Subject: Re: IDL platform difference
Posted by Christophe Marque on Tue, 30 Mar 1999 08:00:00 GMT
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Peter Mason wrote:

>
> I think that the differences seen here are due to differences in FPU
> architecture (even though all these platforms store the numbers in IEEE
> format *in memory*). The Intel x86 has 80-bit floating-point registers. I
> don't know what mac hardware you're using, but I'd bet that it's different.
> From what I recall, the Alpha is less than 80 bits. (I think you get what
> you ask for on Alpha? - viz. 32-bits for single precision.) So results for
> an operation as simple as a single subtraction or addition can differ
> noticeably, even in double precision. Even a half-decent compiler will keep
> some operands in registers for a while (at least sometimes), so these
> differences can easily build up. (Well, there's a compiler option to force
> them out to memory straight away, but I don't think IDL is compiled like
> this.) So given the nature of the beast, it's risky to rely on *exact*
> floating-point numbers, especially across platforms and/or with algorithms
> that push the precision.
>
> Peter Mason

The problem seems to be more general: we upgraded from IDL5.0 to IDL5.2 (for the UNIx Platform). Numerical results are different for IDL 5.2 and IDL5.0 on the same platform. These new results are closer to WINDOWS results(5.0).
When we use IDL 5.2(windows) with double floats we obtain the same results on all IDL5.2 platforms.
Does someone else encounter the same troubles in upgrading from 5.0 to 5.2?
Thank you
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Christophe Marque