Subject: IDL Benchmark Anomaly
Posted by MindSpring User on Thu, 11 Nov 1999 08:00:00 GMT
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Greetings,

I saw the IDL benchmark tests and couldn't resist a run through of my 233 Mhz PII laptop
vs my Dual Xeon Linux box. The results were much like I expected.

In TIME_TEST3

Xeon: 7.06824=Total Time, 0.25336439=Geometric mean, 22 tests.
laptop: 28.4500=Total Time, 0.87814925=Geometric mean, 22 tests.

In disc access:

Xeon: 0.346815 1 Write and read 512 by 512 byte array 40 times.
laptop:1.21000 1 Write and read 512 by 512 byte array 40 times.

But in the graphics test the laptop killed the Xeon even though the Xeon has a 32 Mb
state of the art video card (Nvidia TNT). Any ideas why? I would have expected it to win this
by two to one not lose it. I'm sure the result is valid as I could visibly see a difference in the
draw speeds. Has anyone else seen this? Do I need to tune IDL on linux or my X-Server?

Xeon: 58.8926=Total Time, 1.7327737=Geometric mean, 8 tests.
laptop:21.2100=Total Time, 2.0917758=Geometric mean, 8 tests.

Full tests below.

******** TESTS ********
Running Tests, Please Standby...

% Compiled module: TIME_TEST3.
|TIME_TEST3 performance for IDL 5.2.1L:
| OS_FAMILY=unix, OS=linux, ARCH=x86
| Thu Nov 11 14:18:27 1999

```
       1     0.141545 Empty For loop, 2000000 times
       2     0.151196 Call empty procedure (1 param) 100000 times
       3     0.181190 Add 200000 integer scalars and store
       4     0.171662 50000 scalar loops each of 5 ops, 2 =, 1 if)
       5     0.108775 Mult 512 by 512 byte by constant and store, 30
times
       6     0.873211 Shift 512 by 512 byte and store, 300 times
       7     0.361537 Add constant to 512x512 byte array, 100 times
       8     0.341331 Add two 512 by 512 byte arrays and store, 80 times
       9     0.347781 Mult 512 by 512 floating by constant, 30 times
      10     0.643307 Shift 512 x 512 array, 60 times
      11     0.568903 Add two 512 by 512 floating images, 40 times
      12     0.185209 Generate 1000000 random numbers
      13     0.176392 Invert a 192^2 random matrix
      14    0.0710169 LU Decomposition of a 192^2 random matrix
      15     0.180727 Transpose 384^2 byte, FOR loops
      16     0.264680 Transpose 384^2 byte, row and column ops x 10
      17      1.01350 Transpose 384^2 byte, TRANSPOSE function x 100
      18     0.195215 Log of 100000 numbers, FOR loop
      19     0.375858 Log of 100000 numbers, vector ops 10 times
      20     0.369850 131072 point forward plus inverse FFT
      21     0.240890 Smooth 512 by 512 byte array, 5x5 boxcar, 10 times
      22     0.104464 Smooth 512 by 512 floating array, 5x5 boxcar, 5
times
                    Skipped read/write test
     7.06824=Total Time,       0.25336439=Geometric mean,      22
tests.
% Compiled module: GRAPHICS_TIMES3.
% Compiled module: DIST.
|GRAPHICS_TIMES3 performance for IDL 5.2.1L:
|       OS_FAMILY=unix, OS=linux, ARCH=x86
|       Thu Nov 11 14:18:34 1999
       1      7.15077 Simple plot, 30 times
       2      9.06600 1000 vectors x 100
       3      37.8072 Polygon filling
       4      2.64451 Display 512 x 512 image, 10 times
       5     0.705706 Surface 128x128, 2 times
       6      1.05937 Shaded surface 128x128, 2 times
       7     0.418945 Hershey strings X500
       8    0.0400330 Hardware font strings X1000
      58.8926=Total Time,        1.7327737=Geometric mean,       8
tests.
|I/O performance
% Compiled module: FILEPATH.
    0.346815       1 Write and read 512 by 512 byte array 40 times.

__IS2R+
Thu Nov 11 14:19:34 1999
```

x86:linux:unix:5.2.1L:Aug 2 1999
TrueColor 24
Dell Inspiron Xeon
550
1000
32
Linux RH 6.0
     321284   253364
    7361572   1732774
     346815
    1761436
__IS2R-   :w

************************* Laptop Starts Here
****

   Welcome to IDLSPEC II. For best results, quit all other
   running programs before continuing.

******** SYSTEM DESCRIPTION ********
Please answer a few questions concerning your system. If you don't
know the answer or to skip a question, just hit return.

Computer's Make and Processor Type (not speed): DEC HiNote Ultra 2000
PII
Processor Speed, in MHZ (for more processors use, e.g., 4x500): 233
Amount of RAM, in MB: 144
Video Hardware: 4
Any other OS/System Info: Laptop 4Mb Video

******** REVIEW DESCRIPTION ********
  Make+Processor: DEC HiNote Ultra 2000 PII
  Speed: 233 MHz
  Ram: 144 MB
  Video Hardware: 4
  Other Info: Laptop 4Mb Video

Is this information correct? [Y]/N Y

********* CURRENT DIRECTORY ********
===>C:\RSI\IDL52
If this is not on a fast local drive (e.g. it's over the network)
or is not write accessible, enter another test directory.
(Maybe try C:\) [C:\RSI\IDL52]:

******** TESTS ********

Running Tests, Please Standby...

% Compiled module: TIME_TEST3.
|TIME_TEST3 performance for IDL 5.2.1:
| OS_FAMILY=Windows, OS=Win32, ARCH=x86
| Thu Nov 11 16:29:06 1999
  1 0.550000 Empty For loop, 2000000 times
  2 0.280000 Call empty procedure (1 param) 100000 times
  3 0.270000 Add 200000 integer scalars and store
  4 0.220000 50000 scalar loops each of 5 ops, 2 =, 1 if)
  5 0.770000 Mult 512 by 512 byte by constant and store, 30 times
  6   5.33000 Shift 512 by 512 byte and store, 300 times
  7   2.58000 Add constant to 512x512 byte array, 100 times
  8   2.30000 Add two 512 by 512 byte arrays and store, 80 times
  9   1.54000 Mult 512 by 512 floating by constant, 30 times
 10   3.18000 Shift 512 x 512 array, 60 times
 11   2.64000 Add two 512 by 512 floating images, 40 times
 12 0.440000 Generate 1000000 random numbers
 13 0.880000 Invert a 192^2 random matrix
 14 0.710000 LU Decomposition of a 192^2 random matrix
 15 0.380000 Transpose 384^2 byte, FOR loops
 16 0.820000 Transpose 384^2 byte, row and column ops x 10
 17   1.49000 Transpose 384^2 byte, TRANSPOSE function x 100
 18 0.330000 Log of 100000 numbers, FOR loop
 19 0.770000 Log of 100000 numbers, vector ops 10 times
 20   1.59000 131072 point forward plus inverse FFT
 21 0.990000 Smooth 512 by 512 byte array, 5x5 boxcar, 10 times
 22 0.390000 Smooth 512 by 512 floating array, 5x5 boxcar, 5 times
            Skipped read/write test
 28.4500=Total Time, 0.87814925=Geometric mean, 22 tests.
% Compiled module: GRAPHICS_TIMES3.
% Compiled module: DIST.
|GRAPHICS_TIMES3 performance for IDL 5.2.1:
| OS_FAMILY=Windows, OS=Win32, ARCH=x86
| Thu Nov 11 16:29:35 1999
  1 1.10000 Simple plot, 30 times
  2 3.02000 1000 vectors x 100
  3 6.70000 Polygon filling
  4 2.20000 Display 512 x 512 image, 10 times
  5 4.01000 Surface 128x128, 2 times
  6 1.43000 Shaded surface 128x128, 2 times
  7 2.14000 Hershey strings X500
  8 0.610000 Hardware font strings X1000
 21.2100=Total Time, 2.0917758=Geometric mean, 8 tests.

|I/O performance
% Compiled module: FILEPATH.
     1.21000   1 Write and read 512 by 512 byte array 40 times.

To enter this result, email the following text to:

        idlspec@astro.cornell.edu

Be sure to include all text between the lines of +'s
 +++ +++
__IS2R+
Thu Nov 11 16:29:58 1999
x86:Win32:Windows:5.2.1:Jun 4 1999
TrueColor 16
DEC HiNote Ultra 2000 PII
233
144
4
Laptop 4Mb Video
     1293182   878149
     2651250   2091776
     1210000
     6419264
__IS2R-

Subject: Re: IDL Benchmark Anomaly
Posted by J.D. Smith on Mon, 15 Nov 1999 08:00:00 GMT
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16-bit has strange and interesting properties in IDL. Try again with 24-bit, or
8-bit, if you haven't the memory (though 4 should do).

JD

P.S. My laptop beat my desktop machine on graphics too. Sometimes the newer
mobile chipsets with less memory can compete with older cards with more,
depending on the operations. I'd suspect if RSI had included a 3-D component to
its graphics test, the desktop machine's extra memory would have overwhelmed the
laptop.

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P.P.S. Looking for more entrants to the 2nd generation IDL speed survey!!!!!

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Visit:

http://www.astro.cornell.edu/idlspec/is2.html
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