Xenon Systems Nitro AX2

REVIEW BY BERNARD MEADE

The first thing to notice about the new dual processor Opteron workstation from Xenon is that it feels like a very serious machine. It's a black beauty with a racing stripe along the top and enough green light flooding out the front to make it look like something out of *The Fast and the Furious.*

If you are interested in moving polygons or crunching digital video, then this machine should be high on your shopping list.

The test machine arrived fully configured with Windows XP (32-bit) installed. One of the most interesting aspects of such a system is the new 64-bit architecture. However, it is also something that is quite hard to properly benchmark.

Microsoft has released a beta version of Windows XP, which is quite stable and provides a robust Win32 emulator. This allows 32-bit applications to run quite happily with the 64-bit operating system, but doesn't really provide much in the way of revealing the true benefits of the improved architecture. Almost all of my testing had to be performed with the 32-bit version of Windows XP.

For those not familiar with PCmark04, the score is made up from a combination of several tests designed to provide a standard to which various machine configurations can be compared. This system managed a score of 6759, which would put it roughly on a par with a dual Pentium IV 3.6GHz, also with 2GB memory. The top performer is a dual Xeon running at 3.9GHz with a score of 7703, so we are not too far off the pace.

While this system isn't aimed at the gamer market, it is still useful to see how it handles realtime rendering, which is so important to 3D modellers and animators. Using Futuremark's 3Dmark03, the system returned a respectable 3Dmark03 score of 10512. This test is really focussed on the graphics card and puts the NVIDIA Quadro FX 4000 just under ATI's gaming flagship, the Radeon X800 Pro. For a workhorse, this card still knows how to have a little fun.

Inside the AX2 with plenty of room for expansion.

Have a bet each way with AMD's 64-bit capable Opteron CPU.

The next test was a little more straightforward and certainly more fun. It was time to blow stuff up and what better (and more quasi-standard benchmarking) way than with ID Software's Quake III: Arena.

Running at 1280x1024 resolution, with 32-bit colours and textures and trilinear texture filtering, the system was able to easily maintain over 90 frames per second, even in the midst of the heaviest carnage (usually with my demise soon after).

Not surprisingly, I got exactly the same result when testing this game with the 64-bit version of Windows XP. I guess I'll have to wait until a 64-bit version of Quake comes out to see any true performance increases relating to the architecture.

The software used to capture the frame rate was the shareware Fraps, which can be freely downloaded at http://www.fraps.com.

As much as I enjoy games and playing with benchmarking software, this system is designed for work. I installed Lightwave 7.5c and put it to work.

It has been my experience in the past that all too often the reality does not live up to the hype. I am very happy to say that this was not the case with this system. I have been using Lightwave for several years and this was the most enjoyable experience I have had. Everything worked smoothly and quickly. Interactively, the system responded extremely well, never once missing a beat, even on very large scenes.

Playback was flawless, file operations were extremely quick, but the most impressive thing was the ability to manipulate complex scenes without clogging the system. Clearly this configuration was designed to handle lots of polygons quickly, For a modeller, this is immensely important.

THE SYSTEM

> Dual AMD Opteron 2.4GHz processors;
> 1024KB ECC synchronous write-back L2 on-board cache;
> 2GB RAM (with each processor able to have up to 8GB dedicated);
> 3x70GB S-ATA hard drives (one primary drive and two in a stripe array);
> 256MB NVIDIA Quadro FX 4000.

While the Quadro FX 4000 handles the interactive experience, it has nothing to do with the rendering of the images, though some new 3D applications are able to utilise the GPU for rendering.

Lightwave, however, relies solely on the CPU to crunch the numbers when it comes to producing computer-generated imagery. SiSoft Sandra 04 reports that these CPUs can perform over 7500 million floating point operations per second (FLOPS) (Whetstone FPU test). Comparing how quickly this system can render a scene to another similarly configured machine will simply come down to how many operations can be performed per second.

The Opteron was decidedly quicker than both a Pentium IV 3.2 GHz and an AMD Athlon 64 FX, running at 2.4GHz, though not by as large a margin. When all is said and done though, not much beats a render farm, unless it's a bigger farm.

Another function this machine excels at is digital video editing and compositing. With Firewire onboard, Adobe Premiere Pro performed all the usual video capture and deck control functions without a complaint.

The high-speed stripe array is perfect for digital video, managing a very healthy 105MB/s. I would have like to have tested the system with Pinnacle Edition as it can utilise the GPU to take some of the processing load away from the CPUs.

Such a configuration should enable numerous transitions and filters to be executed in realtime, with very quick rendering of anything else. Composited material would also make excellent use of the ample RAM and dual processors, along with the extra grunt of the Quadro FX 4000.

On a practical level, there are a few extra anecdotal points to add. First, with a standard configuration, this machine booted quite quickly, going from a cold start through logon to a ready desktop in less than 40 seconds. Shutdown after closing all applications took less than 10 seconds.

Second, the system is very heavy. It is not something you would want to be carting around too often. I expect some of the extra "finishing touches", especially the bright green lights, are designed to grab the attention of the reviewers and make us feel like the system is that little bit more special.

For my own part, the "Wow; it's pretty!" factor wore off very quickly and I switched the lights off. Those pretty green lights aren't necessarily "green" if you take my environment-friendly meaning. Honestly, I think the people that will be impressed by such a gimmick are unlikely to be the target customers of this machine.

A strange little gremlin appeared when performing the 3Dmark03 benchmark with Windows XP 64-bit. While most of the benchmark performed as expected (though slower without the fully certified drivers) one of the game tests produced some very odd effects.

The Troll's Lair test has a warrior with a glowing sword as she attacks the brutish trolls in their lair. In 32-bit WinXP, this worked perfectly, but in the 64-bit version, the particle system used with the glow effect seemed to flicker unpredictably around the lair. This is most likely a driver issue but it may appear in other similar games or environments.

If I had any doubt about how powerful this machine was, just listening to it certainly made me feel that something very important must be happening.

It is possible that all six fans are orientated in different directions to keep the machine from blowing itself over. Without a doubt, this is the noisiest machine I have worked with.

However, I have been assured that this is simply because this is a pre-production model and the system sensing software hasn't been fully implemented. As such, the cooling system simply runs flat out. Interestingly, closing the case didn't reduce the sound as much as I hoped.

Finally, I had a few issues when testing with the 64-bit Windows XP. I was unable to install the sentinel drivers for the Lightwave copy protection dongle, which are essential for its operation.

At the moment, no 64-bit equivalent exists, though I am sure this will be remedied soon. A similar problem exists with 3ds max and the C-Dilla license manager. Also, DirectX 9.0b is yet to have a 64-bit equivalent. This problem also prevented Adobe Premiere Pro from working.

IN SUMMARY

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AVAILABILITY > www.xenon.com.au
PRICE > $7486 (prices start from $3165 inc. GST)
VERDICT > Overall, I thought this machine was a joy to work with. I wasn't able to properly benchmark the system running a 64-bit operating system such as Windows XP 64-bit or Fedora Core 2, but I can say that both OSs did perform very well on this system. The performance of applications using the 32-bit emulator under Windows XP 64-bit was everything one would expect, except of course with the obvious problems of some drivers. While this would probably prevent me from moving to the 64-bit Windows just now, it wouldn't stop me from using the machine, as the 32-bit performance was excellent. I am looking forward to seeing more 64 bit applications in the near future but I am happy to see that I won't be required to upgrade all my software just to work on a 64-bit system. This is perhaps the best argument for purchasing an AMD 64 system, be it an Opteron or an Athlon 64 FX. As more 64-bit software is released, you will be well positioned to incorporate it into your work environment without having to go through the headache of a wholesale change. No doubt this is the gentlest way to slide into the next generation of computing.