Choosing Data Recovery Software

The choices of data recovery software range from free to thousands of dollars. There are many differences between open source and commercial software, and data recovery is no exception. Cost will be the determining factor for many who are in need of software to recover lost data. A good rule of thumb is to consider what the data is worth to you before you spend money on it. If you lost a bunch of mp3's or rar's that can easily be re-downloaded, then open source may be the way to go. Is it a presentation that you worked many hours on, or source code you forgot to backup? If so, then you may need to look at commercial software that can recover any type of file, including partially overwritten files. Recovering partial data is better than recovering no data at all.

The single most important thing to consider when you inevitably lose your data is *what* are you trying to recover. Are they Microsoft Word documents, Excel spreadsheets, Quicken files, executables, mp3's, gif's, jpg's, pst's, and so on. Most data recovery software specializes in certain data types so knowing what you want to recover will save a lot of time. There are recovery programs that specialize in searching for specific file types like Microsoft Office documents, and do so with ease and efficiency. If you know what file type you need to find, then using one of these specialized programs could prove invaluable.

Not only are there many data types, but there are just as many file systems. The most common file systems will be FAT16/FAT32, NTFS/NTFS5, HFS/HFS+, Ext2/Ext3, and possibly Reiser FS. You may even have a RAID array that needs to be recovered, so consider all of this while looking for data recovery programs. FAT and NTFS file systems will be most common on windows systems, but you will often see these file systems on Linux drives and USB thumb drives for portability. Not every data recovery suite is going to be able to read all of these file systems; therefore it is better to know beforehand which files systems you have. Some recovery programs will recognize all types of file systems, but most are specifically geared towards Widows and the FAT/NTFS systems.

Once you know what types of files and which file system you have, you can then start looking at programs to recover your data. When a file is deleted from a system, it actually still resides on the hard drive. The OS thinks it doesn't exist, which is where the data recovery program comes in. Generally, only a pointer to the file is removed so it is simple to recover deleted files since the original file is still there, along with all its metadata. As long as the system does not use the unallocated space to write another file, it is extremely easy to recover files. Most automated Window's GUI based data recovery programs can recover deleted files with ease. Some are similar to just moving programs out of the recycle bin, so watch out for those programs. All the program has to do is scan a hard drive for files with no pointers, then BAM your *deleted* files are recovered. But what happens when part of that file has been overwritten by another file? Ah ha, that is where the boys are separated from the men in the art of recovering data.

Good data recovery software will also have the ability to read the hard drive at the bit level and use whatever metadata it finds to identify the file. There may even be a database of file signatures the program uses to compare the files to. Each file has signatures in the metadata to tell the OS what type of file it is. Data contained in the metadata includes file permissions, created, modified, and deleted timestamps, as well as a whole host of other information. Even if a file is partially written over, data recovery software should be able to use this information to at least partially recover the file. While it may not seem like such a big deal to recover only partial files, just imagine how much time will be saved if you are able to recover most of your spreadsheet so you don't have to start over.

You are not always going to know a specific file that needs to be recovered, so a program should have a means to categorize the recovered files and perform specific searches using the metadata. For example, you may have several files that need to be recovered so you want to be able to tell the program x file types and/or this date range. Once it finishes scanning your hard drive for lost files, there needs to be a mechanism in place for parsing the data. Some software allows searches by keyword and file type at the very least. The most useful and accurate searches will use regular expressions to parse the data bit for bit. This is what forensic investigators use and will most likely be the higher end and most accurate data recovery tool.

Last, you need to look at the program's ease of use and learning curve. Is it GUI based or command line? Depending on the ability of the program to actually recover data, this is in large part a personal choice. All in all, there are many factors to consider when looking at data recovery tools. Knowing in advance what you need to recover will help find a program specifically tailored to fit your needs.

by *Clint P. Garrison*
MBA, MS, CISSP, QSA

Opinions

Photorec

I chose photorec to recover a hard disk that was accidentally formatted from NTFS to EXT3.

We used this tool because of the urgency of the situation, with addition of stress from the client and having not been prepared for the situation. We had not had experience with other utilities.

The utility works well for most situations, it is very easy to run, and has a list of files collected so far, even sorted into a few categories (mp3s,doc,xls,txt,rtf,other,etcetera). A full list may be acquired here. It even found some data from three plus formats ago.

The only caveats one may find is that it takes about twenty-three hours for an 5200 rpm eighty gigabyte hard disk and that it may be discomforting to use a command line. As well as the fact that some files were corrupted (mostly excel files). One problem that appeared before me was that I failed to recover a financial report, however all other data was recoverable from the hard disk, and I had backups for most other items.

I would recommend *photorec* to other users/ companies. This utility is reliable, though the best policy is to keep backups often.
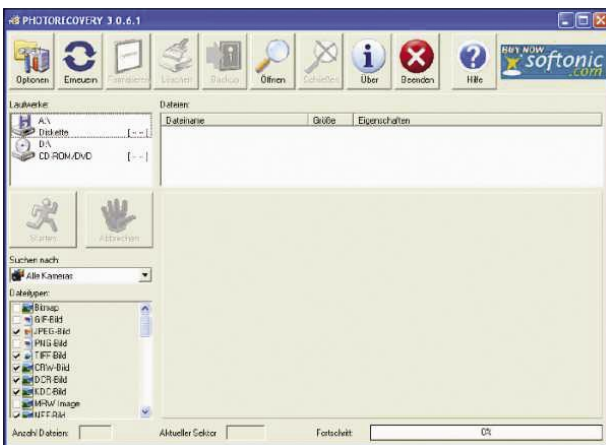
Final note: 8

by *Justin Peacock*

Figure 1. *Photorec*

Custom built hardware and software, and linux tools

We do commercial data reco's – hardware and software, that is why we chose these kind of tools. PC3000 was also under our consideration, however the price was too high.

Our previous experiences were with Ontrack, GetDataBack and a custom interface board. We needed access to firmware and other things that consumer grade software can't do. We decide to get this mentioned above.

Tool works fine. It was designed to our specifications so it meets them all. Advantages are the ability to access drives faster, modify firmware if needed. Disadvantages are that we have to hire programmers for any changes, so it takes more time but this is not a big problem. Surprisingly, we have not got any problems or breakdowns. We wish it would last forever.

Its proprietary – being a few years old I would recommend a redesign with modernizations to it.

Final note: 8

by *Chris Bequeath, owner – Business Network Solutions*

Stellar Phoenix FAT & NTFS v 2.1

The computer suddenly would not boot and had the error message, damaged File allocation table. I changed hard drives, having a clone of the C: drive, that was six months old. After the system was running I was still unable to access the one drive.

Stellar was good choice to recover my files.

I had problems with lost files several years ago and used few other products. But I have tried Stellar Phoenix and went right to it. My recent problem was getting the program to recover the data it located.

I would recommend it to others and actually I have already done it. I must say that I am pretty satisfied with Stellar software and the technical support that I have received.
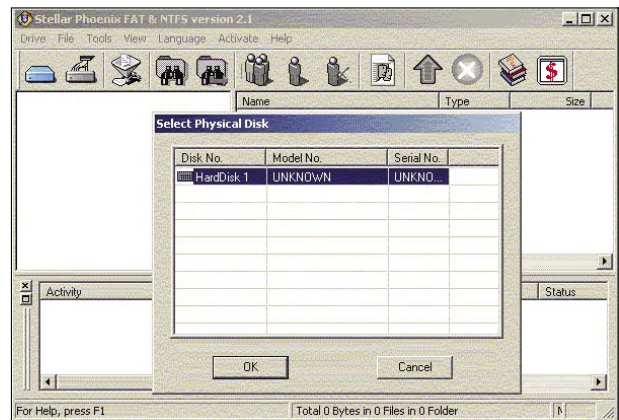
Final note: 9

by *G. Harris – Stellar Client*

Figure 2. *Stellar Phonix FAT & NTFS v 2.1*

R-studio

I need to recover data from my corrupt HDD. I came up on a Google search and found a tool suitable for me – R-studio.

I do not remember exactly if I had other tools in my mind. The biggest factors in this one were price, and that the site had a working demo that could show me that it would recover the data before I paid for the tool.

Previously, I had conducted data recovery of specific files using hex tools and reading raw information from the disk, using a Symantec tool. I cannot remember what that tool was though. I changed it because of the volume of files that I was recovering. R-studio software is fine. Main advantage is that it can save scanned disk images so that you do not have to scan for files again. Disadvantage: comes in different flavors, cannot recover fat32 drives with NTFS version. Apart from that I did not notice any serious problems.

I would recommend it to others as I was recommending it via my forum ever since I first used it.

To sum up I can say that it works great, but has limitations in that it comes in NTFS version or FAT

version, or Linux version, can get a suit but costs a lot for one time recoveries.

Final note: 8

by *Daniel Rainbow – moderator of :
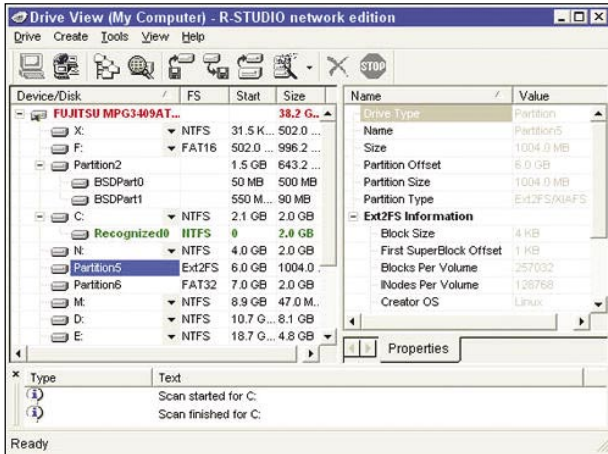www.computerforums.org*

Figure 3. *R-studio*

GetDataBack for NTFS/FAT

I formatted my disk drive and actually got my data back, but not the music, as it was garbled. I found GetData-Back and it fullfilled my expectations. I did not think about other kinds of data recovery tools. I own one for personal use, if I ever need it. Once I find a good one, I don't go elsewhere. Any additional seeking is not needed.

For me GetDataBack works alright. An advantage is that it actually works. The disadvantage is the time of process. It scans the surface. Another one is that the trial does not work. You get a preview, but you need to buy it. Needless to say, I bypassed it.

I have not used it that much for it to die on me, so I did not notice any big problems with functioning of this software.
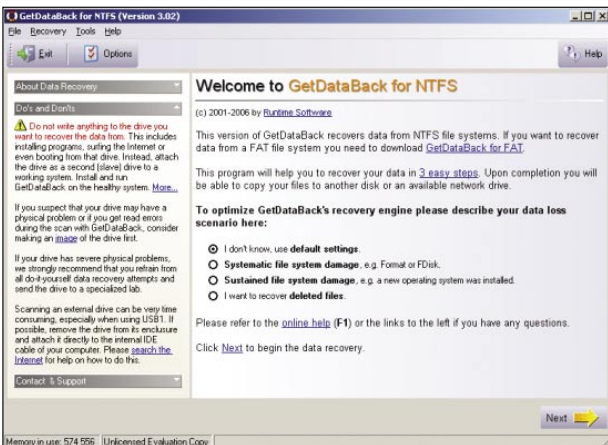
I would recommend it to others.

Figure 4. *Get Data Back for NTFS/FAT*

Final note: 7.5

by *Marc-Andre – moderator of :
www.computerforums.org*

Stellar Phoenix FAT & NTFS v 2.1

I had really huge problems with the disk surface (there was no mechanical noise). Defrag hung and then the laptop would not boot. There was no mechanical noise at any time during recovery, but there were a lot of read re-tries. Now I have the data, I reinstalled the disk in the laptop and used the Toshiba recovery disk to try to rebuild the drive, but the disk was not recognised. I have ordered a new disk.

Before current tool I used RTT R-Tools Technology R-Studio. But finally get Stellar which enable me to solve my problems.

I didn't have any difficulties with Stellar. It simply works fine. I would recommend this software to others without any doubts.
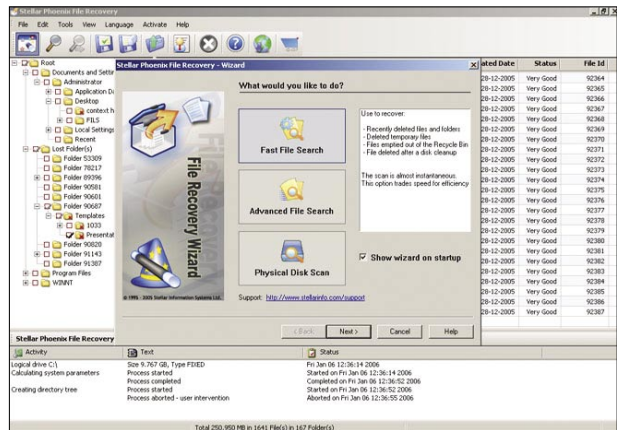
Final note: 10

by *I. Fisher – Stellar Client*

Figure 5. *Stellar Phoenix FAT & NTFS v 2.1*

DigitByte Studio – CD/DVD Data Recovery 1.0.618

I chose DigitByte Studio due to corrupted files on my DVD (music and short videos). I knew that there are many more tools, but I needed to recover my files fastly and this was one of the first which I was considering and had good opinions so I bought it.

I was using one software before that, but do not remember the name. It was quite a long ago. Its capability to recover files was in average level, ultimately I was not satisfied.

In the beginning, I had few problems with installing but it was because of my computer, not the software. Now everything is alright. It works good. The main advantage is that the process of recovering is going very smoothly, without any errors. However duration, is quite long comparing to other tools.

I would definitely recommend DigitByte Studio to everyone who have problems with their CD or DVD. It has all

features needed to get back your lost data. And the price is reasonable.

Final note: 9

by *Matthew Robinson – student*
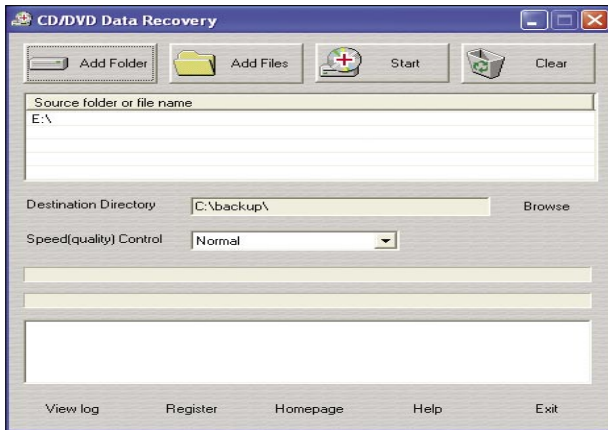
Figure 6. *DigitByte Studio – CD/DVD Data Recovery 1.0.618*

Recover My Files

I had a lot of data on my HDD. Mostly photos, videos and PDF. Accidentally one of my roommates deleted all files. In the beginning I was very angry with him cause these things were very important for me, but I thought that all or majority can be recovered, so I started to look for a suitable data recovery software. I saw that Recover My Files has a good comments so I downloaded a trial version. I was dissapointed because it did not seem to recover all files! What is more, it lasted long hours to scan all my drives in search of deleted files. I thought that my adventure with this tool will be finished but my colleague told me that full version is capable to restore my lost files.

I purchased full version. It worked. I have not got any problems with installation or whatever. I was able to revover almost all of deleted data, although it took some time to do it... But ok, I was satisfied with the result. The main advantage of a full version is its high

Figure 7. *Recover My Files*

capability to finding and recovering files (comparing to trial version!). Disadvantage is, as I wrote, lasting of process.

I would recommend full version of Recover My Files to others, but do not try trial version, if you want to save your time.

Final note: 7

by *David Calmeter – student*

Data Rescue II and Data Rescue PC

I am an IT professional who needs a reliable data recovery tool that allows me to recover data from client computers as well as my own. Prosoft programs that I have site licenses to use at my office and at client locations include Data Rescue II and Data Rescue PC. I have used the software tools to recover data that was accidentally erased and to extract files from hard drives that have failed or were on the verge of failing. On Macs, I will use CopyCat X in addition to Data Rescue II.

In years past, I have had mixed success using Norton Utilities to recover data from PCs. These days, I prefer to rely on Data Rescue PC to recover data from Windows computers because its self-booting disc can start and recover data from systems that Norton cannot help.

I have been satisfied with the results I obtain from the two programs. I recognize that I am not going to be
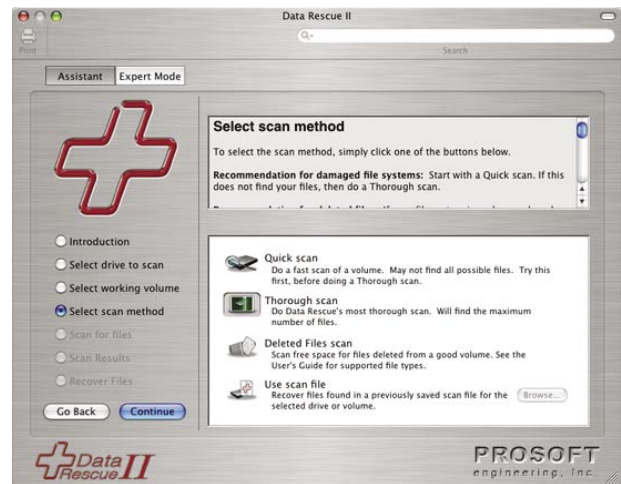
Figure 8. *DataRescueII*

able to recover all data 100% of the time and that severe drive failures require running Data Rescue overnight or longer. I recently ran Data Rescue II on my Mac and completed a thorough scan of my 250GB drive in less than an hour. I have not experienced any breakdowns with these software, so I definitely would recommend them to others.

Final note: 9

by *Dale Komai – President of Macsolvers, Prosoft Client* ●