

What to Do When Your Laptop Won't Start

I. Introduction

What if one morning you press that magic power button and your computer remains silent, dark-screened, seemingly dead? Avoid panic with this brief guide, which outlines steps to efficiently diagnose and often cure your problem.

While this guide aims to take you to the point of knowing *what* to replace (if anything), detail on *how* to replace computer parts is beyond its scope. However, YouTube videos often offer excellent instruction on the replacement process, and parts can easily be ordered from both manufacturers and outside companies.

This guide focuses specifically on laptops. Troubleshooting a desktop computer is somewhat different, though many of the steps here are relevant to both types of machines.

II. Basics

If your laptop won't turn on, begin by checking for common, simple power problems:

1. Plug the laptop in directly to a wall outlet if it is not already; the battery may be dead. If you had the laptop connected to a surge protector or docking station, the problem might be there.
2. If the laptop was plugged into a wall outlet already, be sure the connections are secure, with the plug firmly in the outlet and the connector on the other end of the cord secure in the laptop's power jack.
3. Test the outlet, for example by unplugging the laptop and plugging in and turning on a lamp.

III. More Power Connection Issues

Next, check the power adapter (the "brick" on your power cord) and the cord itself for problems:

- Light on power adapter not lit
- Cord cable frayed with wires visible
- Discoloration or warping
- Burning smell coming from cord/adapter



Figure 1 Power adapter and cord

If any of these problems are present, unplug the cord right away and obtain a replacement. You may also want to check the cord with a digital voltmeter to be completely sure voltage is running through its full length. Or, if you have a spare cord you may want to try using that.

Also check that the power jack on the laptop where the cord connector would be plugged in is not blocked or damaged—no dirt, no bent pins, etc.

Warning: If you see a problem with the power jack that you think you can fix, unplug the AC cord and remove computer battery (see Section VII.) before attempting the repair.



Figure 2 Power jack and plug

IV. Overheating

Is the laptop hot to the touch? Let it cool down before attempting to start it again. If this works but then the problem reoccurs later you likely have a defective fan that needs to be replaced.

V. Peripherals and Additions

Remove any externally connected peripherals, for instance your mouse or any attached drive, and try restarting.

If you have just installed any new hardware or memory, remove that as well and try re-starting.

VI. Reset

Press the computer's power button and hold it for at least 5 seconds. This may allow the computer to reset itself and start normally.

VII. Battery

If you are able, remove the laptop battery. Unplug the computer before doing this.

In many cases, you will be able to remove the battery by sliding over a battery latch on the bottom of the laptop (varying in location and design depending on laptop model) and holding it in position until the battery is released. You can also check your user manual for specifics.

Warning: Some laptop manufacturers do not provide a way for users to remove batteries.

Once you've removed the battery, plug in the laptop and see if it will start when running on AC power only. If it will, then you have a defective battery and will want to replace it.

If it still does not start, try unplugging the AC cord again and holding down the laptop power button for at least 30 seconds. This drains the laptop of what could be an excess of electricity

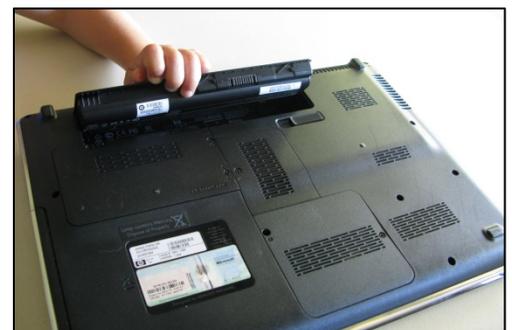


Figure 3 Battery removal

preventing start-up. Then plug in the AC cord (without replacing the battery) and see if the laptop starts. If not, try once more pressing the power button for a longer period (one minute or more) and then plugging in the AC cord.

Finally, to correct another possible power state problem, unplug the laptop again and leave it with no battery or AC connection for at least a minute. Then replace the battery, plug the laptop into the AC outlet, and try starting the laptop again. In some cases this will correct the problem.

VIII. Screen

Can you hear the fan running even though the computer does not seem to be starting up? This situation can indicate several possible problems including with the laptop's internal power supply, motherboard, or LCD screen.

Darken the room and see if there may be a very faint image on the screen. That would indicate a problem with the screen rather than the computer itself, and that the screen needs replacement.

Replacing a laptop LCD screen is possible but difficult and fairly expensive. You will want to consider whether you want to get a new computer instead.

IX. Advanced Troubleshooting

If your computer is out of warranty and you want to go further, there are a few more things you can try which require opening up your computer, typically by unscrewing the screws on the bottom of the laptop.

Warning: Unscrewing a laptop's back often voids warranties.

Warning: Before reaching inside the computer, touch bare metal to ground yourself and avoid static electricity damaging to computer components.

Look at the area inside the computer behind the power jack. There will be a connection here to the motherboard, either a harness or direct soldering of the jack to the motherboard. With a digital voltmeter, check the power on the power cord and then on the interior of the computer by the jack. If the interior measures no voltage or a voltage less than the cord, then there is a problem with the jack and/or harness and they need to be replaced.

Look for a coin-type battery on or near the motherboard; this is called the CMOS battery. It is not accessible or user-replaceable in all laptop models, but if it is, cost is low (currently under \$10) and batteries are generally easily available.

Laptop fan replacements are also low-cost (currently \$20 or less) though challenging to install.

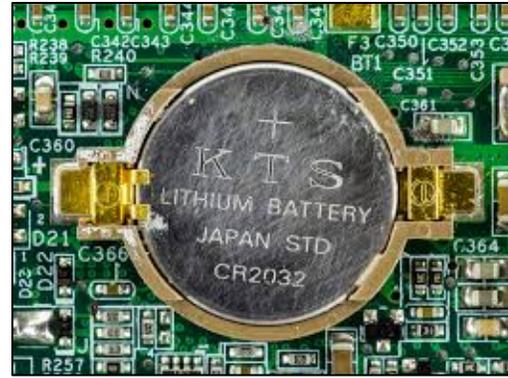


Figure 4 CMOS battery

X. Contacting Customer Service

If none of your efforts have by this point uncovered what the problem is, it is likely time to call the manufacturer's customer service line, which can be found in the documentation you received on purchasing your computer or through an internet search. They will assist you in shipping back the computer for repair or in locating an authorized repair service in your area.

Let them know what you've tried already and they will be able to move on more quickly to explore other possible problems.