
Subject: Re: IDL FFT vs C benchmark?

Posted by [Liam E. Gumley](#) on Fri, 04 Feb 2000 08:00:00 GMT

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Myron Brown wrote:

> Hi. Has anybody done any benchmarking of IDL's
> FFT routines? They seem pretty fast, actually. I'm
> wondering how they compare to efficient C code.
> Perhaps someone has looked at fftpack or other
> efficient implementations of the FFT in C and compared
> them?

Check out

http://airs2.ssec.wisc.edu/~paulv/fft/fft_comparison.html

You might need to run the benchmarks on your platform. As I recall, IDL performed comparably to the FORTRAN version from Numerical Recipes.

If you have the energy, I'd be interested to see a comparison of IDL and FFTW

<http://www.fftw.org/>

Cheers,

Liam.

<http://cimss.ssec.wisc.edu/~gumley>

Subject: Re: IDL FFT vs C benchmark?

Posted by [David McClain](#) on Mon, 07 Feb 2000 08:00:00 GMT

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Actually, the IDL routines are pretty slow by comparison... More than two years ago I investigated their performance compared to the Intel Math Kernel Library and found that unlike the expected $2N \log_2 N$ for an $N \times N$ square image 2-D FFT, the IDL routines scaled as $(N \log_2 N)^2$ which implies a tree search on every butterfly operation. This appalling behavior was pointed out the RSI and they furnished the header comments from a Fortran reference that they used for their implementation. It appears that they sacrificed speed for the sake of arbitrary dimension FFT's. The Intel routines are strictly power of 2 but so what. I would rather have an interpolated transform to a power of 2 in size at expected speeds than to sacrifice performance due to poor scaling of the original problem.

We now use the Intel MKL routines wrapped in a multithreaded DLL to maximize parallel performance of FFT's. The speedup is remarkable indeed. On our old 4-processor Pentium Pro machine we reached speeds of 75 MButterflies/sec. Our newer multiprocessors exceed that by another factor of 2-5. By comparison,

we never saw the RSI routines exceed 7-10 MButterflys/sec.

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Tucson, AZ

Myron Brown <Myron.Brown@jhuapl.edu> wrote in message
news:87engh\$1a\$1@houston.jhuapl.edu...

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> them?

>

> Anyone have any idea?

>

> Thanks.

>

> Myron Brown

> Myron.Brown@jhuapl.edu

> JHU Applied Physics Laboratory

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