Subject: A few IDL benchmarck results
Posted by K. Bowman on Thu, 18 Oct 2001 17:53:23 GMT
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Here are a few results from an IDL code I use for benchmarks. It is a medium-sized code (~2000 lines altogether). It does no graphics. It does a fair amount of I/O (netCDF), which uses ~10% of the cpu time. It typically uses ~100 MB of memory, so it is well outside of cache sizes. The bulk of the computational time is spent doing interpolation (indirect indexing of arrays and vectorized multiplication), so it does not make very efficient use of caches. There are no FOR loops in the computational part of the code. It is entirely single-precision.

System	Clock	CPU	OS version	Time (s)
Alpha DS20	667 MHz	21264	Tru64 UNIX V5.0A (Rev. 1094)	37
Powermac G4	867 Mhz	PPC G4	Mac OS 9.2 under Mac OS X	58
Powermac G4	500 MHz	PPC G4	Mac OS 9.1	77
Powerbook G4	400 Mhz	PPC G4	Mac OS 9.1	90
Alpha 500au		21164?	Digital Unix V4.0 878	108
SGI O2000	180 MHz?		IRIX 6.5 IP27	136
SGI O200	180 MHz?		IRIX 6.5 IP27	150
SGI O2			IRIX 6.3 IP32	328

Sorry that I don't have all the specs. Some of these machines are so old I don't remember.

All the calculations are single-threaded. I'm hopoing to re-run them soon with IDL 5.5 and multi-threading turned on.

We have some 1.7 GHz DP Pentium boxes running Linux. I'll add some numbers when our sysadmin gets IDL installed.

The PowerMac looks very good in comparison to the much more expensive Alpha DS20. I was looking forward to a dual processor PowerMac G4 for about 20% of the cost of the DS20. (NB: due to single-precision Altivec unit, double-precision codes would not do nearly as well on the Mac.)

Ken

Subject: Re: A few IDL benchmarck results - question
Posted by Robert Stockwell on Sun, 21 Oct 2001 18:20:11 GMT
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Interesting.
I can also post some numbers from the different computers I use.

But I have a question.
I have a laptop with 1.2 Ghz Pentium, 512M ram running win2000.
I compared it to an Athlon 1.4 ghz , 512M ram desktop running Redhat 7.0.

Both run IDL 5.4, and execute identical code. No graphics, other than printing a line about every 5 seconds. It is all floating point calculations.
Disk access neglibable, and entire process takes about 80 M of ram.

The weird thing is that my 1.2G laptop is a little quicker than the 1.4G desktop,
in spite of the fact that my sys guy guaranteed that the athlon is screaming fast
on FP operations (faster than a 1.8Ghz pentium).
An iteration on the 1.2G takes 24 minutes, on the 1.4G it takes 27 minutes.
I was expecting the 1.4G to take about 14 minutes (having been told how fast the athlon is as compared to a pentium).

Also, time_test2 takes 1.6 seconds on the 1.2Ghz laptop,
and a little over two full seconds on the 1.4Ghz desktop.

So here's the question, is IDL and/or win2000 optimized for a pentium chip? Why is it so fast?

I do know that the IDLDE is way way better on win2000 than on linux, so are there compiler optimizations in IDL that only exist on win2000?

Cheers,
bob

PS I don't know if this is relevant, but on the 1.4Ghz linuz box, I pull IDL over
from another computer to run it on mine. I can't see how that makes a difference
though since it should be sitting in ram.

K. Bowman <k-bowman@null.tamu.edu> wrote in message news:181020011253237910%k-bowman@null.tamu.edu...
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