

Re: Intel details future Larrabee graphics chip

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- *From:* John Larkin <jjlarkin@xx>
 - *Date:* Thu, 07 Aug 2008 08:39:21 -0700
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On Thu, 07 Aug 2008 14:51:57 GMT, Jan Panteltje
<pNaonStpealmtje@xxxxxxxx> wrote:

On a sunny day (Thu, 07 Aug 2008 07:08:52 -0700) it happened John Larkin
<jjlarkin@xx> wrote in
<d10m94d7etb6sfcem3hmdl3hk8qnels3kg@xxxxxxxx>:

Been there – done that :-)

That is precisely how the early SMP systems worked, and it works for dinky little SMP systems of 4–8 cores. But the kernel becomes the bottleneck for many workloads even on those, and it doesn't scale to large numbers of cores. So you HAVE to multi-thread the kernel.

Why? All it has to do is grant run permissions and look at the big picture. It certainly wouldn't do I/O or networking or file management. If memory allocation becomes a burden, it can set up four (or fourteen) memory-allocation cores and let them do the crunching. Why multi-thread *anything* when hundreds or thousands of CPUs are available?

Using multicore properly will require undoing about 60 years of thinking, 60 years of believing that CPUs are expensive.

John

Ah, and this all reminds me about when 'object oriented programming' was going to change everything. It did lead to such language disasters as C++ (and of course MS went for it), where the compiler writers at one time did not even know how to implement things.

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Now the next big thing is 'think an object for every core' LOL.

Days of future wasted.

All the little things have to communicate and deliver data at the right time to the right place.

Sounds a bit like Intel made a bigger version of Cell.

And Cell is a beast to program (for optimum speed).

Then stop thinking about optimum speed. Start thinking about a computer system that doesn't crash, can't get viruses or trojans, is easy to understand and use, that not even a rogue device driver can bring down.

Think about how to manage a chip with 1024 CPUs. Hurry, because it will be reality soon. We have two choices: make existing OS's unspeakably more tangled, or start over and do something simple.

Speed will be a side effect, almost by accident.

John

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