

4 Ways to Test SSD Speed ??and Performance

The manufacturer's stated read and write speeds are not accurate specifications because they are not the read and write speeds we can actually use.

Poor storage performance and slow speeds are some of the most common reasons why your computer is running sluggishly. If your computer isn't as fast as it used to be, try evaluating the SSDs you're using to make sure they're still working properly.

Test SSD speed with built-in applications

Most operating systems make it relatively easy to test your hardware. These systems have built-in tools that allow you to test your hardware without downloading additional software.

Windows

```

Administrator: Command Prompt
Microsoft Windows [Version 10.0.22631.4602]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>winsat disk -ran -write -drive c
Windows System Assessment Tool
> Running: Feature Enumeration ''
> Run Time 00:00:00.00
> Running: Storage Assessment '-ran -write -drive c'
> Run Time 00:00:00.31
> Dshow Video Encode Time          0.00000 s
> Dshow Video Decode Time         0.00000 s
> Media Foundation Decode Time    0.00000 s
> Disk Random 16.0 Write           707.20 MB/s
> Total Run Time 00:00:00.39
  
```

You can check SSD speed on Windows via Command Prompt. It is important to run Command Prompt with admin rights to prevent any potential problems.

1. Type CMD into the Start menu search bar, then right-click the best match and select **Run as Administrator**.
2. Now, enter the following command: **winsat disk -ran -write -drive [drive_letter]**

Replace **[drive_letter]** with your drive letter. Your Windows files are typically installed on the "C" drive, as shown in the example image above. If you don't know the letter assigned to your drive, you can find it by navigating to **This PC** and checking the drive you want to scan.

Linux

Linux users can use operating system utilities to evaluate read and write speeds separately:

```
jason@ubuntu:~$ dd if=/dev/zero of=/tmp/tempfile bs=1M count=1024 conv=fdatasync
1024+0 records in
1024+0 records out
1073741824 bytes (1.1 GB, 1.0 GiB) copied, 0.818951 s, 1.3 GB/s
jason@ubuntu:~$
```

1. Open Linux Terminal.
2. To run a write test, type or paste the following command: **dd if=/dev/zero of=/tmp/tempfile bs=1M count=1024 conv=fdatasync**
3. To test the read speed of the drive, we need to do a little more setup. The temporary file we created in the previous command is stored in the cache, giving you skewed results. So you need to clear the cache first by entering the following command: **sudo /sbin/sysctl -w vm.drop_caches=3**
4. Now, you are ready to test the read speed of the drive with this command: **dd if=/tmp/tempfile of=/dev/null bs=1M count=1024**

```
jason@ubuntu:~$ dd if=/dev/zero of=/tmp/tempfile bs=1M count=1024 conv=fdatasync
1024+0 records in
1024+0 records out
1073741824 bytes (1.1 GB, 1.0 GiB) copied, 0.818951 s, 1.3 GB/s
jason@ubuntu:~$ sudo /sbin/sysctl -w vm.drop_caches=3
[sudo] password for jason:
vm.drop_caches = 3
jason@ubuntu:~$ dd if=/tmp/tempfile of=/dev/null bs=1M count=1024
1024+0 records in
1024+0 records out
1073741824 bytes (1.1 GB, 1.0 GiB) copied, 0.294601 s, 3.6 GB/s
jason@ubuntu:~$
```

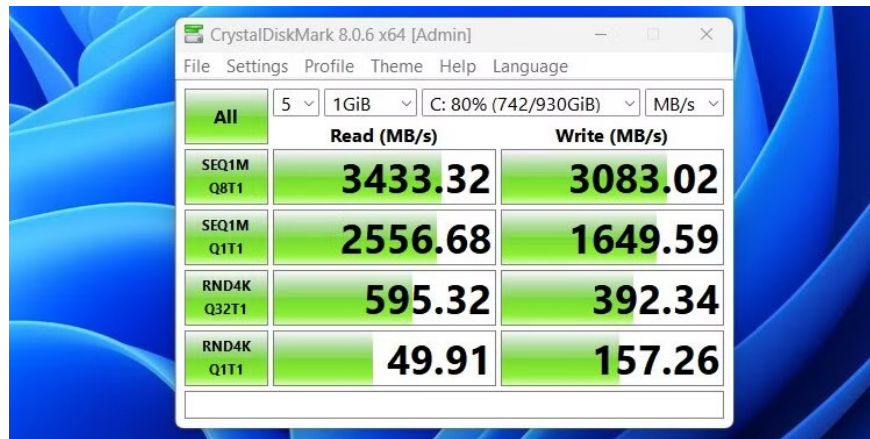
macOS

Finally, if you have a Mac, unfortunately, there's no built-in way to view hardware specs. Apple is notoriously tight-lipped about what's under the shiny aluminum shell, and the software is no different. Fortunately, there are still ways to view your device's performance with the help of some third-party apps.

Test SSD speed with third-party apps

While the operating system's built-in tools are handy, there are plenty of third-party apps you can use to check the speed and health of your storage drives.

CrystalDiskMark

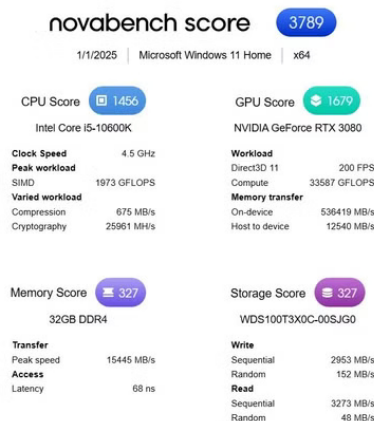


CrystalDiskMark remains one of the most popular tools on Windows for measuring drive speed. Thanks to the program's user-friendly interface, you can measure drive speed by simply pressing the **All** button .

The first result, describing sequential read and write speeds, is probably the most understandable performance measurement.

1. Download for Windows (Free)

Novabench



Novabench is a program that measures the performance of core system components: CPU, GPU, memory, and storage. Running just a drive speed test isn't very intuitive, so just hit **Start All Benchmark Tests** and wait for the full report.

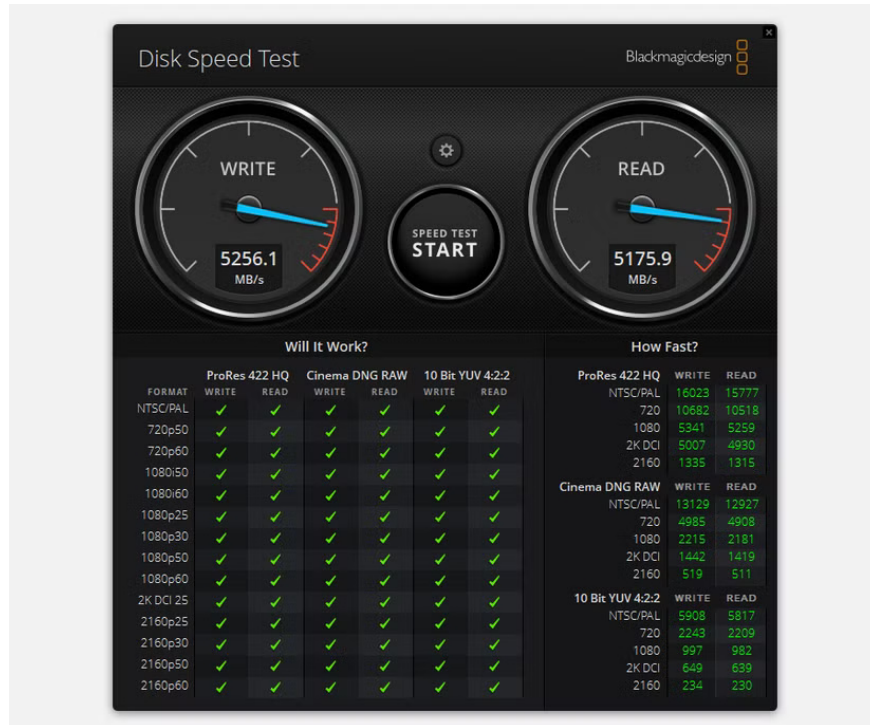
Aside from the quirks, Novabench's extensive cross-platform support makes up for it.

In addition to Windows support, Novabench also runs on macOS. It's a third-party program, so it's not available on the App Store, but it is available on the Novabench website. It's also been updated to support Intel processors, as well as Apple's M1 and M2 chips (aka Apple Silicon).

Finally, since Linux is heavily open source, it would be counterintuitive for the platform to rely on proprietary software. However, if you need a benchmark tool to test drive speeds, Novabench also works on Linux systems.

1. Download for Windows | macOS | Linux (Free)

Blackmagic Disk Speed ???Test



Blackmagic Disk Speed ???Test is a handy cross-platform SSD speed testing tool, available for Windows and macOS. Available on the App Store, the software is primarily intended for Mac users. However, Windows users can also use the software by navigating to the developer's website and downloading the latest software update (you can find the links below).

On the Windows download page, a registration screen will appear, but it is completely optional. Clicking **Download Only** in the lower left corner will save you the trouble. Once you launch the program, just hit **Speed ???Test Start** and let it work its magic.

1. Download Blackmagic Disk Speed ???Test for | (Free)

See also:

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