

Emergency recovery

Harddrive recovery trick

Thijs Beckers

Despite all those recent technical innovations we still can't guarantee that components won't break down. And so it was with the hard drive inside one of our Lab PCs, which contained important project details and which gave up the ghost ...

All moving parts suffer from wear and tear. This also applies to the hard drives inside our computers. Despite the very low probability of a hard drive failure (hardware-wise in this case), Murphy's Law dictates that it will always happen when you least expect it.

This was recently also the case for one of our Lab workers. Although we have a backup system in place, there will always be some (recent) information that hasn't been backed up yet. And that is of course very frustrating. Everybody who lost their important files in a similar way will know how frustrating that can be, and how much they wished that they had a full, up-to-date backup.

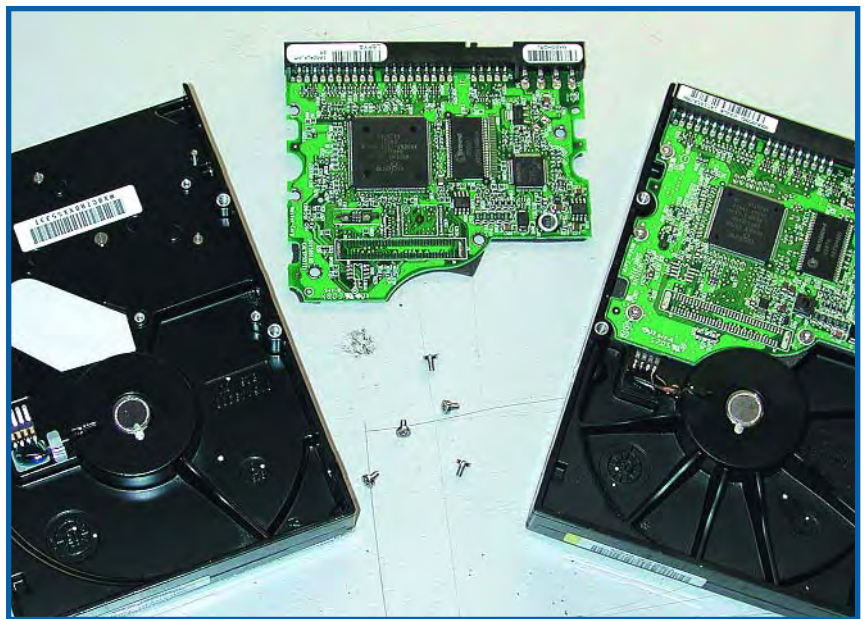
The hard disk concerned appeared completely dead. By this we mean that the BIOS no longer recognised the hard drive and the internal discs were no longer spinning — as dead as a door-nail. Once it was in this state there was nothing that 'Scandisk' could do. Fortunately we came across a somewhat risky 'trick', which could possibly recover the data. First you have to find a (working!) drive of exactly the same type as the broken one (i.e. the same capacity, cache memory, RPMs, part number, etc.). Then you swap the controller boards of the drives and hope for the best.

It seems that the type of hard drive we had (a Maxtor Diamond Max Plus 9) sometimes suffers from a failure of the motor driver. Oxidation can cause a break in one (or more) of the three driver phases for the motor, which causes a MOSFET to fail. This in turn results in the failure of a certain IC and a few other components around the MOSFET. And if you are really unlucky the read/write head interface chip packs up as well.

Unfortunately, the company where we

previously bought an identical drive supplied us with a more recent type, a DiamondMax Plus 10 (normally this would be very welcome, but in this case it was the last thing we wanted). Since we were becoming rather impatient (with deadlines for articles loom-

tion started normally. However, we no longer trusted this drive so we quickly made a full backup and returned the drive for an exchange under warranty. We could call this a very successful operation. The Lab was happy that all their data was recovered, the bor-



ing ahead), we tried it with the new type, but the old drive protested loudly, with the heads apparently moving all over the place. The only positive aspect of our first attempt was that it established that the internal discs could still rotate. The motor itself was therefore not broken.

We were lucky to find an identical drive to the broken one in my own work PC. After making a complete disk backup of this drive we exchanged the controller boards again. And lo and behold, it worked! The BIOS immediately recognised the hard drive. We even found that the Windows installa-

tion started normally. However, we no longer trusted this drive so we quickly made a full backup and returned the drive for an exchange under warranty. We could call this a very successful operation. The Lab was happy that all their data was recovered, the bor-

rowed drive was reunited with its controller board and put back into my PC, as if nothing had happened. I have to say we were very lucky this time.

We should warn you though: Maxtor *strongly* advises against using this method, since it could cause irreparable damage and invalidate the warranty. If you want to play it safe you should use an established data recovery company to extract your lost data. Bear in mind that this doesn't come cheap and you can easily spend a three or four-figure sum.

(065099-1)