

Re: Intel details future Larrabee graphics chip

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- *From:* Martin Brown <|||newspam|||@nezumi.demon.co.uk>
 - *Date:* Mon, 11 Aug 2008 12:17:07 +0100
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John Larkin wrote:

On Fri, 08 Aug 2008 18:12:14 +0100, Martin Brown
<|||newspam|||@nezumi.demon.co.uk> wrote:

John Larkin wrote:

So what do you think OS's will look like 10 years from now,
when even
home computers run on chips with 100's of cores? Still one
gigantic
VMS/Mach/NT descendent running on one CPU, thrashing
and piping

A lot of IO is concentrated by the bridge hardware these days. And serial
ports have had moderate to large FIFOs for about a decade.

XP runs quite happily on my dual core. Vista runs less happily on my new
Toshiba portable and I will never recommend using it to anyone.

And those other cores stay idle unless you play a game?

I can see a case for cores allocated to processes with highest demand for
resources, but I do not believe it makes any sense to have one thread per core
with a properly designed secure operating system.

Umm, excuse me, what do those words mean, "properly designed secure
operating system" ?

They mean one that uses the security features properly that already exist in many CPU architectures (and on
properly designed hardware that is not vulnerable to tricks to obtain engineering diagnostic mode or executing

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bogus partially decoded non-existent instructions to trap and claim ring0 status). But alas the hardware isn't perfect either eg.

http://msowww.anu.edu.au/~peterson/pentium_lock.htm

That's what my wife asked me once when I was stupid enough to use the phrase "too much garlic."

In exactly the same sense as you claim for your magical hardware architecture a properly designed secure OS would be well secure.

There's nothing magical about lots of cores. Everybody is doing it.

Everybody is doing lots of cores, but very few are advocating the wasteful and naive usage strategy that you seem to want.

I could be persuaded that Mickeysoft leave 'Doze vulnerable to avoid putting the AV people out of business (that would be anti-competitive).

As James says, don't assume malice when incompetence will do.

I suspect you are right. But the conspiracy theory is more fun!

Things will never change? We'll always use 1980's OS architectures?

Sadly I suspect that might well be the case until some compelling reason to change comes along. Do you not remember how long the delay was before there were 32bit consumer grade OS's for the early 386 PCs?

What may well happen is that, once hundred-core CPUs are out in the wild, some small group of Linux kernel jocks will spin a version that *can* have file systems, drivers, stacks, and apps assignable to various CPUs. Then it would just be a configuration thing to assign one cpu to run just the OS. That would be dynamite for server apps.

Then Microsoft will scramble to catch up, as usual.

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A decent OS properly configured doesn't crash all that often (even when doing software development). My XP box crashes maybe once every few months, my old Win98 box slightly more often. These days it needs a good kick to free the disk stiction if I switch it on. Win95 crashed at least daily. But NT3.51 was a gem, and my OS/2 box only ever crashed about once a year (perhaps I remember them through slightly rose tinted glasses).

My new Vista on a Toshiba portable crashes (or rather its keyboard and on/off switch locks up) every time I leave leave it on and unattended for long enough that the power managment engages. Sadly it doesn't have a reset switch (my bad). I would not use Vista from choice but customers want me to :(

I do agree with you that consumer OS's have become far too big and clunky with bloatware and not enough emphasis on security. Where we differ is on what to do about it.

Regards,

Martin Brown

** Posted from <http://www.teranews.com> **