

Speed ver. 2, July 2005

(Test results updated September 2006)

Ziheng's naïve benchmark program

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Note: Do not change or replace files included in the package.

Thanks to [Nick Goldman](#) and [Andrew Rambaut](#) for collecting test results.

Fetching and compiling the programs

The archive is <http://abacus.gene.ucl.ac.uk/software/speed2.tar.gz>, which contains Win32 executables as well as C source files, which you can compile for unix/linux/OSX. Look at the Makefile and type make or use the commands like the following to compile.

```
cc -o small -O4 small.c tools.c -lm
cc -o large -O4 large.c tools.c -lm
```

To run the program, type **small** or **large** at the command prompt.

Simple descriptions

Both programs test the raw CPU speed for numerical computation. Both are sequential programs and do not use multiple processors if you have any. If you are serious about testing, there are many professional benchmarks available; see, e.g., <http://www.specbench.org/>.

small calculates the transition probability matrix $P(t)$ many times. It needs about 4MB of RAM.

large runs a Markov chain. It needs about 444MB of RAM. The output is like the following (I hope the output does not depend on the platform, but I am not sure that this will be the case.)

```
5% 0.50 0.00 1.00 0.50 0.832 0.534 0.394 0.495 0.327 -2197178046.0 0:15
10% 0.50 0.00 1.00 0.50 0.798 0.512 0.378 0.475 0.314 -2196902682.8 0:29
...
100% 0.49 0.55 0.35 0.45 0.753 0.484 0.355 0.447 0.295 -2191882540.7 4:43
```

Test Results (Updated July 2005)

The following table lists timings we have got. These are the best results for the machine/compiler, when the program is running at the foreground, and no other program is running at the same time. If you have results for fast machines, please send me an email with information for all the fields in the table.

Computer model / OS	Compiler & options	small (~4MB)	large (~444MB)
Samsung X10+ centrino 1.8GHz, 1.5GB, winXP	MSC++ VC++6 cl -O2 -Ot	1m31s	4m19s
Samsung X50 PM2.0GHz, 1GB, winXP	as above	1m22s	3m17s
HP desktop DC7100 P4 3.2GHz	as above	2m38s	2m40s
HP desktop DC7600 P4 3.0GHz	as above	2m15s	2m43s
HP desktop DC7600 P4 3.2GHz	as above	2m16s	2m41s
Sun Fire X4100, 2 dual core Opteron 275 CPUs (2.2GHz), OS: Solaris 10, 64bit.	gcc 3.4.3 or Sun C5.8 9 cc -fast -xarch=native64 -xvector=simd	1m23s	1m44s
SunFire dual AMD 64bit Opteron 250 2.4GHz Redhat 2.3	gcc 3.2.3	1m19s	2m37s
Dual Core Athlon 64 X2 4600+ running Ubuntu linux 6.06.01 with 2GB of RAM	gcc 4.0.3	1m35s	2m22s
Dual 2.3GHz Xserve G5 OX Server 10.3.9	gcc 3.3 -fast	3m30s	3m12s