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Hard drive caddy 3.5

Even if you're a self-proclaimed computer geek that can create PCs from components, I'm sure there are parts you don't fully understand. You may know, in abstract terms, how to restart a computer — but do you know the actual process? Similarly, there are some people - Geek or otherwise - who do not know how the hard drive operates on the basis of this: Spin the disc and read the head and write the data. But beyond that, how much do you know about the actual operation of a hard drive? For example, how do the heads move? The head should be able to correctly look for a magnetic field that is only a few nanometer wide while the disc moves on thousands of revolutions per minute. This certainly cannot be done with a normal motor - and in fact, hard drive heads are moved with a voice coil actuator, in much the same way that a cone in a speaker is moved to make sound. By applying small amounts of power to a wire, a Lorentz force hard drive head is used to move very right. No cogs, and minimal wear and tear — which is one of the reasons why hard drives last for so long (compared to other machines that work under such circumstances, anyway). How does a head data read? At its most basic, the head is a piece of metal that is wrapped in wire. As the head moves on to magnetic fields on the plate, changes in magnetism induce a current that is measured and converted into binary value. It's not easy enough — there are different ways to create hard drive heads and encoding data on the magnetic surface — but Faraday's law of induction is always used. Finally, because the density of data is so high on modern drives - up to 625 billion bits (78GB) per square inch on a 1TB plate - the head should swim just 5 or 10 nanometers above magnetic fields. Instead of trying a fixed head machine that hangs 10nm above the plate, the modern hard drive head floats over a layer of air that is created by the rotation of the drive. This technique is self-improvement: if the head rises too much, it loses the bounce and falls back to its floating height. Just so you have some idea of how close a head flies on a hard drive plate: 10nm is three times smaller than the transistor used in the latest computer processor — and as the hard drive density increases, the floating height will only be reduced. For more information, watch Bill Engineer's man in the video below. Everything we've covered here is in the video, as well as some more cool factoids. Personal computers are perhaps the most important invention of the 20th century. Almost every industry depends on them. Even trades such as construction and deep-sea fishing use computers to improve efficiency. But the personal computer can also be frustrating. If you use enough for a long time, you will probably encounter some sort of malfunction or hiccup that gives you either reason Productivity or worse, do all your work. Personal computers weren't always complicated. The Altair 8800 had done very little in the way of computing a basic 8-bit computer that was released in 1975. Amateurs bought them and molested them — even though there were no monitors. Running programs allowed Altair users to see LED flicker in sequence. Altier had no hard drive. Fast forward 30 years, and computers have become as important to our society as automobiles. We store our lives on our computers. Bank account information, drawings from family gatherings and personal information that we consider important to our existence are stored in computers. As far as computers are there, the advent of the Internet has changed the game. But as useful as the Internet is undoubtedly, it comes with its fair share of stuff, including viruses and other malicious programs. Whether you're a victim of one of those whose hobby is to turn your computer into a boat anchor or your machine is nearing the end of your natural life, it's important that you back up the data on your hard drive. This article will give you the tools you need to protect you from losing all your important data stored on your computer. Let's start by putting a look at the next page to see what you can do to minimize the damage by being active with your data storage. Dear Lifehacker, I know hard drives may fail, but how long do they actually last? Will they last longer if I don't use them as often? Honestly, drive for posterity for posterity, these are good questions, and you've asked a bunch of them! You're essentially asking how long a variety of hard drives will last under regular or normal use, and then how long they'll stay under any use (as somewhere, stored in a box. Let's go through each of them one by one. Normal Use/G/O media can get a commission under no hard drive in active use is essentially a ticking bomb. Let's be honest: It's not a matter of if a hard drive fails, it's a matter of when, and how lucky you'll be postponing that unless possible. If you're really lucky, it will happen after you've upgraded to a new one. If you're unlucky, it will happen in a matter of months or years, and when it dies, we can only hope you have to back up your computer before it happens. At least once a month, some friends or family members ask me how to recover data from a failed hard ... Read MoreAs for the average life of the hard drive in your computer, well, that mostly depends on whether it's a traditional hard drive or an SSD. Here though there is basic breakdown, and some average life expectancy: hard drive: traditional hard drive (also known as HDD), which you usually have desktop computers and some Laptops will find, often soon fail because they use moving parts. The average life of the hard drive depends on a lot of things, is, Brand, type, size and interface method, but you're seeing about four years on average. Online backup service Backblaze studied drive in its infrastructure and found nearly 80% of them survived for four years. Of course, this also means that 20% did not and failed soon, most of those in the third year of use. Similarly, the brand of drive you use makes a difference. For example, tests of seagate backblazes failed more often than western digital or Hitachi drives. You can check raw data on all 41,000 drives for more, but in short, keep backing up your data, look for smart alerts, and keep an eye on your hard drive warranty. Most are about two to three years, and when your drive can last longer than that, be prepared for failures after that point. Solid-state drives: Solid-state drives, which have become hugely popular for their fast speeds in laptops and desktops, are different. You may have heard people say that you have to be careful with SSD because they have a limited number of reads and writes. In fact, consumer SSDs actually live really, really long under normal use. TechReport's famous SSD endurance test showed us that a lot of those fears are more developed, and even the consumer managed to survive writing over 700TB of SSD data and reading well. These drives usually come with a warranty of three to five years, and manufacturers believe you will write 20GB-40GB per day in data. That means up to 700TB, you will have to do 40GB every day for 17,500 days, or about 50 years. That doesn't mean you should mistreat your drive, and that doesn't mean SSDs won't fail due to other issues, but if you're worrying your SSD because you used it too much to die, don't. Of course, it's all average data. Your experiences may vary, and you can wind up with a great drive that lasts forever, or another one that fails a few days out of the box. That's why it's important to keep your system supported. Also, stick to reliable brands with solid warranty that it's not a nightmare for RMA a drive that dies before its prime. If you're not using your hard drive on the other side of the coin allThe other side includes cold storage. If you put data on a drive and then, say, leave it in a secure deposit box or a time capsule, how long will the data on it survive before it is reduced? We've touched on a little question in this guide to data storage for the long haul, but if you're talking about true cold storage — as you don't want to use it for years, maybe decades at a time, the numbers change a bit. Dear LifeHacker, I have some files that are very important to me, and I want to make sure they ... Also Read, Things depending on whether you are talking about SSD or traditional HDD. Here's all you need to know: Hard Drive: If you're planning to leave some data A hard drive and toss it into a storage unit or a secure deposit box, you probably don't have to worry about the data deteriorating on your own. On episode 11 of Techthing, Patrick Norton spoke to Aileen Malventano of PCPer, who said that as long as your drive is in a climate-controlled environment, the only issue of worrying is the oil around ball bearings. In short, spin them every few years- which you should do anyway to create additional backups and switch storage methods (which we'll get a little later. If your environment isn't controlling the climate, well... Just make sure it's climate controlled. It will not survive the possibility of a time capsule in the ground with a hard drive to be dug up and read. Solid state drive: To pin down SSD for archival purposes is a difficult thing. SSDs are still relatively new technology, especially compared to magnetic media (which most businesses still use for archival backups) so there aren't many serious studies in cold storage for their long-term survival. We have an idea that, under power, SSD can last a good long time, but even the SSD technology is evolving (future consumer SSD will likely be PCI, just for speed purposes, the way enterprise SSD has been for a while) and everything could change again in a matter of years. Theoretically though, assuming a climate-controlled environment drives the only thing you'll have to worry about is the slow decline of data in NAND cells, but that's a process that takes decades, possibly longer. The long story is short, if you put a hard drive offline and in a box- as long as it's maintained somewhere well, you'll have other problems to worry long before the last fall of data on the drive. Conceivably you can keep up for decades or so, maybe longer, and then fire them and they'll work as good as they did the last time they did down, and the data will be right there for you to read. More important factors: This thing about the mechanical or physical life of interface TechnologyAll storage is great, but it misses the biggest, most important point: the technology runs fast, and your hard drive may become obsolete before you die. After all, it wasn't long ago that the hard drive interface was the standard IDE, then Saata, then SATA II and III. For external media, long before we had USB 3 and Thunderbolt, what we did with parallel port and serial connection. You may still be able to use some of those old drives, but many new computers won't be able to connect to them, so you'll need to find equally outdated technology (or working converters and adapters) to retrieve it. It's not a big deal for regular hard drive use, but if you're talking about serious long-term storage for future generations, it's worth considering. You think you can slap some precious photos on a 1TB USB drive, put it put A secure deposit box in the bank, and it will open it to your kids with instructions when you're away, it's a gamble that (depending on how old you are, of course) there will be any USB devices left around at the time they'll be left around to see what's on it. Just imagine: If someone handed you a zip disk today and told you there was something important to you on it, how would you go about coming to that data? Your best bet is diversifying your storage methods every few years, updating data and driving formats and having more than one type of backup whenever possible. Your data isn't really secure unless you're properly and supported with a lot of redundancy. ... Read further the physical life of your hard drive in any event is one thing, but its practical, useful life is something totally different. Hopefully we have both addressed to you here though, and you can rest assured of knowing your drive will probably last you a while. That said, make sure you back up your data! Honestly, ask lifehacker a question or suggestion for lifehacker? Tips by Brian Hagen + send for asklh@lifehacker.com illustration. Additional photos by Simon Wolhorst, Chris Bannister and Walkboston. Walkboston.