
Subject: Re: Platform recommendation/tradeoffs?
Posted by [foresto](#) on Fri, 14 Apr 1995 07:00:00 GMT
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In article <3mhc42\$6lt@mozo.cc.purdue.edu>, smithjp@sage.cc.purdue.edu (Joseph Smith) writes:

|> I am about to order some flavor of IDL (Mac or Unix) and
|> I'm wondering if anyone can help me gauge just how much performance
|> I loose by getting the Mac product. (This saves me enough money
|> to buy a Q630 cpu)
|>
|> I have a SG Iris Indigo with lots of memory and some disk space
|> that I could be using for IDL, or I could put it on the aforementioned
|> Q630. If intense image processing were among my requirements it would
|> be a pretty easy decision, but the data that I'll be working on is
|> basically about 16 or 32 128x128 matrices - not too big of a problem
|> from a graphic standpoint (I suppose I would rarely need to look at
|> more than 1 128x128 image at a time, for instance)
|>
|> This problem has a lot of number crunching - 128x128 non linear
|> least squares fits of at least 4 parameters per fit.
|>
|> Any comments? Any experience using IDL on a 68040?
|>

I ran a small testbench between a SPARC20, a PowerMac and a Quadra. The test included computing a Fast Fourier Transform on a 1024x1024 float array, and 1000 times computing a 1024 FFT. Here are the results:

Machine	FFT 1024x1024	1000 FFT 1024
Sparc 20	8.5s	3.4s
PowerMac 7100/66	14.6s	7.4s
Centris (68040@25MHz + FPU)	39.8s	33.4s

A few comments:

1- Take it for what it's worth. It's only a ****vague**** indicator of raw processing power. I does not tell anything about disk I/O, where the Unix machine outperforms the Mac several times. The Mac OS file manager is notoriously slow (it is still emulated), but this should improve in the future version of the system to be delivered in 1 year (does anyone have precisions or more quantitative information on this?)

2- The Mac and PowerMac are running demo versions of IDL (which refuses to run the built-in testbench (run in 39s by the Sparc20): I don't know why this feature has been inhibited on demo versions btw).

The PowerMac is running "native" code, however it's not that much faster than

the Centris. I suspect most of the "native" code is actually still emulated. On FPU intensive operations a PowerMac running real native code is usually about 8 times faster than a 25MHz Quadra. All machines here were running IDL 3.6 with sufficient memory (>25Mb) for the test.

3- Notice how the ratio of the times needed to perform the two test benches changes with the processor. Does anybody have a clue?

Also, I should say that the "look and feel" of IDL for the Mac is surprising to say the least: buttons do not have the standard Mac appearance, windows are most often not resizable, etc... Clearly IDL is not a Mac application, it's an application from the mainframe world that has been ported to the Mac, with minimal changes. On a 32768 color monitor, I was not able to get allocate 256 colors for IDL while keeping 3D-looking system windows in the background. One can only hope that most of these non-Mac quirks will disappear with version 4.0. Does anyone know how IDL 4.0 for the Mac will look like? Will it be any faster than 3.6 on PowerPC machines?

Another Mac-related question: does anybody know if it's possible to produce "real color" pictures (from green-red-blue frames for example) on a Mac with a 12 bit (or more) color monitor?

My conclusion: if you are doing only data crunching, use few widget applications (which look ugly on the Mac, what an irony!), and do not want to spend too much money, then probably your best deal would be to buy a PowerPC Mac 6100/66. I would strongly discourage buying a Quadra, even if that means saving a few hundred bucks. IDL and the MacOS are going to run faster on the Power Macs as more and more of the code runs native, while it might be very well possible that RSI will discontinue IDL for 680x0 CPUs in a few years. If your application has intensive file I/O, then you'd better stay with a Unix machine. To give an order of magnitude, loading a 256x256x10 data cube is unpractically long on the Mac for the moment (maybe 1min or more, against about 10-15s on the Sparc20).

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