Subject: Re: IDL and Macs. Speed is not only about squared roots
Posted by Maarten[1] on Fri, 14 Jul 2006 11:37:48 GMT
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jgc wrote:
[. . .]
> However there is more in life than squared roots, so I was dissapointed
> to see that a complex program, involving large array manipulation,
> input and output, and loops reduced to a minimum, took almost double
> the time in the Mac than in the windows PC. This is a energy balance
> model for snow ablation over a glacier in the Alps
> (http://www.arolla.ethz.ch/snowdem.html).
>
> One summer simulation took 22 minutes on IDL 6.0 in the windows PC 1.4
> GHz and 42 minutes on the Mac Intel 2.16 GHz with IDL 6.2. Almost
> double in a much more powerful computer! IDL 6.3 seems slightly
> better but still slower (I'm waiting for the full license to test it).

6.2 is PPC, and therefore runs under emulation. You'll need 6.3/Mac OS X/Intel to be able to judge this at all. Rosetta rears its head again.

> I did additional texts such as repeatig more complex processes (my
> shading algorithm, http://www.ittvis.com/codebank/search.asp?FID=141).
> Here the mac outperforms the pc. Thus, obviously there must be just a
> few inefficient processess for the Mac, which slow down the wole thing.

Given the fact that you didn't use the real native thing, I think you're jumping to conclusions. If you're sure that you use the real (native) thing, then post some more results. If you're curious where the time is spent in your program, I suggest you use the profiler (search this newsgroup, of just use the IDL manual). Highly insightful, and allows you to focus on the slow parts when optimizing.

Maarten

Subject: Re: IDL and Macs. Speed is not only about squared roots
Posted by jgc on Fri, 14 Jul 2006 13:02:03 GMT
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> Given the fact that you didn't use the real native thing, I think
> you're jumping to conclusions.

WHO is jumping to conclusions??

You fail to read properly my email.

I will re-explain myself:

PC windows is slower than Mac in simple operations and even in
repetitive more complex operations

On a long complex program the same PCW outperforms Macs. Therefore is
obvious that macs are wasting time on other grounds. Where? that was
my question.

what conclusions am I jumping to, I would like to know.

Yours,
jgc

Subject: Re: IDL and Macs. Speed is not only about squared roots
Posted by jgc on Fri, 14 Jul 2006 13:26:22 GMT
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Hi,

> You mention input and output. What exactly do you mean?

You described it:

> If you're chucking lots of data to and from the disk I'd expect a
> laptop to be slower than a desktop regardless of cpu speed, as the
> disks are slower in laptops generally (and Mac Minis too).

You are right, sorry I forgot to mention that both are laptops, that's
why I was surprised to see such a big difference

> The fairest test is going to be running the same program on an Intel
> OS X machine, and the same machine booted into Windows.

I might search for one, and let you know the results.

Cheers,

Javier

> --
> Edd

Subject: Re: IDL and Macs. Speed is not only about squared roots

Posted by Maarten[1] on Fri, 14 Jul 2006 14:18:18 GMT
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jgc wrote:
>> Given the fact that you didn't use the real native thing, I think
>> you're jumping to conclusions.
>
> WHO is jumping to conclusions??
>
> You fail to read properly my email.

I doubt it, I just re-read it. Here is the important bit from your message:

> One summer simulation took 22 minutes on IDL 6.0 in the windows PC 1.4
> GHz and 42 minutes on the Mac Intel 2.16 GHz with IDL 6.2.

> From the ITTVIS/RSI/IDL production or marketing department, the message was:

> "I am pleased to announce the release of IDL 6.3 for Mac OS X on Intel.
> This new IDL release runs as a native application on all Mac Intel
> supported machines and offers significant performance benefits. [. . .]"

Yes, any IDL version for Mac OS X /before/ IDL 6.3 is a PowerPC only application, and your message clearly states that you used version 6.2 on Mac Intel. This is a version that runs under Rosetta (an emulated PowerPC). This extra overhead causes a slowdown. Mind you, for emulation it is impressively fast.

> I will re-explain myself:
>
> PC windows is slower than Mac in simple operations and even in
> repetitive more complex operations

And this is no surprise, and was in fact known for IDL version 6.2, especially on a Mac Intel machine.

> On a long complex program the same PCW outperforms Macs. Therefore is
> obvious that macs are wasting time on other grounds. Where? that was
> my question.

In Rosetta. IDL 6.2 for Mac OS X is not compiled for an Intel processor.

> what conclusions am I jumping to, I would like to know.

That 6.2 should run as fast as a Windows/Linux version on Intel processors. It isn't expected to do that. 6.3 for Mac OS X/Intel should

change that. Test on that version, and report again.

The other remark remains: use a profiler to figure out where your
bottlenckes live.

Maarten

Subject: Re: IDL and Macs. Speed is not only about squared roots
Posted by Karl Schultz on Fri, 14 Jul 2006 15:20:46 GMT
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On Fri, 14 Jul 2006 06:26:22 -0700, jgc wrote:

> Hi,
>
>> You mention input and output. What exactly do you mean?
>
> You described it:
>
>> If you're chucking lots of data to and from the disk I'd expect a
>> laptop to be slower than a desktop regardless of cpu speed, as the
>> disks are slower in laptops generally (and Mac Minis too).
>
> You are right, sorry I forgot to mention that both are laptops, that's
> why I was surprised to see such a big difference

Disk drives can influence results like these in surprising ways. See:

http://www.macintouch.com/imacintel/bench.html

There is a discussion there about how using a Western Digital drive vs a
Maxtor resulted in some significant differences in a benchmark. If the
test being discussed here does significant disk I/O, the disk itself may
account for the observations.

It gets really hard to talk about benchmarks without getting into a lot of
detail. Sometimes I wish TimeTest3 didn't have the disk test in it. Yes,
I know you can turn it off with an option, but few people do. And I know
it is there to try to simulate a more realistic test environment. But
sometimes a huge difference in the disk subsystem can overwhelm the CPU
results and then when you get an answer you don't expect, you have to
drill down to the next level of detail and find out which tests in TT3 are
slower or faster, and so on.

>> The fairest test is going to be running the same program on an Intel OS
>> X machine, and the same machine booted into Windows.

>
> I might search for one, and let you know the results.

I'd love to see those results too. We have a machine here that could boot both. I even remembered to repartition the hard drive to make room :-). But I just have not gotten around to installing Windows yet.

Karl
