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**SURROUND SOUND DVD COMES TO THE MAC**

by Bob Connolly

**DVD** has now replaced VHS for home movie rentals, corporate presentations, wedding videos—it's even popular with home movie enthusiasts.

Unlike Hollywood movie titles, most corporate DVDs have stereo audio. If you've ever compared a commercial DVD title with a corporate DVD in a large home movie theatre with a good surround sound audio system, the difference between stereo and 5.1 surround sound is obvious.

The music industry has now embraced the DVD-Video format. Classic rock bands are offered in surround sound, and every day, more and more music titles are showing up at Best Buy and Future Shop featuring live performances by popular artists in 5.1 Dolby digital, the audio format most widely preferred for the surround sound experience.

Record companies are now getting out those old 24-track analog two-inch masters and transferring them to digital FireWire drives using Digidesign Pro Tools. In fact, a Mississauga, Ontario studio called Metalworks actually specializes in "baking" these old analog tapes in an oven to preserve the iron oxide on the scotch tape during transfer to digital format. Producers can walk into the studio with a two-inch tape and leave with a FireWire drive, suddenly able to remix the music in their studio of choice. If the end result was in surround sound, Pro Tools has usually been used to create the 5.1 surround sound mix.

Of course, that was before Apple decided to step into the music business with both feet.

One of the acquisitions that Apple made recently was the purchase of a German company called Emagic, makers of some pretty nifty music software for both Mac and PC called Logic Audio. After Apple became involved, the Windows version was dropped from Emagic's product offerings, but Apple has allowed the company to continue doing what it does best.

Now the two companies have co-created a killer audio application that just screams on the new Power Macintosh G5. Logic Platinum 6, Emagic's newest version, is taking the music industry by storm. Digidesign Pro Tools users are adopting this product just like Avid users have been jumping into Apple's Final Cut Pro. Why? Because Logic Audio will do almost everything Pro Tools does and more, for a fraction of the cost.

Pro Tools primarily shines as a digital audio recorder, whereas Logic Audio is also a full-blown synthesizer. You can assign 64 "Audio Instruments" that include pianos, clarinets—and a remarkable Hammond B3 organ that sounds identical to the real thing, complete with Leslie tone cabinet rotor speakers. I've heard that some professional musicians are removing the guts of their real Hammond organs and replacing them with midi keyboards and portable Macs loaded with Logic's Hammond B3 Audio Unit software. The Macintosh sound output goes directly to

the band's mixing console—and it's impossible to tell the difference, it's that good.

For audio sweetening, there are also more than 50 plug-ins for effects in Logic's software package, including various delays, reverbs, distortions, dynamics, modulation effects, BitCrusher, Auto Filter, Enveloper, Spectral Gate, Phase/Clip Distortion, Denoiser, DeEsser, Tremolo, Stereo Spread, Exciter, SubBass, Limiter, Adaptive Limiter, and Multiband Compressor. If you have a new Mac dual G5, you're really in for a treat, because the software has been optimized for 64-bit processing, allowing multiple effects to run in real time.

Logic Audio works with most hardware cards in the market—even Digidesign's—and it also makes a special portable surround sound mixing system for home studio musicians. Now anyone can mix in surround sound, using either a full-blown Pro Tools hardware system or a simple Emagic USB 2-in/6-out interface box with six powered speakers. It works perfectly well in either case.

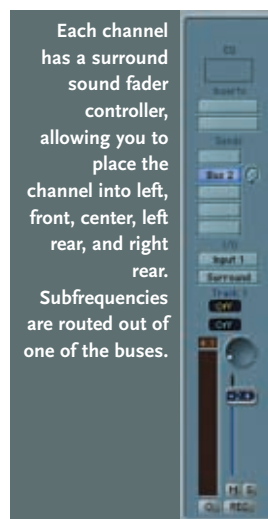
Logic Platinum 6 features:

- audio resolution up to 24-bit/96 kHz
- up to 128 stereo audio tracks (single hardware)
- up to 255 stereo audio tracks (multi hardware)
- a high-end POW-r dithering algorithm
- hardware-independent audio scrubbing
- 8-channel surround mixing in any of 12 formats
- comprehensive channel EQ with 8 bands per track
- 15 FX inserts per track, 8 effect sends per track
- audio input objects with 15 FX inserts and 8 sends
- 64 stereo buses for subgroups and FX returns
- 16 inserts per bus, 16 inserts per output object

## PLACING THE SOUND IN THE RIGHT SPACE

For the majority of our DVD projects, we prefer to put the narrator's voice in the center speaker and the music in the left and right speakers, which makes it a lot easier if you want to increase the volume of the music only. Also, because the voice is isolated in the center speaker, it's easier to understand the words. Quite often we put ambient background sound effects in the rear speakers so that you get the surround sound music experience, just like at the big movie theatres.

The process involves exporting the separate audio channels from Final Cut Pro and importing them into Logic Audio. Video can also be loaded into Logic, so that you can mix to the picture, add effects, music overdubs, and equalization, and place each track in a surround sound space.



Each channel has a surround sound fader controller, allowing you to place the channel into left, front, center, left rear, and right rear. Subfrequencies are routed out of one of the buses.



QuickTime movies can be imported into Logic Audio's software, allowing for frame-accurate music synchronization.



You can also route your tracks in surround sound format to individual outputs. Here six channels are used for 5.1 surround sound.

Once the sound levels are mixed to your liking and placed in the right surround space, you then export six separate tracks: left, center, right, left surround, right surround and sub woofer. These six tracks are then imported into Apple's A-Pack, which converts them into one 5.1 AC3 Dolby Digital track. That track is then imported into a DVD authoring system, such as Apple's new and much-improved DVD Studio Pro 2.

## DVD STUDIO PRO GETS SPRUCED-UP

For those of you who are only familiar with DVD Studio Pro 1.0, version 2 is a major facelift—in fact, you might not recognize it at all. Apple acquired a DVD authoring package called Spruce, and now DVD Studio Pro 2 is more like an advanced version of that product, with a little Studio Pro 1.0 thrown in.

The most significant difference in this upgrade is its ability to create motion menus. Typically, during the DVD authoring process, you would create your menus in Adobe After Effects and then go through a complicated process of creating masks for buttons and hot spots.

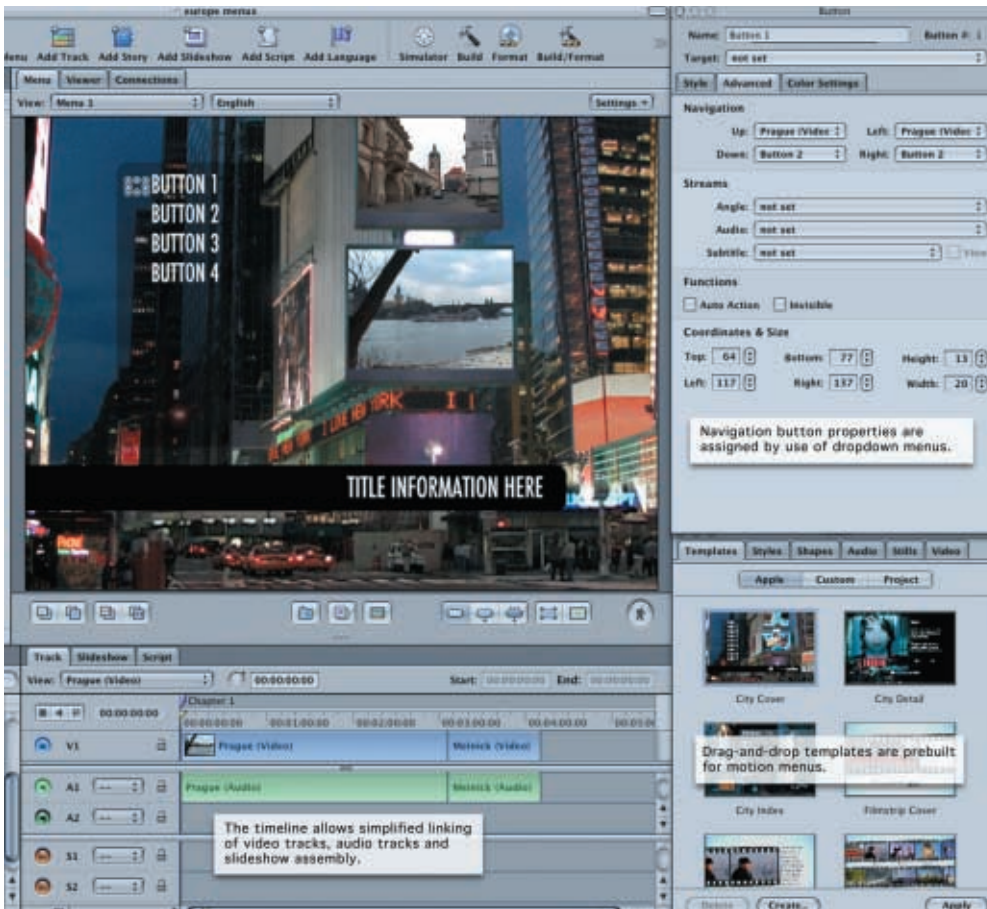
However, Apple has built into DVD Studio Pro 2.0 a version of a compositing program that allows you to drop videos, buttons and still pictures into a window and make all the interactivity at the same time, without thinking about compression, aspect ratios or difficult programming scripts. It's all drag-and-drop, with pull-down menus.

Instead of manually linking videos or several video angles with audio tracks and subtitle tracks, you can drag the videos and audio into a timeline that resembles Final Cut. You can preview your work in progress, and check the interactivity as you build the title. If you're a professional DVD producer, there are advanced interactivity controls which let you create up to 98 stories, use scripting controls for advanced playback options, define remote control functionality, create multiple language DVDs, and include DVD-ROM data in your project.

Once everything is right, select "Build and Format", and DVD Studio Pro does the rest. It takes the various data in almost any format from DV to JPEG, AIFF, AC3 audio, etc., and compresses it to MPEG-2 video and the selected audio for DVD playback—it's like iDVD on steroids.

As well, DVD Studio Pro 2 includes a world-class MPEG-2 encoder. This codec generates stunning video at lower bit rates, maximizing the length of video users can pack onto a DVD without compromising quality.

For those who need more encoding control, DVD Studio Pro 2 comes with two powerful encoding utilities—Compressor and A.Pack. Compressor provides customization and correction of compression files in real-time and lets you batch process to MPEG-2 for DVD. A.Pack encodes uncompressed audio into highly compressed Dolby digital AC-3 streams, which can then be used in DVD Studio Pro 2 for full 5.1-channel surround sound or simply as compressed 2.0 stereo tracks.



Motion Menus can now be created right in Apple's DVD Studio Pro 2 using supplied templates—or you can create your own, using drag-and-drop.

even CD distribution in stores. But Apple has recently signed on hundreds of independent record companies and started offering their songs for 99 cents each through the iTunes Music Store.

And get this—iTunes is now also available for Windows (Apple reported over a million downloads in the first four days). Many iTunes online radio stations offer commercial-free music because record companies are providing songs at no charge as a way to promote artists who would proba-

- If you're a pro DVD producer, you'll enjoy these features.
- encode with one-pass and two-pass Variable Bit Rate (VBR) encoding
  - quickly test navigation with a built-in simulator, without building a DVD
  - use analog and digital copyright management with Macrovision and CSS
  - add sophisticated interactivity with powerful scripting language
  - maintain chapter markers from Final Cut Pro, Final Cut Express and iMovie
  - output to DVD formats, DLT tape, Disk Images and more
  - add web links using DVD@ccess for Mac and Windows

### APPLE BECOMES A MAJOR MUSIC DISTRIBUTOR

So now Apple has the complete surround sound solution and the new G5 really allows Apple software to sing.

"What could be better than this? Apple has given me the power to create almost anything I want," I'm saying to myself.

But Apple hasn't stopped there. It has decided to become an online music distribution company that allows you to show the world your whole musical portfolio, if you so desire.

Thousands of bands never get a chance at radio air play or

by never get a chance to be heard on regular radio stations.

Apple's slogan "Rip Mix Burn" has now become "Pay Mix Burn." And major record companies have given it their blessing. It's now Apple Records!

Oops...I hear that there's going to be a big shootout at the OK Corral. But if Apple Computer should lose its legal battle with the Beatles' Apple Records—as it has twice before—the publicity that the lawsuit created would probably only serve to bring even more Windows users to Apple's iTunes Music Store just to see what all the fuss was about.

There are musicians who feel that iTunes is going to kill the CD. I doubt that will happen, but it will certainly have a dramatic effect on sales.

But there's a new format in town, and it's the music DVD. Music DVDs are too big to download, and with surround sound, almost impossible to steal. Apple has provided the tools to produce killer music DVDs (with copy protection). So now it's up to the music industry to adapt to the next trend, where music comes from six speakers instead of two. 🎧

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