

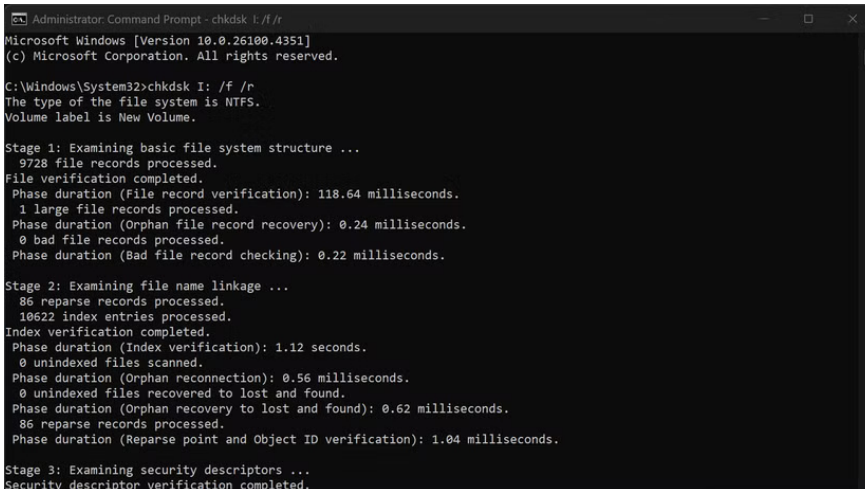
6 Free Tools That Tell You Your Hard Drive Is About to Fail

Several free tools can predict drive failures before they happen, giving you time to back up your data and replace the drive in time.

No technology works perfectly forever. Hard drives are no exception, and when they fail, they take important files with them. Fortunately, there are a number of free tools that can predict drive failures before they happen, giving you time to back up your data and replace the drive.

6. Windows has built-in tools to check hard drive health

Before downloading third-party software, check out what Windows already offers. CHKDSK is still the simplest tool for scanning for drive errors. Open a Command Prompt with admin rights and type **chkdsk C: /f /r** to scan your primary drive. The **/f** flag automatically fixes errors, while **/r** locates bad sectors and recovers readable information. Fair warning, this process can take a while, especially on larger drives.



```
Administrator: Command Prompt - chkdsk I: /f /r
Microsoft Windows [Version 10.0.26100.4351]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>chkdsk I: /f /r
The type of the file system is NTFS.
Volume Label is New Volume.

Stage 1: Examining basic file system structure ...
  9728 file records processed.
File verification completed.
Phase duration (File record verification): 118.64 milliseconds.
  1 large file records processed.
Phase duration (Orphan file record recovery): 0.24 milliseconds.
  0 bad file records processed.
Phase duration (Bad file record checking): 0.22 milliseconds.

Stage 2: Examining file name linkage ...
  86 reparse records processed.
 10622 index entries processed.
Index verification completed.
Phase duration (Index verification): 1.12 seconds.
  0 unindexed files scanned.
Phase duration (Orphan reconnection): 0.56 milliseconds.
  0 unindexed files recovered to lost and found.
Phase duration (Orphan recovery to lost and found): 0.62 milliseconds.
  86 reparse records processed.
Phase duration (Reparse point and Object ID verification): 1.04 milliseconds.

Stage 3: Examining security descriptors ...
Security descriptor verification completed.
```

Windows also includes SMART (Self-Monitoring, Analysis, and Reporting Technology) monitoring. You can also use Event Viewer to troubleshoot Windows problems related to your hard drive. Open Event Viewer and navigate to **Windows Logs > System** and filter for **Disk events**. Look for warning messages about the drive's health — these messages often appear days or weeks before the drive fails completely.

5. CrystalDiskInfo

CrystalDiskInfo 9.6.3 x64

File Edit Function Theme Disk Help Language

Good 46 °C Caution 42 °C
C: D: E: F: G: H: I: J:

Hitachi HCP725050GLA380 : 500.1 GB

Health Status: **Caution**

Temperature: **42 °C**

Firmware	GM40A53A	Buffer Size	7552 KB
Serial Number	GEM530RJ3P0EDE	Rotation Rate	7200 RPM
Interface	Serial ATA	Power On Count	2925 count
Transfer Mode	---- SATA/300	Power On Hours	67626 hours
Drive Letter	F: G: H: I: J:	Standard	ATA8-ACS ATA8-ACS version 4
Features	S.M.A.R.T., APM, AAM, NCQ, Streaming, GPL		

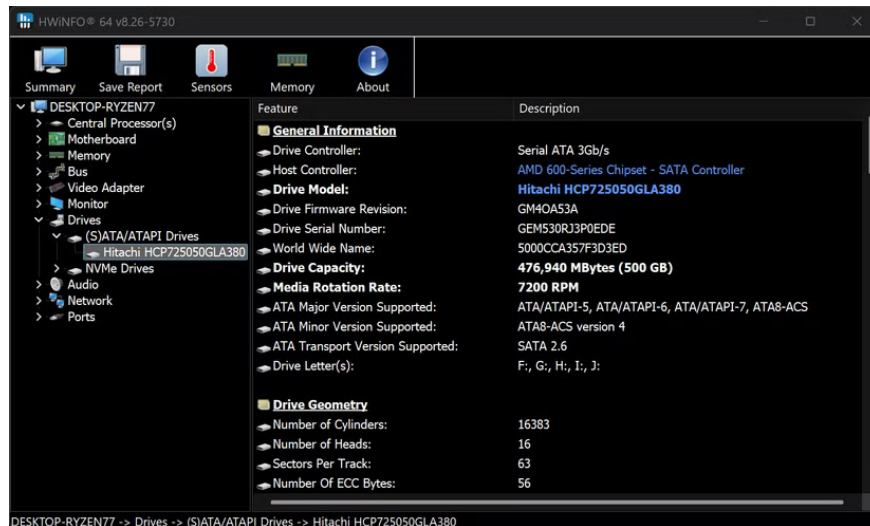
ID	Attribute Name	Current	Worst	Threshold	Raw Values
01	Read Error Rate	100	100	16	000000000000
02	Throughput Performance	100	100	54	000000000000
03	Spin-Up Time	113	113	24	000601530156
04	Start/Stop Count	100	100	0	000000000B73
05	Reallocated Sectors Count	100	100	5	000000000000
07	Seek Error Rate	100	100	67	000000000000
08	Seek Time Performance	100	100	20	000000000000

CrystalDiskInfo stands out as the most user-friendly drive monitoring tool available. Its clean interface shows everything you need at a glance.

The color-coding system makes it easy to assess drive health. Blue means excellent, green indicates good, yellow warns of a problem, orange indicates failure, and red indicates immediate replacement. The status colors are a bit like traffic lights.

Pay attention to key SMART attributes like reallocated sectors, currently pending sectors, and uncorrectable errors. Increasing numbers in these categories often predict impending failure, sometimes weeks before the drive actually fails.

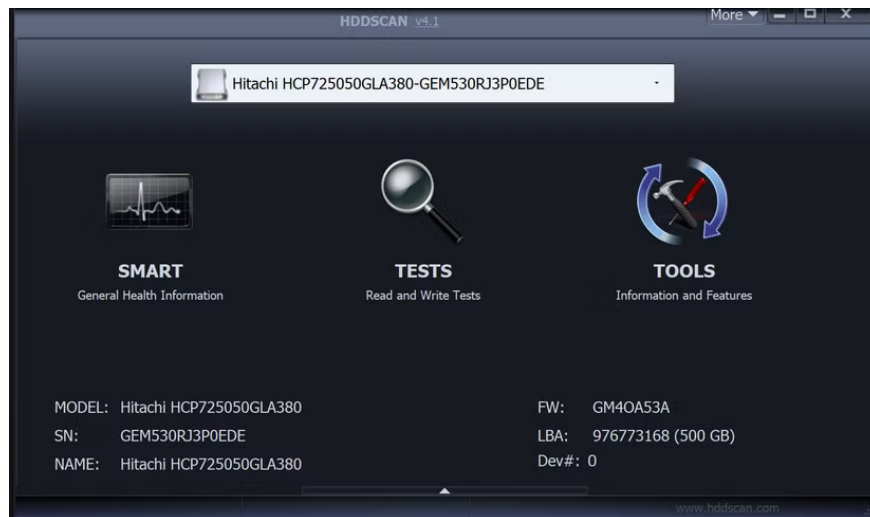
4. HWiNFO



This tool takes hardware monitoring to the next level, and drive health is just one of its key features. It overwhelms beginners with information. While CrystalDiskInfo displays the essentials, HWiNFO displays every conceivable hardware metric.

After installing HWiNFO, navigate to **the Drives** section to find detailed SMART data along with temperature readings and performance statistics. HWiNFO can log drive metrics over time and generate detailed reports that show gradual degradation patterns. This historical data is useful for spotting trends that moment-to-moment snapshots might miss.

3. HDDScan



HDDScan takes a different approach, focusing on proactive testing rather than passive monitoring. It performs surface scans and stress tests. These proactive tests can detect issues that don't show up in standard health reports, especially the development of bad sectors or inconsistent read speeds.

This tool works with virtually any storage device you can connect to your computer. Whether you have an HDD or SSD, a USB flash drive, an SD card, or even network-attached storage, it's all within its testing range.

The interface is dated but useful. You just select your drive, choose a test type, and let it run. It offers several test types, each serving different purposes. Surface scans methodically test each sector, while read verification tests measure access times across the entire drive.

2. HDDLife

The screenshot displays the HDDLife Pro software interface for a SATA Drive 0. The main window title is "HDDlife Pro - version 4.2.207". The interface includes a menu bar with "File", "Language", and "Help". A prominent orange warning box with an exclamation mark icon reads "ATTENTION! The reliability of this hard drive is within acceptable limits so far, but its performance and/or reliability have fallen to an average level and this does not allow you to use your hard drive to the maximum extent and leads to a further gradual decline in its condition. It is recommended to schedule replacing the hard drive." Below this, the drive is identified as "Hitachi HCP725050GLA380" with a total size of 500.1 GB. The temperature is shown as 41°C with a green progress bar. The work time is 7 years 8 months 22 days 18 hours (67626 hours), with a link for "click for more options". The health status is "ATTENTION!" with a yellow progress bar at 39%, and the performance is "EXCELLENT!" with a green progress bar at 50%. A link "click for more info - view S.M.A.R.T. attributes" is provided, along with the last checked time: "6/25/2025 12:15:06 AM".

Logical disks info:

Volume	Label	File system	Capacity	Free
F:\	After DARK	NTFS	215.8 GB	66.9 GB
G:\		NTFS	102.0 GB	19.0 GB
H:\	System Reserved	NTFS	607.1 MB	137.3 MB
I:\	New Volume	NTFS	52.6 GB	44.1 GB

Type	ID	Attribute name	Value	Thre...	Worst	RAW	Status
Health attribute	1	Raw Read Error...	100	16	100	0	100%
Health and performance attribute	2	Throughput Per...	100	54	100	0	100%
Health and performance attribute	3	Spin Up Time	113	24	113	601530156	90%
Information attribute	4	Start/Stop Count	100	0	100	B73	
Health attribute	5	Reallocated Sec...	100	5	100	0	100%
Health and performance attribute	7	Seek Error Rate	100	67	100	0	100%
Health and performance attribute	8	Seek Time Perf...	100	20	100	0	100%
Information attribute	9	Power-On Hours	91	0	91	1082A	
Health attribute	10	Spin Retry Count	100	60	100	0	100%
Information attribute	12	Device Power C...	100	0	100	B6D	
Information attribute	192	Power-Off Retr...	96	0	96	159F	
Information attribute	193	Load/Unload Cy...	96	0	96	159F	
Information attribute	194	Temperature	146	0	146	3E000A0029	
Health attribute	196	Reallocated Ev...	100	0	100	0	
Health attribute	197	Current Pendin...	100	0	100	3	

Health attribute Health and performance attribute
 Performance attribute Information attribute

Count of non-corrected read errors. More errors (i.e. lower attribute value) means worse condition of disk surface.

OK

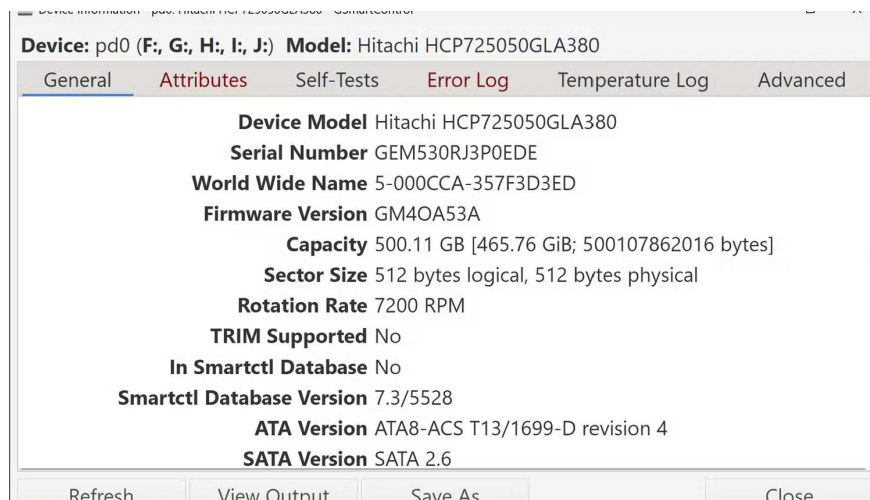
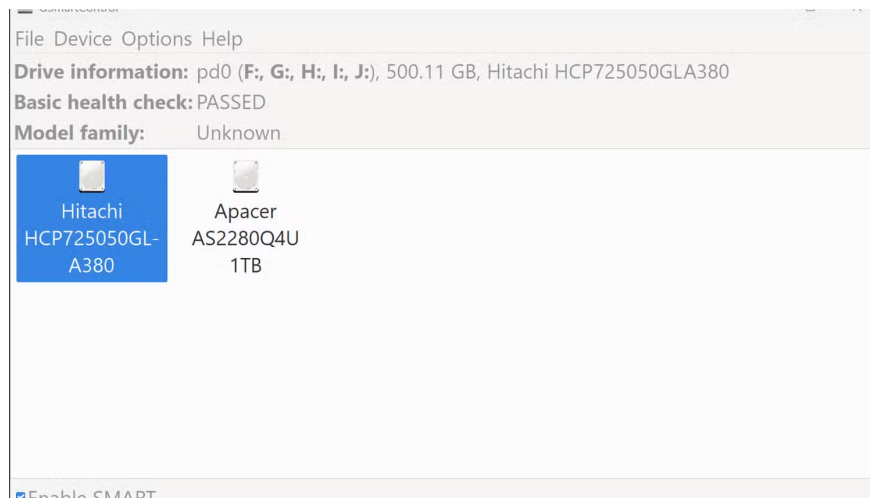
This tool balances simplicity and detail as it focuses on the drive's lifespan rather than just its current health status. It displays real-time temperature monitoring, prominently displayed alongside the health percentage.

The interface displays important information at a glance: Drive temperature, total hours of operation, and a percentage-based health score. Unlike some other tools that simply report 'good' or 'bad,' HDDLife attempts to predict the remaining life of the drive based on usage patterns and SMART attribute analysis.

1. GSmartControl

This tool is also a middle ground between simplicity and technical depth, and is one of the recommended ways to check actual drive capacity to ensure you're getting what you paid for.

The main interface keeps things simple with a basic status check that displays 'PASSED' or 'FAILED' for each connected drive. But it shines in the multi-tab interface. The **General** tab provides full drive specs, from firmware version to interface speed.



Meanwhile, the **Attributes** section displays all SMART parameters with current values, thresholds, and predicted failures. The **Self-Tests** tab allows you to run various diagnostic procedures directly from the interface. Short tests typically complete in a few minutes, while extended tests provide comprehensive drive validation.

See also:

1. Top 7 Hardware Diagnostic Tools for Windows 10
2. Signs that you should replace your hard drive
3. 5 tips to free up hard drive space

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