

Seagate from the Ashes

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I've read on quite a few occasions about the practice of putting a failed hard drive into the freezer for a few hours in order to make it spin up and work for long enough to make copies of the most important documents on it. I vaguely understood the logic behind it but never really thought it could work, it was far too simple. After all, hard drives don't break because of simple mechanical failures; they break because they hate you and want you to suffer. Then, one day, my flatmates 250 Gb external hard drive (a Seagate FreeAgent) failed; suddenly this old trick seemed worth looking into. Here's what happened.

We began by taking the whole thing apart, not really with any aim in mind, just because when something breaks, taking it apart makes you feel like you're part of the way to fixing it. Once we'd got it apart, we were left with the two core components, the USB interface board (below) and the hard drive itself. The Hard Drive was just a standard 3.5" SATA II drive like you'd find inside any desktop computer.

We then took just the hard drive assembly and plugged it into the SATA II port of a desktop computer, when turned on the computer would just hang at the point at which it attempted to detect the disc. This confirmed it was broken (which we knew, so if you're trying to do this yourself I'd skip that step!). With it plugged into the desktop we tried all sorts of tricks which have worked in the past, tapping it, changing the angle, all to no avail. At this point we were sceptical it could be fixed, previous drives with mechanical failure had always been detected then failed to read, this one wasn't even being detected which to us implied an electronic fault, which we definitely couldn't fix.

At this point we were close to writing it off as a lost cause and decided we had nothing to lose, we might as well stick it in the freezer. We sealed it in an airtight bag, to minimise condensation, squeezed in between the pizza and pork chops, then headed out for the cinema.

When we got back, we got it out, as expected it was cold, and plugged it into Desktop again to see if it would spin up. To our surprise it did spin up and the computer no longer hung at the detection page, the computer didn't detect it properly though. In retrospect this was almost certainly because I was using a dodgy old SATA cable.

We then plugged the drive back into the original controller and power board, powered it up and plugged it into a laptop via USB. It worked! All 250Gb of our files were there!

That wasn't the end of the problem, although it worked, all of the websites we'd seen said that the general lifespan of one of these frozen drives was about 20 minutes before it would need freezing again; we needed all 250Gb of files, which we knew would take well over 3 hours to copy to another external hard drive.

So, in the mindset that this was likely to be pretty much a write off so we had little to lose, we hatched a plan. If getting it cold was the secret to making it work, keeping it cold whilst running should be the key to making it work for a reasonable period. We could have used a fan and a bag of ice to do this, sadly the only fan in the flat fell out of a 5th story window when I (Ben) was trying to replicate air conditioning using only things I could find in my room and now doesn't work so well, so we had to be a little more adventurous.

A disclaimer on this particular solution; it did work for us, but conventionally electronics and water do not mix, neither do complex computer components and kitchen appliances. We take no responsibility if you try it and it fries your freezer, your computer, your pet or even yourself.

Using nothing but a sandwich bag, some zip ties and our ingenuity, we fashioned a high tech almost watertight enclosure for the hard drive and controller board, with the USB cable and power leads running out through the end (translation – we put it in a bag and sealed it, with bits of paper wrapped around the circuit boards because we couldn't find any anti-stat bags).

We then put this assembly in the freezer, again on top of the pork chops, ran the wires to the laptop (happily our freezer had quite a generous seal around the edge!) and waited for the bang which, happily, never came. To our amazement, when connected the device showed up as normal and allowed us to copy all 250 GB of data to another external hard drive. It took around four hours and went without a hitch.

become fairly over-looked in the last few years, more and more people have external hard drives with plenty of space onto which they backup their data to so when their main drive fails they just restore the backup. Technology being technology, it has once again taken a leap forward and with the onset of huge audio and video collections, these 'huge' external hard drives are now easy to fill up and these huge collections are often not backed up.

This coupled with the current fashion of making external hard drives 'silent' by not including any sort of cooling system means that this old trick may (arguably unfortunately) be making a comeback. Unfortunately with such large volumes of data, the twenty minutes it traditionally provides is likely to be insufficient, setting the drive up so it can be accessed whilst in a freezer gets around this, and could be the key to saving your full and prized collection of boy band music videos.

Above - Not just water cooled....

If you try this (at your own risk!) and it works, doesn't work or you have a better idea, email me (ben.dixon@moneywhatmoney.co.uk) or even better stick a comment at the bottom of the page!