

# Waves APA44-M

**It's one of the most exciting product releases of recent times and it aims to change the way we look at the computer/plug-ins issue forever. ROB JAMES gets his audio processing accelerated.**



**IT'S SO OBVIOUS** it makes you wonder why it has taken so long. Question: Do you own a comprehensive collection of Waves plug-ins that you really like? Are you sick to death of the constant juggling to keep everything working within the confines of native processing capacity or even, in the case of Pro Tools, TDM DSP processing capacity? If the answer is 'yes' then one or more dedicated Waves hardware Audio Processing Accelerators, or APAs, might just be the prescription you need. It's an accelerator, but not a DSP accelerator as we know them. The APAs are computers specifically set up for the sole function of accelerating Waves plug-ins. They connect to the host PC or Mac via gigabit Ethernet. You want even more power? Easy, connect more APAs. Up to eight can be connected to a single host computer with a gigabit switch.

The prescription comes in two strengths, the 1U rackmounting APA32, which is deemed most suitable for mounting in a machine room due to noise, and the UK£1531 (+VAT) APA44-M I had for review. The latter can be used standalone or rackmounted, singly or in pairs. Ironically the smaller unit is also the more powerful with around 30% more grunt than the APA32.

A quick physical examination reveals an Intel based motherboard with several expansion connectors, 512Mb of RAM on a standard DDR 333 DIM module with a spare DIM slot. Unless I'm very much mistaken, what we have here is a PC running an embedded operating system (probably Linux) set up for one dedicated purpose. This is a very sensible approach to the problem. DSP chip horsepower has not increased at anything like the same rate as general-purpose processors. No doubt the Waves Native plug-in code is relatively easy, and therefore cheap, to port to a remotely connected PC platform. Why reinvent the wheel when it is already the optimum shape and does an excellent job?

In the box you will find the APA44-M, an in-line power supply with US and UK power cords, a Cat 6 crossover cable and a very thin manual. As an introductory offer Waves is giving away licences for the excellent IR-L and Q-Clone plug-ins. IR-L is especially desirable since, although the L stands for light, the reverb quality is identical to its senior sibling and it can use the same incomparable library of impulse samples. Only the degree of manual tweakability is reduced which, in any case, can be a blessing when you are in a hurry. Unless you can obtain a CD-ROM from your dealer, these freebies and NetShell-enabled versions of the plug-in packs you already have licences for will need to be downloaded from the Waves website.

The set-up program uninstalls the existing package

and requires a restart before installing the new version. It would be wise to leave some time for the whole install operation. It is not something to be attempted just before a session. This is especially relevant since the APA44-M is a very portable device and invites moving from computer to computer.

Waves makes the point that, although these accelerators may well work through an existing 1000Mbps gigabit switch, it is highly desirable to use a dedicated connection for a single unit -- 1000Mbps gigabit for an APA44-M and 100Mbps minimum for an APA32. For connecting multiple APAs to a single computer a gigabit switch is required and connecting multiple workstations to one or more APAs will require a managed gigabit switch capable of supporting V-LAN.

I wish I could report that installation was completely drama free. However, in my case it really wasn't. For a start, the requirement for a dedicated gigabit Ethernet connection meant dashing off to the local emporium to pick up a card. This because, on the PC platform, the APA currently only works with either Cubase SX 3.0.1, Nuendo 3.0.1 or Pro Tools 6.9, and the machine running Nuendo 3 didn't have a gigabit card. The Belkin card was easy to install and worked first time. Unfortunately the same cannot be said for the APA. Waves uses an application called NetShell to communicate between the host DAW and the APA. This is installed along with the necessary updated plug-ins (V5.2) while the APA is connected but powered off. In theory NetShell should configure the gigabit connection, etc. to suit. In practice, one of the essential Windows services didn't install on the first attempt and another decided it wasn't going to start automatically. It took Waves' excellent support some while on the phone to sort it out. Since the fix, it has performed quite happily. In use, the unit is quiet, thanks to a single cooling fan, but not that quiet. In fact it was significantly noisier than the PC it was sitting on top of and the other two running at the same time.

The recommended sequences for starting up an APA-equipped system is to boot the PC or Mac, launch the NetShell, power up the APA, which takes a minute or so to boot, and lastly launch the DAW application. Lo and behold, there in the effects list will be Waves plug-ins with Net after the name. If these are instantiated, they will use the APA.

Only V5.X plug-ins that have been 'net-enabled'

**Currently, the following plug-ins are net enabled: IR-1 Parametric Convolution Reverb V2; IR-L; IR-360 Surround Parametric Convolution Reverb (Mac); Renaissance Reverb; Renaissance Channel (with external sidechain disabled); L3 Multimaximizer; L3 Ultramaximizer; C4 Multiband Parametric Processor; Linear Phase Equalizer; Linear Phase Multiband; SoundShifter; Morphoder; TransX (Multi); and Q-Clone.**

**Currently supported PC applications: Pro Tools 6.9; Cubase SX 3.0.1; Nuendo 3.0.1**

**Currently supported Mac applications: Pro Tools 6.7 and 6.9; Cubase SX 3.0.2; Nuendo 3.0.2; Logic Pro 7.1; Digital Performer 4.52 and 4.6**



can take advantage of the APA's extra horsepower. This could be an issue for users of V4.X and earlier processors since there is a not inconsiderable cost associated with upgrading to V5.X, especially if you have TDM.

Many people seem to get very exercised about the exact number of instantiations you can expect from a given hardware/software combination. Here, playing the numbers game is not especially meaningful since all the plug-ins use at least some host CPU power as well as the APA and some processors, notably Q-Clone, use a significant amount of host CPU power in addition to the APA. So, depending on the plug-ins you use, the host system will have an effect on the number possible and a considerable effect on the quantity of specific plug-in types.

In general, I could see no reason to dispute Waves' own conservative figures and these are quite impressive enough in their own right. For example, 20 instantiations of the C4 or 13 of the Renaissance Reverb. Six IR-1s or 22 TransX (Multi)s (*Yup, that's going some alright. Ed*). For real-world use with a mixed bag of effects the NetShell has a small application, NetShell Monitor, that gives a good indication of how close to the limits you really are. Three horizontal bars show the percentage of CPU, Memory and Network capacity in use at any given moment. Display updates are not instantaneous, but more than adequate for the purpose. An LED indicates audio drop-outs.

Sending audio to the APA, processing it and sending it back takes a finite amount of time. NetShell latency is also affected by the size of the Host Hardware Buffer. NetShell latency must be manually set in the Monitor window to be at least twice the maximum buffer size set in the host application or sound card software. Thus a latency of 1024 samples equates to a maximum buffer size of 512 samples.

Putting all this into context, the APA system confers a number of direct and indirect benefits. Apart from the obvious load reduction on the CPU or Digidesign hardware, the ability to share multiple remote sited units between workstations without re-plugging is highly attractive. Neither the APA units nor NetShell need authorisation. All that is required is that every workstation must have authorised copies of the plug-ins you wish to use. No PCI slots or FireWire connections are used (assuming you already have a spare gigabit Ethernet port) saving these for the plethora of other devices we all seem to need in this age of sound/picture convergence. There is also the promise of exciting new processors to come that would have previously been impossible to implement due to processing power constraints.

There are several known issues with the current APA implementation. These are clearly signposted in the documentation and on the Waves website – for example, there is no automation of VST plug-ins. Workstation support is currently rather limited, especially on the PC platform, but will quickly widen, as will the number of net-enabled plug-ins.

The APA promise, even in this first iteration, is a lot of bang for your bucks. All of a sudden, more power for native workstation users of Waves doesn't mean rushing out to buy the latest computer with all the upheaval that involves. For other Waves users more power no longer means adding another Digidesign DSP card at considerable cost. The native host with added power proposition is beginning to look highly attractive from a financial standpoint. Not only that, this power is available to a variety of applications. Highly desirable if, like me, you use

one workstation package for some tasks and another for others.

Notwithstanding the teething troubles I experienced and the list of 'known issues', early adopters will be in on the ground floor of something rather special.

Here is the first glimpse of a Utopian dream many of us have been discussing for years. Namely processing, control, storage and I-O all connected via gigabit (or faster) Ethernet with TC/IP. Some of the rest of this vision is still a considerable way off, format and protocol agnostic devices for a start. OK, so we're not quite there yet, but Waves is certainly striking the matches to light the approach flares on the runway. ■

**PROS**

Scaleable processing power; cost effective if you already have V5 plug-ins; dawn of a new era?

**CONS**

Few applications supported and restricted range of enabled plug-ins at present; several outstanding issues.

**Contact**

**WAVES, ISRAEL:**

Website: [www.waves.com](http://www.waves.com)

UK, Sonic Distribution: +44 1582 470260