

# Emagic Logic Audio v4.0

A new look, loads of plug-ins and 24/96 capability are some of what's included in this major upgrade. Scott Christie rings in the changes.

Logic Audio has undergone its most extensive upgrade to date and the result is Version 4.0. It features a new set of fundamentally redesigned real-time effects plug-ins, including EQs, gates, compressors, distortion, delay, modulation and reverb. High resolution 96k/24-bit audio capability is now available, as well as increased audio tracks, improved bussing architecture and effects plug-in routing. Along with the new audio features, a host of other improvements have also been implemented which improve the overall MIDI, editing and score functionality of the program. Logic Audio 4.0 also boasts a new overall design – including the streamlining and restructuring of the menu layout. Version 4.0 also represents the culmination of the Emagic Audio Engine, introduced in Version 3.7, which includes a comprehensive set of new and updated audio drivers for use with Emagic Audiowerk, ASIO, Digidesign Direct I/O, Korg 1212 and Sonorus StudI/O audio hardware integration. EASI support, Emagic's hardware engine support, is now also implemented.

A quick overview of the Logic product range begins with the entry level MicroLogic AV and becomes increasingly sophisticated through Logic Audio Silver, Logic Audio Gold and ultimately the '24-carat' Logic Audio Platinum used for this review. Logic Audio Platinum features 96k/24-bit audio, up to 64 mono tracks with one audio card (or up to 128 tracks with multiple cards), 16 internal busses, support for Digidesign TDM (ProTools III/24) and ProTools (TDM), Akai DR8/16 (Arrange Editing only), simultaneous support for three Emagic Audiowerk8 PCI cards and unlimited multiple hardware driver support. For a complete comparison of the Logic Audio range, head for <http://www.emagic.de/english/products/logicline/compare.html>

## System

In terms of system requirements, Emagic have all but given up trying to offer a straightforward recommendation as to which computer system would be most suited to running Logic Audio. Technology is simply changing too rapidly to make such a call. Suffice it to say, the demands of audio hard disk recording are such as to require the fastest CPU, largest amount of RAM, and the fastest/biggest hard drive you can afford. Slower machines should cope fine with Logic Audio's MIDI and notation capabilities, however the number of simultaneously playable audio tracks, real-time audio effects and overall processing speed of recorded material are essentially dependent on the CPU/RAM/hard drive speed/size specs.

Having said all that, the manual does however provide a rough guide to which systems they consider suitable. For the Mac platform, a G3 with 128MB RAM is recommended, while for the PC Emagic point to a Pentium 200 MMX or Pentium II, high performance SCSI Controller and 128MB RAM. A separate SCSI hard drive with a maximum 10ms average access time and a minimum data throughput of

1.5MB/s is also recommended. The prickly question of which actual platform to go with is succinctly summed up by Emagic as 'ultimately a question of religion'. Amen!

Installation is straight forward, employing a CD ROM which installs the 4.0 version of the program and all support files. A floppy disk containing the latest version updater software is then employed, i.e. 4.0 to 4.04. Owners of the new blue and white G3 Mac should note that since installation requires a floppy disk drive – deemed as an external optional extra by Apple designers – you may have to access Emagic's website at

<http://www.emagic.de/english/support/download/oldimagemac.html>, where a 'virtual' floppy disk, known as a disk image, is available for download. For a comprehensive discussion of the new G3/iMac and how they integrate with Logic Audio, head for <http://www.emagic.de/english/news/mac.html>

## Plug it in

Most of the excitement surrounding the pre-release of Version 4.0 involved the huge swag of bundled plug-ins, and, as such, was one of the first areas that I investigated for this review. I've always found reviewing software effect plug-ins, such as reverb and compression, a difficult job. After the initial 'wow isn't it great, my computer can do all this stuff' reaction, you're often left with the strong suspicion that having all this added functionality isn't quite the same as using the hardware equivalents. The makers of the software will quite rightly point out the impressive cost savings of running a dozen plug-ins bundled free with your favourite MIDI+audio application over the cost of owning a dozen dedicated hardware effects units, but there is no questioning the inherent compromise in expecting your computer to do everything that a well equipped studio can.

The good news is with processor speeds increasing, the quality of these effects has improved dramatically – even just in the past year. Furthermore, clever software manufacturers such as Emagic are writing their plug-ins to exploit the advantages of digital audio, therefore offering effects processing impossible to achieve in the analogue world.

Version 4.0 of Logic Audio comes with 24 new effects plug-ins which cover the full range to be found in hardware-based effects units, and then some. The accompanying



Logic Audio manual comes with a well written overview of the functions and application of each of these new effects. The following summary of the plug-ins includes the most commonly used and the most interesting. Naturally, Logic will still support your favourite VST or DirectX plug-ins in addition to the bundled pack.

The enchantingly named Fat EQ offers up to five fully parametric bands of equalisation. Inactive bands can be disabled individually to save on CPU resources. A combination of high/low shelving, high/low pass and fully parametric EQ is available. I found the Fat EQ plug-in easy to use and sonically satisfying in its results. It also features a meaningful graphic display of your settings. My only gripe would be that the frequency selector in all five bands is limited to 100Hz increments. Apart from the fully functional Fat EQ there are a number of more simple, single band EQ plug-ins offering band pass, shelving and parametric functionality.

PlatinumVerb is Logic Audio's top end reverb plug-in. Other less CPU hungry, and therefore lower quality, variations include the GoldVerb and SilverVerb. Typically, reverb plug-ins are the most demanding on processing power since the phenomenon of natural reverb is such a complex process. PlatinumVerb features a basic early reflection parameter section and a dual-band reverb section with crossover controls. It also has a useful early reflections/reverb balance control which when set to 100% in either direction allows you to audition either the early reflection component or the reverb component of the sound and make its settings accordingly before blending the two. The actual factory presets, of which there are only six, didn't seem to do any favours in demonstrating PlatinumVerb's potential. The main problem being an inordinately high ratio of reverb relative to the actual direct sound source. However, after some tweaking it wasn't difficult to come up with suitable reverb settings for all of my sound sources – which included solo piano, solo acoustic guitar and solo drums. A comparison with the popular Waves TrueVerb plug-in led me to the conclusion that PlatinumVerb didn't quite match Trueverb's sense of stereo space and would benefit from increased parameter functions. The results I was able to achieve with the PlatinumVerb were highly suitable for sounds as part of a mix, though it wouldn't necessarily be my first choice on a featured instrument, lead vocal or solo piece.

An innovative non-linear reverb plug-in known as Enverb is also included, which allows you to create reverb effects based on detailed control of the reverb tail's envelope. Attack, Decay, Sustain, Hold and Release controls form the basic controls for this plug-in, and as such provide a completely different approach to reverb building.

Logic Audio's Compressor features all the standard compressor controls along with a knee function which allows you to select 11 increments between hard and soft knee compression. Soft knee compression provides a more gradual transition from the 1:1 ratio below the threshold to the ratio above the threshold, resulting in a smoother sound than the instant hard knee compression. The analysis of the signal's threshold can also be determined by the plug-in in either RMS or peak mode. The RMS value is a better indication of how humans perceive loudness and therefore produces more 'musical' results. The peak value is useful when wishing to achieve a more 'brick wall' limiter effect. A useful Autogain function is available which automatically normalises the output of the compressor. The compressor plug-in sounded fine, managing to effectively control the dynamic range of

the signal with a minimum of those nasty 'pumping' or 'breathing' artefacts, even when large amounts of gain reduction were applied.

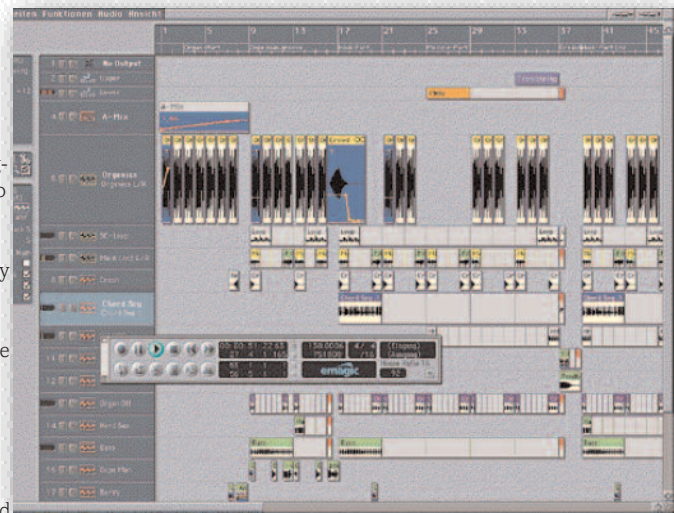
A useful feature of the Noise Gate plug-in – specific only to hard disk audio systems – is the Lookahead function. This allows the noise gate to open up slightly before a desired signal passes through the gate and is especially useful on audio material featuring extremely sensitive transients. The plug-in does this by analysing the program level ahead of time and anticipates the point at which it can open the gate before the signal actually reaches the threshold value. The Noise Gate also features a basic filter sidechain that allows you to trigger the gate off a specific frequency band of the program material. This is useful for isolating a snare drum from a kick drum, for example, since these drums usually have their frequency energies in different areas. Unfortunately you can't use other audio signals as a sidechain input, as is possible with many analogue gates.

The Pitch Shifter plug-in manages to track reasonably well, but lacks any settings to 'intelligently' harmonise to a musical scale thus making its application limited. The Ensemble plug-in is what Emagic refer to as a 'Pitch Shifter on steroids'. It consists of eight internal, modulatable pitch shifters. Two standard LFOs and one random LFO enable you to come up with fairly complex pitch modulations which conjure up a thick ensemble-type chorus effect not unlike the classic Yamaha Symphonic patch.

A couple of filter/modulation effects include the AutoFilter and Spectral Gate plug-ins. The Spectral Gate plug-in allows you to tune in on a specific bandwidth in a sound while rejecting the frequencies above and below – hence the name – and then modulate the centre frequency and actual bandwidth. The Spectral Gate makes for some great filtering effects especially on drum loops and thus wins the 'Most Time Wasted Writing a Review But Actually Just Having Fun' award.

The nifty Enveloper Plug-in allows you to dramatically adjust the envelope of any input signal. The applications for this are endless. It allows you to effectively remove the reverb from a reverb drenched audio file, and increase or reduce the attack transients of a signal – thus adding snap to underachieving drum sounds or, conversely, de-emphasising the attack of rhythmically loose playing. The Enveloper becomes a very handy tool in the familiar 'of course we should have got it right when we recorded it but what can we do about it now' dilemma familiar to all engineers.

A quick 'rest of' list includes: the Direction Mixer, useful for processing acoustic recordings which have employed the



MS microphone technique; the Distortion/Overdrive plug-ins, which do a good job of 'nasty' distortion but I don't think any tubehead guitarists are going to sell their rigs here. The Stereo Delay and Tape Delay plug-in achieve exact delay/tempo matching by enabling you to choose a note value as a delay setting which is linked to Logic Audio's internal tempo setting as determined in the transport window. The term 'Tape' in Tape Delay refers to the fact that this plug-in applies a gentle saturation distortion effect to the delayed signal along with a high frequency roll-off to emulate the old analogue tape delay sound. An Oscillator Plug-in is also included for generating those metallic ring modulation effects. A final bit of good news on plug-ins is that you can now control all parameters of a plug-in via Midi, although the manual doesn't provide a detailed list of parameters and their corresponding Midi controller number. This is an impressive suite of plug-ins, and even if a number of them won't prompt you to throw away your hardware equivalent they constitute a powerful toolbox which gets results without your eyes straying from the computer screen.

### Face Lift

An unmistakable change to Logic Audio 4.0 is the new look of the program, which I consider to be a nice touch. It incorporates modern clean graphics without burdening the CPU with over elaborate colour and 3D detail which can slow down the whole show. The new look also includes a restructured menu layout, designed to improve access to functions and simplify cross platform compatibility. The new global Options menu now makes for quick access to important settings previously buried in the Preferences and Song Settings sub menus, as well as containing all the tempo, synchronisation and marker operations.

Audio now also gets its own global menu which groups all the important audio functionality to a central menu. Access to functions such as Set Audio Record Path and Sample Rate selection – which previously required opening windows and selecting from sub menus – are now always only a mouse click and short scroll away.

The overall result of the menu restructure is a significant reduction in the number of mouse operations to get to important functions. These changes make Logic more accessible and more, well... logical to first time users who aren't familiar with the fundamental concepts, such as the Environment for example. Stalwart Logic users who employ their own virtual language of memorised keyboard shortcuts won't necessarily find Logic more suitable than before but Emagic have made a dedicated attempt to streamline the power of Logic into a friendlier experience.

Another important improvement to Logic Audio's interface is the Scroll in Play function. Scroll in Play keeps the SPL (Song Position Line) in the middle of the window while the background sequence objects scroll from right to left. The advantage is that your focus remains on the centre of the screen without losing the continuity of the waveform. In earlier versions, the SPL was continuously falling off the right edge and re-positioning itself on the left hand side of the sequence area. However, this new function does require a powerful graphics card and is therefore provided as an option to the old mode.

Other interface-based improvements include the ability to copy and paste Screensets from one location to another, which includes the ability to copy and paste between songs. Logic Audio 4.0 also has a completely new set of default key commands based on the key assignments of Logic users

around the world. Key commands are now totally customisable – this includes conventional commands such as cut, copy and paste, and all User Defined Key commands are now displayed in the corresponding menu entries.

### Midi Tracks

There's a good number of new Midi-based features. Simultaneous record on multiple Midi tracks is now available, which is activated by a new record button that appears on every Midi track in the Arrange window. When disabled, this record button also facilitates a Midi thru off option on each track. This would have come in handy recently when I was working with a multitimbral synth that didn't recognise the Local Off Midi message.

Multiple track Midi recording actually comes in two flavours – Layer and Split. Layer mode takes all incoming Midi events and sends them to all Midi tracks that have been record enabled. This enables you to quickly create layered sounds employing different synth/sampler modules and record the resulting blend, e.g. a piano blended with a choir and string section. After recording, only the selected track displays the recorded sequence. On the other tracks, aliases from the sequence on the selected track are displayed. In this way, any edits applied to the original sequence are thus applied to the aliases and all Layer tracks will remain identical.

Split mode is used to record multiple Midi sources to different tracks simultaneously. In this way a number of different Midi instrumentalists can be recorded onto separate tracks.

Other improvements worthy of squeezing into this review include: individual zoom on all Midi and audio tracks in the arrange window; a Pencil Tool in the Sample Editor which allows redraw of waveform to remove clicks pops and clipping etc; Hyperdraw, Logic Audio's graphics-based automation editor, now retains settings across newly created regions when snipping; plug-ins are now available across the stereo bus; Windows version now uses the Autoload song and automatically creates backup copies; Scissor and Glue tools are now available in the score; and, finally, several new parameters make it possible to now create and print the full score and all parts of a piece within one song file without having to change any settings.

### Lab report

Logic Audio has always been a great program in terms of functionality and the ability to customise the interface to your own mode of creativity. Version 4.0 follows this up with enough new goodies to make it an essential update for all current users. The new audio plug-ins represent a marked improvement in terms of audio quality and interface design and the new menu structure combined with other interface improvements make it an even more desirable option for anyone about to get into the world of Midi+audio production software.



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Phone: +61 (0)3 9480 5988 Fax: +61 (0)3 9484 6708  
Emagic on WWW: 'www.emagic.de'

### Price

• Logic Audio Platinum: \$1499; Gold: \$999; Silver: \$499;  
Micrologic AV \$279.