Subject: ***IDL Speed Survey (IDLSPEC) Results!!!
Posted by J.D. Smith on Wed, 15 Apr 1998 07:00:00 GMT
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IDLers:

I apologize for the delay, but the results from the speed survey are finally in. The sorted files and an explanation file can be found at:

ftp://iras2.tn.cornell.edu/pub/jdsmith/

There were 42 entries, from older 486's to a 12 processor SGI Power Challenge. Unfortunately, since this test started quite informally, the design and entry restrictions left something to be desired. As you may recall, I did not specify as one of the entry items the type of hard drive or other output device being employed. As a result, my confidence in the I/O portion of the SPEC is quite low, and I explicitly removed it from the calculational performance sort.

The approximate breakdown of machines is as follows:

~10 Windows 486 or greater Class Machines
7 PowerMacintosh PPC (G3/604(e)/603e)
7 Linux Pentium or Greater Class machines
6 Sun Sparc/UltraSparc Machines
4 Dec Alpha Workstations
3 SGI IRIX Machines (1-12 processors)
1 VAX Station
1 IBM PPC AIX Machine
1 IBM RS6000 AIX Machine

NOTE: IF YOU DO NOT FIND A MACHINE YOU SUBMITTED LISTED, IT IS LIKELY DUE TO AN INCORRECT SUBMISSION. IF YOU WANT TO BE INCLUDED IN THE RESULTS, READ THE EXPLANATION FILE AT THE ABOVE URL AND RESUBMIT USING THE ENTRY FORM GIVEN.

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And now, without further adieu, a summary of the results:

Calculational:
As I mentioned, I removed the I/O performance from this sort, and sorted on the average of the remaining arithmetic and geometric means. A not-too-surprising and solid first place went to the Digital Workstation 500au, whose results were submitted by s.v.h.haugan@astro.uio.no. A surprising second, however, went to the PowerWave 604/132 -- a PowerComputing product, I believe, upgraded to a 300MHz 1:1 1Mb backside cache PowerPC 750 (G3), and running MacOS, submitted by pford@bcm.tmc.edu (Patrick Ford, MD). Sun UltraSparcs, Pentium II

machines, Dec Alpha-Stations, and PowerMac G3's all followed reasonably close behind.

The multi-processor machines suffered, since IDL is not multi-threaded on any architecture I know of. However, Joe Harrington, a local Linux guru and builder of multi-processor Pentium boxes, did demonstrate the superior capability of his dual Pentium-II machine to me by running concurrently two sessions of IDL each running time_test2. As he expected, both sets of tests ran in parallel about 1.75 times as fast as when run one at a time. However, since this is not a normal mode of operating IDL, I entered only his single-session results.

As far as cross-platform performance, there is only slight evidence that, on dual-boot Linux/Windows machines, the Windows version is faster. Of course, this may have been caused by different loads on each OS at the time the test was run, and the result was not overwhelmingly significant.

To relieve those of you who did not place near the top of the list, the last-placed machine was the one I worked on up until last year.

Graphics:

There was a wide distribution of graphics performance among the various entries. A Dell Pentium 133 contributed by Med Bennett <mbennett@indra.com> took the lead, clearly demonstrating that video hardware dominates this test. Notable average performers were the Macintoshes, whose top contenders seemed to lag somewhat behind the top PC's. Traditionally unix workstations were spread throughout the rankings. Surprisingly, the much ballyhooed Sun Creator 3-D graphics system was unable to top a standard PC video card, although two Creator systems were in the top 5.

The cross-platform test cited in the previous example gave an almost 2 to 1 edge to Linux in the graphics tests, but the machine is a laptop, so it's hard to say whether this performance would carry over to the desktop realm.

I/O:

I have the least confidence in the results of this test, since I did not request information on the hard drive or other output device being accessed, and since I fear some entrants accidentally let the I/O test be performed to a network or removeable drive. For this reason I removed the I/O from the general calculational sort.

The traditional workstations showed their clear edge in this category, with the top 8 positions going to SGI, Sun and Dec Alpha machines. Pentium Class machines followed behind them, and Macintoshes were generally near the bottom of the list (which is surprising, since most Mac's have SCSI i/o buses, and most PC's use IDE, a slower technology).

While I do not have great faith in the significance of these results, it does seem that this is one area where RSI could put some effort into

cross-platform performance boosts, especially with respect to its MacOS offering (which may be influenced by remaining 680x0 emulated code in the MacOS file subsystems -- not RSI's fault at all).

I hope this survey has proved informative. I welcome all comments and suggestions. If you are unable to retrieve the listings, contact me and I'll attempt to arrange alternate means of access.

JD

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