Subject: Re: Computing Speed
Posted by J.D. Smith on Mon, 23 Feb 1998 08:00:00 GMT
View Forum Message <> Reply to Message

There is a built-in speed spec for IDL, called time_test.

Just

.run time_test

and then

time_test2 (newer version which scales to the high-end better).

I get, on my 166Mhz Pentium Linux box:

```
|TIME_TEST2 performance for IDL 5.0.3:
|       OS_FAMILY=unix, OS=linux, ARCH=x86
|       Mon Feb 23 12:32:07 1998
      1      1.45600 Empty For loop,     2000000 times
      2      1.37400 Call empty procedure (1 param) 100,000 times
      3     0.542000 Add 100,000 integer scalars and store
      4     0.615000 25,000 scalar loops each of 5 ops, 2 =, 1 if)
      5     0.303000 Mult 512 by 512 byte by constant and store, 10
times
      6      1.04900 Shift 512 by 512 byte and store, 100 times
      7     0.956000 Add constant to 512 x 512 byte array and store, 50
times
      8     0.794000 Add two 512 by 512 byte images and store, 30 times
      9      1.22300 Mult 512 by 512 floating by constant and store, 30
times
     10      1.18100 Add constant to 512 x 512 floating and store, 40
times
     11      2.29200 Add two 512 by 512 floating images and store, 30
times
     12     0.257000 Generate 225000 random numbers
     13     0.708000 Invert a 150 by 150 random matrix
     14     0.400000 LU Decomposition of a 150 by 150 random matrix
     15     0.846000 Transpose 256 x 256 byte, FOR loops
     16     0.618000 Transpose 256 x 256 byte, row and column ops x 10
     17    0.0420001 Transpose 256 x 256 byte, TRANSPOSE function x 10
     18      1.99800 Log of 100,000 numbers, FOR loop
     19    0.0950000 Log of 100,000 numbers, vector ops
     20      1.99700       131072 point forward plus inverse FFT
     21      1.58600 Smooth 512 by 512 byte array, 5x5 boxcar, 10 times
     22     0.230000 Smooth 512 by 512 floating array, 5x5 boxcar, 2
times
     23      1.06900 Write and read 512 by 512 byte array x 20
```

21.6310=Total Time, 0.67674329=Geometric mean, 23 tests.

In addition, you can try graphics_times2 to see how fast display is. I get

```
|GRAPHICS_TIMES2 performance for IDL 5.0.3:
|       OS_FAMILY=unix, OS=linux, ARCH=x86
|       Mon Feb 23 12:33:06 1998
       1     0.213000 Simple plot, 10 times
       2     0.648000 1000 vectors x 100
       3      1.28900 Polygon filling
       4     0.998000 Display 512 x 512 image, 10 times
     3.14800=Total Time,       0.64913418=Geometric mean,       4 tests.
```

And for our ancient SPARC IPX, I get:

```
|TIME_TEST2 performance for IDL 5.0:
|       OS_FAMILY=unix, OS=sunos, ARCH=sparc
|       Mon Feb 23 12:33:04 1998
       1      7.87000 Empty For loop,     2000000 times
       2      4.13100 Call empty procedure (1 param) 100,000 times
       3      2.89100 Add 100,000 integer scalars and store
       4      2.85200 25,000 scalar loops each of 5 ops, 2 =, 1 if)
       5      2.84500 Mult 512 by 512 byte by constant and store, 10 times
       6      3.65100 Shift 512 by 512 byte and store, 100 times
       7      5.61000 Add constant to 512 x 512 byte array and store, 50 times
       8      3.94400 Add two 512 by 512 byte images and store, 30 times
       9      4.41800 Mult 512 by 512 floating by constant and store, 30 times
      10      3.17900 Add constant to 512 x 512 floating and store, 40 times
      11      6.58900 Add two 512 by 512 floating images and store, 30 times
      12      1.98200 Generate 225000 random numbers
      13      2.37200 Invert a 150 by 150 random matrix
      14      1.25800 LU Decomposition of a 150 by 150 random matrix
      15      3.62300 Transpose 256 x 256 byte, FOR loops
      16      2.38700 Transpose 256 x 256 byte, row and column ops x 10
      17     0.263000 Transpose 256 x 256 byte, TRANSPOSE function x 10
      18      7.20700 Log of 100,000 numbers, FOR loop
      19     0.861000 Log of 100,000 numbers, vector ops
      20      4.82200       131072 point forward plus inverse FFT
      21      4.16000 Smooth 512 by 512 byte array, 5x5 boxcar, 10 times
      22      1.10000 Smooth 512 by 512 floating array, 5x5 boxcar, 2
```

times
      23   4.96800 Write and read 512 by 512 byte array x 20
      82.9830=Total Time,   2.9239724=Geometric mean,   23
tests.

and

|GRAPHICS_TIMES2 performance for IDL 5.0:
| OS_FAMILY=unix, OS=sunos, ARCH=sparc
| Mon Feb 23 12:35:34 1998
       1   7.99500 Simple plot, 10 times
       2   2.21100 1000 vectors x 100
       3   2.07900 Polygon filling
       4   6.79300 Display 512 x 512 image, 10 times
      19.0780=Total Time,   3.9749423=Geometric mean,   4
tests.

Pretty dumpy eh?

An Ultra1 167Mhz in a neighbor's office got got 11.5961 total, .34812
geometric mean, roughly twice as fast as the Pentium. If other people
wanted to run these tests, I could collect the results and post them...
using the newest version of IDL 5 would be best. A broad mix of
hardware/operating systems would also be good. Remember to free up all
the memory and process space possible before running it (or suffer the
ridicule of your fellow IDL'er)! Just include all relevant details in
an email to me.... sometime, say, over the next two weeks.

JD

--
J.D. Smith |*| WORK: (607) 255-5842
Cornell University Dept. of Astronomy |*| (607) 255-4083
206 Space Sciences Bldg. |*| FAX: (607) 255-5875
Ithaca, NY 14853 |*|