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