How to Tell If Your Computer is Overheating and What to Do About It

Heat is a computer's enemy. Computers are designed with heat dispersion and ventilation in mind so they don't overheat. If too much heat builds up, your computer may become unstable or suddenly shut down.

The CPU and graphics card produce much more heat when running demanding applications. If there's a problem with your computer's cooling system, an excess of heat could even physically damage its components.

Help and Support

Help Desk

Homepage

Is Your Computer Overheating?

When using a typical computer in a typical way, you shouldn't have to worry about overheating at all. However, if you're encountering system instability issues like abrupt shut downs, blue screens, and freezes — especially while doing something demanding like playing PC games or encoding video — your computer may be overheating.

This can happen for several reasons. Your computer's case may be full of dust, a fan may have failed, something may be blocking your computer's vents, or you may have a compact laptop that was never designed to run at maximum performance for hours on end.

Monitoring Your Computer's Temperature

First, bear in mind that different CPUs and GPUs (graphics cards) have different optimal temperature ranges. Before getting too worried about a temperature, be sure to check your computer's documentation — or its CPU or graphics card specifications — and ensure you know the temperature ranges your hardware can handle.

You can monitor your computer's temperatures in a variety of different ways. First, you may have a way to monitor temperature that is already built into your system. You can often view temperature values in your computer's BIOS or UEFI settings screen. This allows you to quickly see your computer's temperature if Windows freezes or blue screens on you — just boot the computer, enter the BIOS or UEFI screen, and check the temperatures displayed there. Note that not all BIOSes or UEFI screens will display this information, but it is very common.

There are also programs that will display your computer's temperature. Such programs just read the sensors inside your computer and show you the temperature value they report, so there are a wide variety of tools you can use for this, from the simple Speccy system information utility to an advanced tool like SpeedFan. HWMonitor also offer this feature, displaying a wide variety of sensor information.

Be sure to look at your CPU and graphics card temperatures. You can also find other temperatures, such as the temperature of your hard drive, but these components will generally only overheat if it becomes extremely hot in the computer's case. They shouldn't generate too much heat on their own.

If you think your computer may be overheating, don't just glance as these sensors once and ignore them. Do something demanding with your computer, such as running a CPU burn-in test with Prime 95, playing a PC game, or running a graphical benchmark. Monitor the computer's temperature while you do this, even checking a few hours later — does any component overheat after you push it hard for a while?

Preventing Your Computer From Overheating

If your computer is overheating, here are some things you can do about it:

- Dust Out Your Computer's Case: Dust accumulates in desktop PC cases and even laptops over time, clogging fans and blocking air flow. This dust can cause ventilation problems, trapping heat and preventing your PC from cooling itself properly. Be sure to clean your computer's case occasionally to prevent dust build-up. Unfortunately, it's often more difficult to dust out overheating laptops.
- Ensure Proper Ventilation: Put the computer in a location where it can properly ventilate itself. If it's a desktop, don't push the case up against a wall so that the computer's vents become blocked or leave it near a radiator or heating vent. If it's a laptop, be careful to not block its air vents, particularly when doing something demanding. For example, putting a laptop down on a mattress, allowing it to sink in, and leaving it there can lead to overheating — especially if the laptop is doing something demanding and generating heat it can't get rid of.
- Check if Fans Are Running: If you're not sure why your computer started overheating, open its case and check that all the fans are running. It's possible that a CPU, graphics card, or case fan failed or became unplugged, reducing air flow.
- Tune Up Heat Sinks: If your CPU is overheating, its heat sink may not be seated correctly or its thermal paste may be old. You may need to remove the heat sink and re-apply new thermal paste before reseating the heat sink properly. This tip applies more to tweakers, overclockers, and people who build their own PCs, especially if they may have made a mistake when originally applying the thermal paste.

This is often much more difficult when it comes to laptops, which generally aren't designed to be user-serviceable. That can lead to trouble if the laptop becomes filled with dust and needs to be cleaned out, especially if the laptop was never designed to be opened by users at all. Consult our guide to diagnosing and fixing an overheating laptop for help with cooling down a hot laptop.

Overheating is a definite danger when overclocking your CPU or graphics card. Overclocking will cause your components to run hotter, and the additional heat will

cause problems unless you can properly cool your components. If you've overclocked your hardware and it has started to overheat — well, throttle back the overclock!

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