

PERFORMANCE BENCHMARKING: HOW FAST IS YOUR COMPUTER?

Put your computer through its paces to find out whether its performance is up to scratch.

WHY DO THIS?

- Try hardware before you buy to verify its performance.
- Get to know the strain that your system resources are under.
- Gain bragging rights at your next LUG meeting.

HardInfo can also be used to generate HTML reports on performance, but they're not as detailed as those created by Phoronix Test Suite.

Computers come in all shapes and sizes, from the diminutive Raspberry Pi up to room-sized supercomputers. They're all capable of performing the same tasks, but some do them much more quickly than others. Sometimes it's useful to know just how much quicker or slower a particular computer is, and for this there are benchmarks.

Benchmarks are just programs that we can time (this is usually automatic) to see how fast they run on different computers. In principal, you could use almost any software to do this, but each bit of software will behave a bit differently. Some software contains a lot of floating point operations, while other software may need a lot of RAM, and other software may hit the hard drive a lot. The trick to benchmarking, then, is knowing what you want to test and selecting a benchmark that has the right characteristics.

Perhaps the most popular question in benchmarking is how processor power varies between devices. There's a very easy way to test this:

go to www.webkit.org/perf/sunspider/sunspider.html and hit Start Now. This will run a variety of JavaScript benchmarks, and output a score in milliseconds (lower is better). It's a really easy test to run, and is useful for comparing speed on different architectures (it should run on ARM-powered phones and 64-bit desktops). You also don't have to install any software, so you can easily use it to compare performance on devices you're thinking of buying.

However, the fact that it's running in JavaScript is a disadvantage as well as an advantage. The particular JavaScript engine can have a huge effect on how well it runs. If you want to confirm this, just try running it in a few different browsers on the same computer. SunSpider is really designed for benchmarking JavaScript engines, not computers, and there's no real solution to this problem other than using the same version of the same browser on every computer you want to test.

HardInfo

The next easiest benchmarks are in the HardInfo program. This is in most distro's repositories, so you should be able to install it with your package manager.

If you open it (type **hardinfo** on the command line if it doesn't appear in the applications menu), you'll see a variety of options. Most of them are for reporting information about the hardware on your system. These can be useful in diagnosing hardware problems, but we're not interested in them here. At the bottom of the list on the left-hand side, you'll see a series of benchmarks. Click on them to run them (it may take a little while on some machines). It'll give you the performance of the current machine compared to a 1.5 GHz Celeron M machine. We often use this for our benchmarking because it works well on ARM as well as x86-based machines. However, the options are a bit limited.

If you're serious about your benchmarking, there's one open source tool that really does it better than the rest, and that's the Phoronix Test Suite. You can grab it from www.phoronix-test-suite.com/?k=downloads as either a Deb package, or a tarball. If you're installing the tarball, you just need to extract it and run **sudo ./install-sh**. This will copy all the files into the appropriate directories. It's written in PHP, which is interpreted, so there's nothing to compile.

Before we get too far into the Phoronix Test Suite, we should issue a word of warning: the software can

The screenshot displays the HardInfo (0.5.1) System Report in Mozilla Firefox. The report is titled "HardInfo (0.5.1) System Report" and shows a list of benchmarks. The benchmarks are grouped into sections: CPU Blowfish, CPU CryptoHash, CPU Fibonacci, CPU N-Queens, FPU FFT, and FPU Raytracing. Each section shows the performance of "This Machine" (Intel(R) Celeron(R) M processor 1.50GHz) compared to a reference machine (PowerPC 740/750 (280.00MHz)).

Benchmark	This Machine	PowerPC 740/750 (280.00MHz)
CPU Blowfish	800 MHz 1.548	172.816713
CPU CryptoHash	800 MHz 1000.083	
CPU Fibonacci	800 MHz 1.053	58.07682
CPU N-Queens	800 MHz 0.385	
FPU FFT	800 MHz 0.647	
FPU Raytracing	800 MHz 2.624	161.312647

