



## Speedometer Version 2.5

(formerly MacSpeed)

This is a quick intro to Speedometer Version 2.5. More thorough docs are available to those who register.

### Obligatory Shareware Plee

First things first: This is shareware. If you find the program useful and plan to keep it around, please send the \$25.00 registration fee (If you can't afford \$25.00, send me a note of explanation, and what you can afford). If you are a member of the press, or are a manufacturer of hardware for the Macintosh, just send me your business card and I will waive the fee.

<p><b>Shareware Fee Requested: \$25.00</b> (NOT FOR COMMERCIAL DISTRIBUTION - GIVE IT AWAY, BUT NOT FOR PAY!)</p> <p>Name: _____</p> <p>Address: _____ _____</p> <p>City/State/Zip: _____</p> <p><b>Send to: Scott Berfield, 2320 N. Sheffield 2W, Chicago, IL 60614</b></p>
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Although this program may be distributed freely for **non-commercial purposes** I reserve all rights to the visual representation, actual code implementation, and any and all technologies used in the program with the exception of the code libraries provided as part of the Lightspeed C development system. This means you may not sell, alter, or in any way profit from this work without my permission. Give away as many copies as you like, but don't change anything, and don't charge for it. I specifically prohibit any of the public-domain exchange companies such as Educomp from distributing this program on their disks. Users groups, however, are free to include it in their collections.



## **Warranty**

This program is provided "as is" and as such, no warranties are made, either express or implied, as to its performance, quality, or fitness for any



particular purpose. If it doesn't work on your system, then let me know and I'll try to find out why. More than that I will not promise.

## The Program

**Speedometer** is a system information and performance testing program for the Macintosh family of computers. Various tests are available, the central one of which is designed to give a Performance Rating (PR) for the system as a whole. The intention of Speedometer is to help you understand and tune the performance of your computer, and also to give some method of comparing different systems. The PR is based on tests that will remain standard through all future version of the software and thus presents a stable basis for comparison.

**Speedometer** runs well on all Mac's currently in use: Mac XI, Mac+, SE, Mac II, SE/30, Mac IIx, Mac IIcx, Mac IIci, and the Portable. It has been tested with the Radius and HyperCharger accelerators for the SE, but cannot be guaranteed to work properly on other third party systems.

Operation of the program is simple. and can be understood by simply reading the on-line information (reproduced below) and by exploring the menus.

### System Information

System Information			
Computer type:	SE	RAM:	2560K
CPU:	68020	System Version:	6.02
FPU:	NO		
Color QD:	NO		
Keyboard:	Extended ADB Keyboard		
AppleTalk:	Version 48		

The first window you see is the System Information window. It presents various pieces of information about your system. It automatically appears, and can be recalled (if closed) with the Windows menu.



\_\_\_\_\_The performance test runs three tests and

provides both individual and combined scores for the results. The tests are: **CPU** (loops, graphics, etc...), **Math** (primarily floating point calculations), and **Disk** (totally non-destructive of disk data). These ratings are based on a stock SE with an Apple HD20 internal SCSI drive. Such a system rates 1.0 on all tests. Some variation can be expected between runs, but differences of



1/100's in the various ratings are unlikely to be significant. The gauge will move to show the values, and the numeric equivalents will be displayed below the gauge area. The gauge will only show values from 0 to 140, but the numeric rating is not limited.

The tests are timed in 60th's of a second (ticks, or 'jiffies') and are run enough times to provide the resolution needed to give a clear result on various speed machines. The total number of ticks for each test is divided into a base number which represents the time it takes the same test to run on a standard Mac SE. For example: a machine which scores a time of 600 ticks on the test would get a rating of 3.0 if a Mac SE ran the same test in 1800 ticks.

The final **PR** value is calculated by combining the scores for the other tests according to a heavily biased formula which attempts to reflect the overall importance of the three tests to a real-world working system. The formula is **(0.20 \* Disk) + (0.20 \* Math) + (0.60 \* CPU) = PR.**

**NOTE: The program needs to reside on the disk which you wish to have considered as your main system drive. For instance, if you have an SE with an internal 20Meg, copy the program to any folder on that disk and then run it.**

### **Use Math Chip**

If you are lucky enough to have a math chip installed in your computer, this command will be available to you. Select Use Math Chip to cause the program to call FPU routines for all floating point math. This creates a tremendous speed increase over SANE at a slight loss of accuracy. All the individual tests are run in this mode, but only the Math portion will show a significant boost. Since most programs do not directly access the FPU, the PR is not a valid real-world rating when the FPU is used. Thus, PR is not calculated if you choose this option.

 Ratings for various other systems are

available by selecting **Systems Comparison**. Results from the current system (if the tests have been run) are graphed in light gray. Click on the



name of the machine with which you wish to compare your results. That machine's scores will be graphed in darker gray and the values will be printed next to the graph area.



**Whetstone:** This classic benchmark is primarily a test of floating point math with a heavy emphasis on transcendental functions. Its results should echo the Math portion of the PR test.

**Dhrystone:** Another classic. This tests everything else — pointer manipulation, memory moves, string copies, etc... It “does nothing, but does it very well.” The test is runs 50,000 loops, instead of the traditional 500,000, for brevity's sake.

**Sieve:** This is BYTE Magazine's implementation of the Sieve of Eratosthenes. It eliminates non-primes from the first 8,190 integers. This test uses only integer math. The test is run ten times and the results are displayed in seconds required to do all ten iterations.

**Savage:** This mean-sounding test simply repeats the following:  
 $a = \tan(\operatorname{atan}(\exp(\log(\sqrt{a * a}))) + 1)$ , *loop* times,  
accumulating the error as it goes. In most people's implementations, *loop* is set to be 25,000, but I use 5,000 to keep the test a reasonable length. If you wish to compare the results with those from other programs, the time can be scaled proportionally. The error rating can, with less success, also be scaled.

Any one of the tests may be run at a time, or all four can be run in series by choosing **Do All Four**.

### **Use Math Chip**

This command is available in the Benchmarks menu as well. It will be available to you if a math chip is active in your system. Select Use Math Chip to cause the program to call FPU routines for all floating point math. The benchmarks are exactly the same in this mode, except that the Savage



test sets *loop* to be 25,000 to more accurately match traditional implementations.



You can display a hidden window with this menu.

## Security



There is a rudimentary virus check included in the program. If the program has changed since it was created, you will see a dialog warning you of this fact when you run it. You have the choice of continuing or quitting at that point. Note that changing the resources in any way will be likely to trigger this, so go easy with ResEdit.