

Re: Simulating an assembler?

Source: <http://sci.tech-archive.net/Archive/sci.nanotech/2005-08/msg00026.html>

- *From:* John.S.Novak@xxxxxxxxx, III <jsn@xxxxxxxxx>
 - *Date:* Sun, 21 Aug 2005 06:46:19 -0000
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In article <11gfks04eoi25d5@xxxxxxxxxxxxxxxxxxxx>,
jdREMOVE@xxxxxxxxxxxxxxxxxxxx says...

- > John.S.Novak@xxxxxxxxx, III <jsn@xxxxxxxxx> writes:
- > <SNIP>
- >> Well, in all seriousness... Yes, I did neglect to mention that
- >> supercomputers run a hell of a lot faster than laptop computers. Blue
- >> Gene/L clocks in at 135 Tflops, or $135 \cdot 10^{12}$ floating point operations
- >> per second. A laptop would be, what, 5 Gflops? (I'm semi-guessing from
- >> unreliable sources.) So we're actually talking about a speedup of about
- >> 25,000. Bear in mind, though, that programming Blue Gene/L is nothing
- >> like programming your laptop in C++ or Haskell, and the comparison here
- >> is very crude.

- > I saw that when I checked the "Top 500" site prior to posting (should
- > have checked what you actually wrote instead...).

No problem, but I'm operating under the assumption that our thousands of readers are hanging on our every word, here.

- > Agreed, and this would appear to make the full scale simulations
- > feasible and useful except for:
- >
- >> Third, though, I really don't know what the scaling factor in software
- >> like this would be, if we take number of atoms as a measure of the input
- >> size. Does the software run-time scale linearly with input size?
- >> Quadratically? Exponentially? What sorts of approximations does one
- >> need to make in order to get back to linear from wherever it is?
- >
- > I imagine this will be critical to the simulation and design of
- > assemblers. It is a similar situation to the electronic simulators you
- > mentioned. Hopefully it will be possible to leave out e.g. the
- > coupling between sufficiently distant parts of the assembler. This
- > could make the run time linear past a certain size.
- >
- > Perhaps the detailed simulations of small parts can be used to derive
- > design rules which, if followed, simplify the simulation.

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In principle, yes. But in principle, the answer is also yes for microwave system level design where, despite the best efforts of a lot of smart people for many years under the lure of considerable economic advantage, the question is still resoundingly Open and Unsolved. Or at least it was back a few months ago when I was at the Microwave Symposium listening to the CAD people give presentations whose main thrusts were elaborate shrugs about the subsystem/system interface problems.

Now, as an aside, I should update some of my skepticism about the simulation and software in question. As luck would have it, my copy of *_Nanofuture_* by our own former moderator J. Storrs Hall arrived in the mail today. (I'll review it publicly later; that's why I bought it.) Splashed across the bottom of the dust jacket is a blazon informing us that JoSH is the chief scientist for Nanorex, Inc.

"Wait," I thought. "That sounds familiar. Isn't that.... why yes it **is** the company we're talking about." Now, I don't know JoSH personally, but I do know he's no fool, and I do know he's published in some areas I find interesting— reversible computation, nanotechnology, and agoric algorithms among them. This puts my mind somewhat at ease.

However, what I do not understand is why some this work, if it is good work, is not being published. I can think of several highly reputable journals to which I would submit a write-up of this work, if I had done it. This lack of publication has confused me for some time, not just as regards this issue, but in general. Does anyone know if I'm looking in the wrong places? Are articles submitted but refused? Is there no interest in publishing?

—

John S. Novak, III
The Humblest Man On The Net

• *References:*

- ◆ ***Simulating an assembler?***
◇ *From:* Bob Larson
- ◆ ***Re: Simulating an assembler?***
◇ *From:* John . S . Novak
- ◆ ***Re: Simulating an assembler?***
◇ *From:* John Devereux
- ◆ ***Re: Simulating an assembler?***
◇ *From:* Steve O'Hara-Smith
- ◆ ***Re: Simulating an assembler?***
◇ *From:* John Devereux
- ◆ ***Re: Simulating an assembler?***
◇ *From:* John . S . Novak
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◇ *From:* John Devereux

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