in the individual cells, not by the output of the global filter/compressor/limiter chain, so the signal routing is not as flexible as it could be.

In this section, the best feature is the reverb, which uses convolution rather than old-school DSP. More than two dozen impulse files are included—everything from an arena and a tiled shower to the inside of a djembe. The size knob has nowhere near the amount of effect on the reverb's output that I've heard in other convolution-based reverbs, but the realism of the impulse response can definitely add life to a drum track.

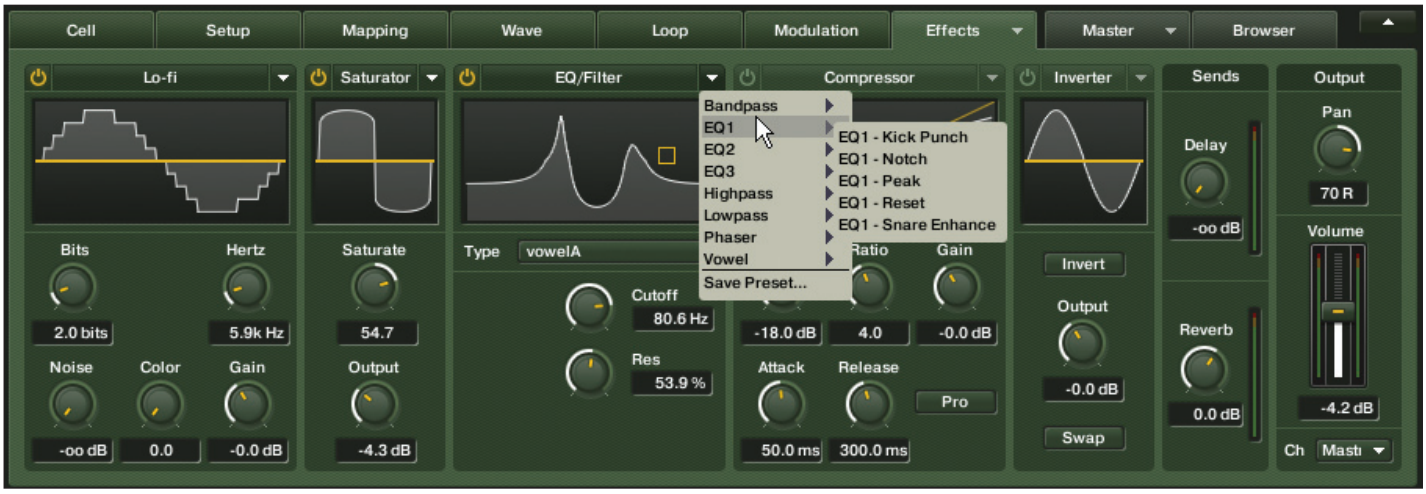
Kit & caboodle

The 12GB library includes all of the kits from earlier versions of Battery, and also a huge slug of new sounds—far too many to even list here. Numerous styles are represented, from orchestral to world music by way of dance and electronic. The quality of the factory kits is consistently high, but don't take my word for it—the NI website has short demos of all of the kits.

Some of the kits, such as such as Microwave and Beatbox Eliot, are frankly in the special effects category. Others, such as Heavy Rock and Jazz Brush, are set up to help you create the illusion that a real drummer laid down the track. The Heavy Rock kit gives you different mics in different rows of cells, allowing you to mute or unmute the mics you need. Jazz Brush includes alternate sticking, which switches between two cells when you play one MIDI note repeatedly.

Battery's UI has numerous convenience features. When you click on a cell parameter in any of the lower areas, for instance, each cell

Fig. 4: The filter is tucked away in the cell Effects page, along with distortion and compression. Useful filter presets are available from a menu.



in the matrix temporarily displays its own value for that parameter. This is especially useful with panning and assigning cells to different audio outputs.

After loading a sample into a cell, you can alt-click on the cell to step through all of the samples in the same directory. If the cell has been loaded from the factory library, alt-clicking steps through the cells in the library. This is a super-quick way to try out a track with different kicks or snares.

I hit a big snag when trying to use Battery's browser, and the NI product specialists were baffled for a week. The browser stubbornly refused to display any files at all, and their finest minds couldn't duplicate the problem. By accident, I finally discovered that in the Battery browser, unlike Windows Explorer, you can't click on a folder icon to see the contents of the folder—you have to click on the name of the folder, which is displayed directly to the right of the icon. When I clicked on the name of the folder, the files showed up and could be dragged into cells as expected. I sure felt stupid that it took me a week to figure this out, but at least I was in good company.

Battery can load REX and Acidized WAV files either into a single cell or into a bunch of adjacent cells. (The manual also mentions Apple Loops—which are just WAV files—but since I'm a Windows user I didn't test this.) When you load a file into a series of cells, a separate slice from the loop will be active in each cell. If you've loaded the file into a single cell it will play back at the tempo of the host sequencer, but this sync can be switched off.

When a REX file is expanded from one cell to a bunch of cells, a MIDI file is automatically extracted and saved to the computer's desktop, where it can be dragged into your sequencer. This essential feature turns Battery into a fully capable REX file player. (Since I recently reviewed Zero-G's *Total REX* DVD for another magazine, I'm buzzed by this feature. Battery makes it easier to play those files than any of my other REX-capable programs.) But it gets better: Battery can just as easily create a MIDI file from an Acidized WAV file. I'm not aware offhand of any other program that will do this.

Battery is a percussion-oriented plug-in with a vengeance, but it makes no attempt to dictate the beat to you—you're the drummer.

Recharged

Broadly, the desktop percussion field splits into two categories—"we'll play it for you" and "you play it yourself." The REX/WAV/Apple Loop features of Battery 3 straddle the divide, which helps Battery stand out in a crowded field.

But at its core, Battery is not a loop player: it's the ultimate software drumkit for anyone who wants to create their own beats. The interactive playback options are stellar, the sound design features are excellent, and the included library is awesome.

Whether you're doing orchestral emulations or glitch remixes, Battery will definitely rev your engine. VI

Toontrack EZdrummer

A relatively compact library that doesn't sound like one, and it really is EZ to deal with.

Review by **Craig Sharmat**

Toontrack EZdrummer, $179.00; Vintage Rock, Latin Percussion, Drumkit from Hell Expansion kits $89 each.

www.Toontrack.com, distributed in the US by East West www.Soundsonline.com

System requirements: Windows XP, PIII / Athlon 1.8GHz with 512MB RAM;?Mac OS X 10.3.9 or higher, G4 1GHz with 512MB RAM. Universal Binary version that supports Intel Macs is now available.

Supported formats: VST, AU, RTAS

Copy protection: online code-response

Machines and software programs that replace drums have been around since the 1980s. After 20 years there are still companies pushing the envelope of what drums are capable of in a computer and/or hardware environment.

To set the stage for EZdrummer, the most recent collections of drums by companies like Toontrack, BFD, TASCAM, and Scarbee are software-based and offer drums with true realism. They do this by providing vast numbers of samples of each instrument played at different velocities, mic positions, stick positions, with various stick types, and so on.

So extremely realistic drum programming is now possible. However, it comes at a price in system requirements: hard drive storage (some of these libraries can run 30GB or more) and RAM.

The drums in those collections can come in highly processed and highly unprocessed ver-

Fig. 1: EZdrummer comes with lots of grooves that you can drag and drop onto a sequencer track, or you can just play it yourself. Or you can use a combination of the two.

sions. Each can be good or bad depending on who you are or what you want to do. Many people don't want to be bothered with the work needed to process drum sounds, while others relish the flexibility of a blank slate.

Also, most of these collections come with a limited number of MIDI files to play their kits. If you plan to program your own drums, this is unimportant; if you want well-played MIDI tracks to assemble your own parts, then having a wide selection is important.

These are the issues Toontrack grappled with when they set out to make EZdrummer. How successful were they in creating an EZ and realistic drum instrument with relatively low system requirements?

How EZ?

While the latest version of EZdrummer is Intel Mac-compatible, I did this review using Logic 7.1 on a Mac dual 2.7GB G5. EZdrummer installs with a simple code to response system from the Toontrack website. From there everything is EZ—the drums come up as expected and the MIDI files are simple to audition and use.

The system is simple and elegant. Once you've auditioned a groove or fill and decide to use it, you simply drag and drop it onto a sequencer track, and voila, instant groove.

You then assemble your drum track by adding on additional phrases until it's complete. (Assuming you don't want to play your own, of course.)

If you don't like a certain part of a MIDI phrase, you simply erase the offending notes. To add your own fills (though EZ comes with a huge assortment) you simple play it in off your Keyboard. If the groove needs to swing a little more or less, you can use the MIDI swing feature in your sequencer.

Each instrument in the kits auto-alternates between multiple samples to avoid the machine gun effect.

Kits

EZdrummer comes with a Pop Rock Kit and a "bonus" Cocktail Kit (unmuffled jazz). Each is less than 750MB on the hard drive and loads into about 250MB or RAM (it doesn't stream off the hard drive), which is tiny by today's multi-gigabyte standards.

These kits may be all you need, but often a plethora of jobs needs a plethora of kits. The standard Rock kit may be meaty, but maybe not enough for some serious hard core metal.

After 20 years there are still companies pushing the envelope of what drums are capable of in a computer and/or hardware environment.

So Toontracks has added three expansion kits as of this writing: Vintage Rock; Latin Percussion; and the original Drum Kit From Hell (DFH) kit, the metal-style kit that

Fig. 2: The mixer. Note the Bleed control, which simulates the mic leakage that's such an important part of a recorded drum kit.

launched the company a few years back.

As shown in Fig. 1, all these kits come with a huge assortment of MIDI grooves and fills, and all are 750MB or less in size. The original DFH came with MIDI files, but the new version greatly expands the number of grooves available.

While the drums are processed to fit certain styles, that doesn't mean you're are stuck with that drum sound. You can send each drum individually to its own output and deal with it as you would a real kit. This of course adds extra flexibility to the product.

There is also an internal mixer if you just choose to use stereo outputs (Fig. 2). The mixer deals with panning and individual levels for each drum, as well as snare bottom and overheads. There are also solo and mute buttons, along with a Bleed control to simulate the leakage between mics when drums are recorded in a studio.

Fig. 3: Clicking in the triangle at the bottom of each instrument in a kit (in this case the snare in the Drums From Hell Kit) brings up a number of alternatives.

Getting graphic

The GUI is a thing of beauty. You can hit any drum with your mouse and it will sound. Also, each drum has a button that opens up a list of alternate drums of the same ilk (see Fig. 3). If the snare drum from the currently selected kit isn't working, you simply select another from the list attached to that drum.

Each kit comes with alternate snares, kicks, cymbals, etc., so you're not just getting one kit when you use the standard kit or buy an expansion kit, but many kits in that selected genre. For example the DFH expansion kit comes with ten different snares; the pop rock kit, which comes standard with EZ Drummer, has six snares. The only limitation is taht you can't mix and match expansion kits with other kits or v.v.

A small wish is to be able to tune some of the drums and cymbals. But with so many pieces available with each kit, this shouldn't pose much of a problem.

Going loopy

One of the most powerful features of EZ drummer is the extensive detail put into the MIDI programming. The sheer quantity and easy organization is immediately apparent upon opening the program.

While each kit comes with a huge amount of MIDI phrases, the fun only begins there. Once you start buying expansion kits, all those loops are interchangeable with all the kits. Say you are using a metal kit but you want to break into a standard rock groove, you simply call up that groove from one of the rock or pop kits, drag it into your sequencer, and you are done.

I used the Cocktail kit and put a funky drum pattern from the Vintage Rock kit and you had instant '60s bugaboo vibe. The combinations are pretty much infinite. If you want to create your own MIDI grooves, you can save them to EZdrummer also.

Many people don't want to be bothered with the work needed to process drum sounds, while others relish the flexibility of a blank slate.

Latin percussion

I'm dealing with Latin Percussion separately, as it is an expansion pack but not a drum kit. The Latin Percussion expansion kit comes with a well-rounded selection of instruments.

As with the drum kits, there are a lot more sounds available under the hood, and these also can be accessed by simply clicking on the individual instruments button (conga for example) and choosing another in the basic GUI. All the percussion instruments sound great, and many of the grooves are inspirational.

It's simple to lay down a basic track and get a great groove for a cue or song. One complaint here is a lack of grooves for certain instruments like shakers. You can of course make your own grooves by playing the keys or triggering from an external controller, but I was left wanting a bigger selection for some of the percussion instruments. Hopefully more grooves will become available for download sometime in the future.

Conclusion

I almost feel it isn't fair for me to review this product. My career has moved from song production to TV, where speed is of the essence. This product targeted me perfectly.

That doesn't mean EZ Drummer can't be used for serious song production, however—it can. The sounds are excellent and the implementation is as advertised: EZ; the midi files are well done and versatile. I would have a hard time recommending it any higher.

If I had any beef with the product it would be its name. "EZdrummer" sounds like a budget product aimed at consumers, but the results are anything but that. **VI**

VI focus

 (CONTINUED FROM PAGE 31)

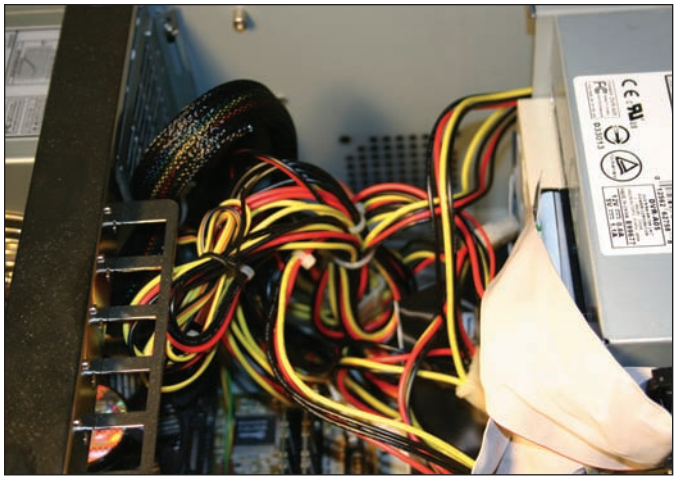


Fig 11. A wiring mess like this is not only unsightly; it also causes air turbulence noise

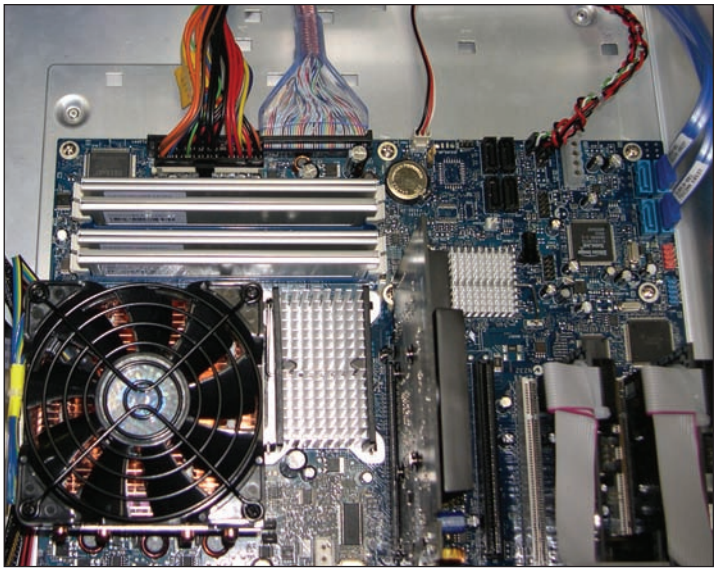


Fig 12. A properly wired computer

vents on the case from time to time.

- Make sure that all parts of the system are screwed down tight.
- Make sure that the removable sides or top of the case do not vibrate.
- Use graphics cards that are passively (no fan) cooled.

Make sure that your wiring is neat, and make judicious use of wire ties. I took a photograph of the inside of a friend's production computer (Fig 11). This haphazard wiring causes noise from air turbulence and can decrease the overall cooling ability of your system. The second photograph shows a superior job of wiring in one of my VisionDAW systems (Fig. 12).

Next issue we'll look at dB levels of the systems, several options for remote locating your computers, and complete construction information for soundproofing a portion of your studio.

Links

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Paul Gilreath has composed music for feature film, television, documentaries and video games. He is the author of the best selling book, The Guide to MIDI Orchestration, 3rd edition*, a 700-page book detailing how to achieve maximum realism when producing orchestral emulations using sampling technology. Gilreath lives in Atlanta with his wife Channie and his two children, Quintin and Birdie. More information about Gilreath and the book can be found at www.musicworks-atlanta.com.* VI

MIDI MOCKUP MICROSCOPE

(CONTINUED FROM PAGE 51)

group of French horns, it adds a little more reality.

SIPS works very well, but I think it can work even better by customizing the patches to utilize SIPS to its fullest. I also use Vienna Symphonic Library, especially the woodwinds, their performance legato stuff. They've recorded the transitions. The beauty of that is that it sounds terrific; the drawback is that you are locked into the tempo of the transition of that sample and it takes up a lot of RAM.

I do use some TKT script on some of the East West stuff and Sonic Implants quite a bit (TKT is part of the SIPS Kontakt 2 project). It's a round robin-type thing with a lot of up bow, down bow stuff for East West and Sonic Implants Symphonic Orchestra.

The up bow/down bow starts repeating after two notes. If you play a chord or two notes at a time, you'll get up bow/down bow—the same notes will be repeating and it doesn't sound that great. So I wrote a TKT script, and people can download it too; Big Bob also wrote a TKT script. I tend to use my own scripts because I know what they are doing and I can customize one for a specific patch.

There is also a patch I wrote that will tune percussion any way you want. How many times have you worked on a thing where you are using a patch and let's say you want to take an instrument and tune it down two octaves to have a really cool sound? I wrote a script that lets you choose any key, or combination of keys or range on the keyboard, and transpose it to anything you want, and save it as a preset. You can have bell sounds by taking percussion down a few octaves. You're only messing with the script, not the patch.

Back to "Escape," Example 4. The brass hits...

The James Bond-type things? I was probably using East West trumpets from the XP extension. A cool combination is the 2-trumpet round robin patch with legato, which is very good; you combine that with the new solo trumpet round robin and the new solo trumpet patch—so you have three trumpets—and when they are all playing in unison you get three trumpets, and they sound very good.

How are you building things harmonically in Example 5? You're modulating keys...

That one line is a minor third. I think I had the cello playing , the violas, I kind of went between—everybody had each section of the strings playing the melodic theme, and then I went up a whole tone. I kind of write from my head.

Sometimes if I am really at a loss, I'll sit down and figure out theoretically what can I do here to kind of go there. But usually it's not more theoretical, it's exactly what I did in this example: I have a line and then I figure out what all the other chords and notes should be doing.

So I don't let the chords dictate where I am going, I let the line dictate where I am going. VI

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random tip

Making one sequenced part rubato while other parts stay at their recorded tempo in Logic Pro

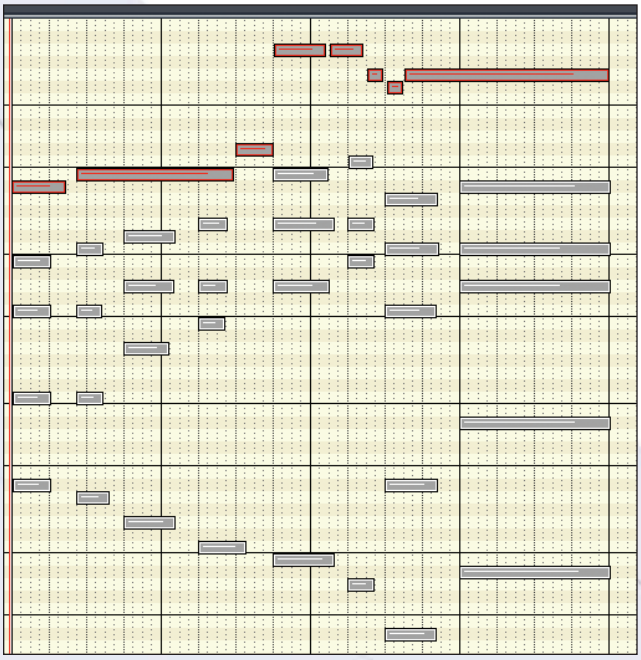


Fig. 1: Let's say you've recorded a Rhodes part (the black notes) and a string line (red notes), and the two are quantized. The Rhodes sounds right, but the strings sound totally stiff and you need them to be more rubato. You want to record some tempo changes that affect the strings but not the Rhodes. Here's how to do that.

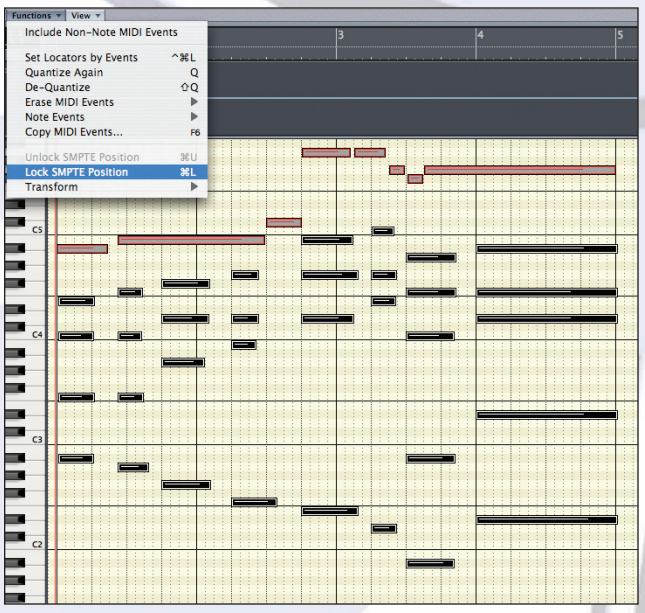


Fig. 2: Highlight the Rhodes notes only and select Lock SMPTE Position.

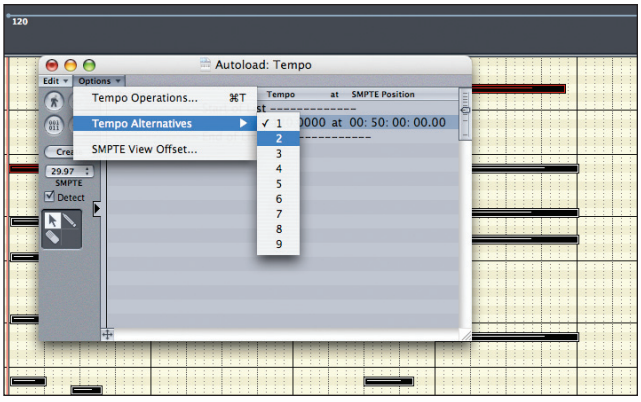


Fig. 3: Logic lets you save up to nine different tempo maps, a useful feature for many things besides this trick—such as slowing down a piece temporarily so you can play a difficult part.

Open the Tempo List window and select a new tempo alternative. The original one will be number 1.

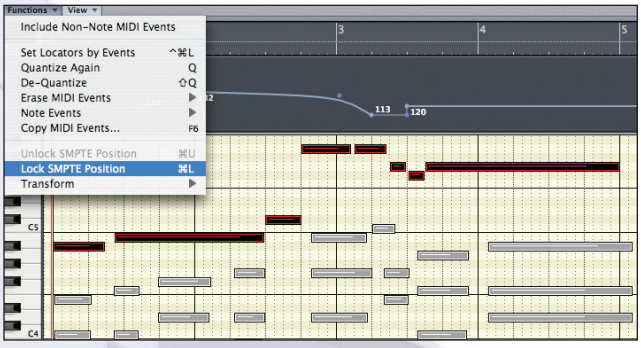


Fig. 4: Program or record the tempo changes to make the string part breathe. The string part appears to remain strictly quantized, but actually the bars and beats are moving and the Rhodes part sounds exactly the same as it did before the tempo changes. Now lock the string notes to their current SMPTE positions.

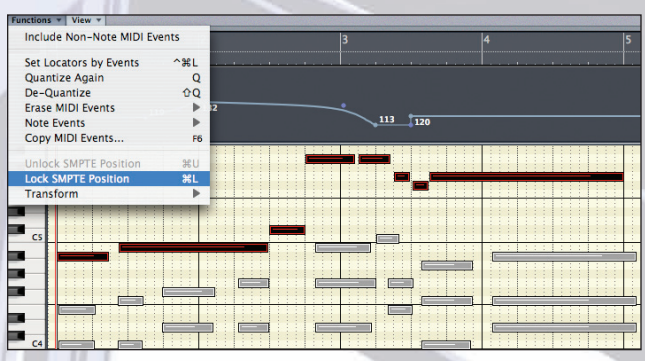


Fig. 5: When you back to Tempo Alternative 1, the original tempo map, the strings will be rubato and the original Rhodes part remains the same.

MASSIVE
(CONTINUED FROM PAGE 18)

This is where you can set the insert points for the feedback loop and two insert effects, and where you choose an oscillator to bypass the filter section. A bit of feedback and a waveshaping insert effect can create strange and unpredictable results from an otherwise tame patch.

The price of sound

Massive has exceptional sound quality in my opinion. Even the built-in effects are better than expected—the reverb is as good as some stand-alone effects plug-ins.

But great sound does require some horsepower. Many patches eat 20 to 40 percent of the CPU on the 1.73GHz Pentium M laptop used for this review, more if you hold down a lot of keys. Overloading the CPU with one instance of Massive is a distinct possibility on slower CPUs.

The developers are obviously aware of this, as they included Ultra, High, and Economy sound quality settings. That allows you to save CPU while you're working and then mix in a higher quality mode.

If you're using a fast computer or multiple computers in your rig, this isn't a serious issue. All this means is that if you're using a single-computer set-up and your machine is on the modest side of the system requirements, you won't be using Massive as a meat and potatoes instrument with ten instances in a cue—even though it does have great electric piano and oboe patches.

And with sounds this rich you don't need many voices to cut through.

Check it

Download the demo from www.Nativeinstruments.com and give this powerful, wide-ranging, interesting synth a whirl. I have no doubt you'll enjoy knocking out windows with it. **VI**

TRENDS
(CONTINUED FROM PAGE 64)

among multiple machines. That remains to be seen.

So much for memory access, but what about processing? 64-bit processing means that the processor grabs larger chunks of data every cycle. It remains to be seen whether that translates universally to greater processing power. Cakewalk reports a 15% gain in plug-in horsepower, but it's also possible that 64-bit processing could bog down some programs. Most likely that won't be the case, but none of this is a slam dunk.

Don't get depressed! 64-bit computing is going to be a step forward, and the virtually unlimited memory access it allows will solve the biggest problem with sampling technology today. Just don't expect it to change everything overnight.

Audio

Just as Apple has CoreAudio drivers built into OS X, Microsoft is incorporating drivers for audio hardware into Windows Vista. They're also including tools for music, TV, and movie audio playback; surround headphones; and some built-in DSP, mostly to deal with surround but also to do things like boost the bass on laptops.

If some of this sounds more consumer-oriented than Apple's CoreAudio has been thus far, it is. It's no secret that computer companies would like computers to be in the living room for entertainment, not just in the office. How quickly that will happen remains to be seen—every year you read predictions that this will be the year it's going to happen—but you only have to look at intelligent cell phones to see that the age of dedicated devices is nearing its end. (Prediction: this really will be the year that computers start to take the place of TiVo-type devices.)

This is no different from what's happened in our musical world: rather than having separate samplers, synths, compressors, equalizers, reverbs, drum machines, and chorus boxes, we have V.I.s. The operating systems are getting more ready than ever for this to happen with consumer electronics.

More specifically, Windows Vista has built-in bass management for multichannel surround systems. It also has room correction that will send out test tones and automatically adjust delays, frequency response, and gain to optimize the sound for the middle of your sectional sofa. If you don't have a center speaker, it will send the signal to the left and right front speakers. And so on.

Now, these tools may or may not be useful in our rigs. But their presence in Windows raises questions about the market for the music we produce. Will those of us who write music for media all have to be geared up for surround because of this? Many of us are already, of course, but will this push the rest of us over the edge?

And will having surround built into the operating system create the need for more surround versions of V.I.s and sample libraries? Native Instruments Kontakt 2 and TASCAM GigaStudio are there already, for example, but not everything is.

Legacy

Every time there's a big switch in computer software—and often hardware in order to run that software—there's a frantic flurry of software development to catch up with the changes. A lot of perfectly good equipment gets labeled "legacy" and ends up on the used market, and we upgrade yet again.

But that's the cynical way of looking at it. The truth is that these issues are just bumps in the road. Nobody knows when it will make sense to switch our music computers over to Windows Vista, but just the 64-bit memory access alone promises to make the biggest problem facing modern sample libraries a thing of the past. **VI**

What Means Vista?

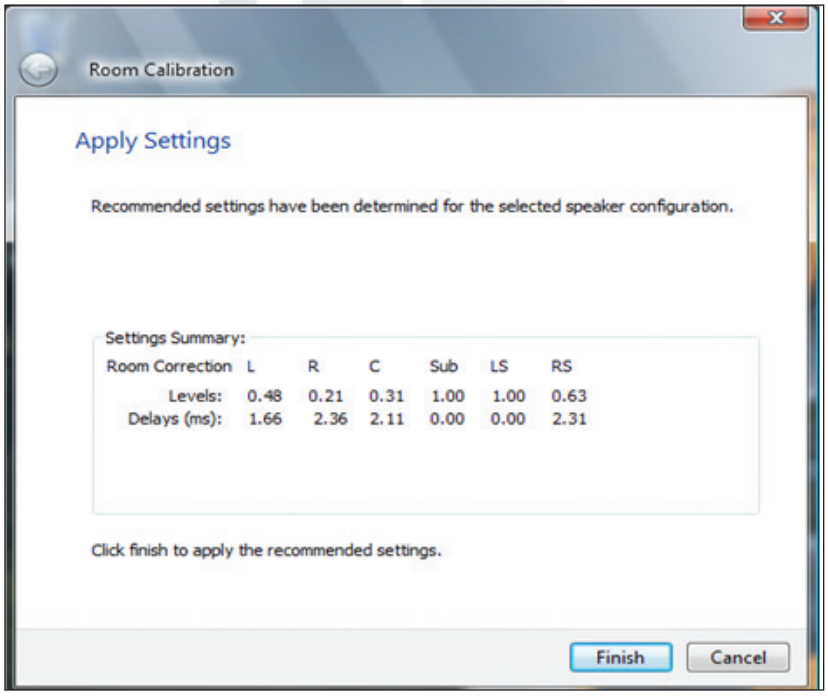
Bunking and debunking the horizon

This year we're going to see new operating systems from Microsoft and Apple. The first one due out, Windows Vista, is supposed to have been released by the time you read this. What will it mean to musicians?

There are some things we know and many more we don't, and of course there's always a good chance that interceding information will make this column will look very silly. But there are a couple of important things that are safe to ass-u-me.

64

The big thing about Windows Vista is that it will allow 64-bit programs, which means 64-bit processing and 64-bit memory access. In theory 64-bit memory access should provide a solution to the problem of huge sample libraries requiring several computers to use (since you can't load up an entire ensemble on one machine).



Our present 32-bit operating systems—whose programs should continue to work under Windows Vista—can access a theoretical maximum of 4GB of RAM and a real-world maximum somewhat under 3GB. This is because of the number of memory addresses that can be identified with 32 bits' worth of numbers.

On the other hand, a 64-bit operating system running on a computer with a 64-bit processor can access way more RAM than you or I will ever need. (Bill Gates said that about 640MB, so we're in good company if this turns out to be wrong.)

There are a couple of flies in the ointment lubricating our way to Memory Access Nirvana, however. The big one is that the software we use has to be updated, and there's no magic "64-bit" button to do that. We've heard estimates of it taking a whole man-year to rewrite a highly complicated program like a DAW for 64-bit operation.

While Cakewalk Sonar has had a 64-bit version available for a long time, and other companies have announced them, this is unlikely to happen in any widespread way next week or the week after. (That is, unless it does happen the week after next at the Winter NAMM Show and we are left looking very silly.) A number of 64-bit drivers for audio interfaces has been available for a while, though—this clearly is all on the not-too-distant horizon.

Another consideration is that the more memory a computer has, the more opportunity there is for errors to get written into that memory. Because of that, the more powerful computer systems on the market are using fancy RAM with integrated error correction.

At the moment that RAM is quite expensive—sometimes over twice the price of standard RAM—and it may be a while before it comes down, making it completely practical to load, say, 16GB of RAM in a computer. A minor side consideration is that loading 16GB of RAM takes eight times as long to load as 2GB, and there may be a point at which it makes more sense to split the loading time

(CONTINUED ON PAGE 62)

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