COMPUTER DATA RECOVERY

VOLUME3

CONTENT

Data Recovery/Datenrettung & Securing Data On Computers

Data recovery or Datenrettung is the process by which the data is recovered from damaged or inaccessible storage media. Data recovery is done from storage media like CDr's, DVDr's, Floppies, Hard disks, Magnetic tapes etc. There are two reasons due to which the data becomes inaccessible. They are logical damage and physical damage to the storage media.

Physical damage to storage media can occur in many ways. Magnetic tapes can break, get crumpled or dirt may settle on the tapes. CDr's and DVDr's can have scratches or the metallic layer may get damaged. Magnetic heads in hard disks can crash or motors may fail. The floppy is notorious for failing frequently due to bending, overheating, cold, dust etc.

There are other reasons like fires, electrical surges etc that can cause data to become inaccessible or lost. There are many methods by which data can be recovered from magnetic media or optical media. The methods most commonly used are Magnetic Force Microscopy (MFM), Scanning Probe Microscopy (SPM), Magnetic Force Scanning Tunneling Microscopy (STM) etc.

In these methods a sharp magnetic tip is placed closed to the surface to be analyzed. It interacts with the stray magnetic field. An image of the data is generated and then repairs are carried out on logical damage and thus the data is recovered. Many companies carry out data recovery.

Logical damage is the damage to the file system. It is not physical but a software problem and also tells us that we need to be cautious and have a quality system for data recovery, datenrettung. It generally occurs due to power cuts, system crashes etc preventing file system structures from being written resulting in file system being left in an inconsistent state.

Logical damage is more common than physical damage. This may cause strange behavior like infinitely recurring file directories, loss of data, system crashes, hard disks reporting negative space etc. The end result is that the operating system cannot mount the file system.

Most operating systems come with repair facilities like, Linux has fcsk utility, Mac has disk utility and Windows has chkdisk facility. There are other specialized programs available which have better repair facilities than the operating systems.

There are also other systems called journaling file systems like NTFS, EFS (used in Windows XP), ext3 and xfs which can be reverted back to their earlier consistent state. These file systems reduce the amount of data loss.

Data back up is the best way to prevent loss of data and itr's the most common system for data recovery, datenrettung. The simplest method is to keep data on drives on which the operating system is not loaded. The other method is to write data on magnetic tapes, CD's or DVDr's or have online backup.

Backups are very important for databases. Data backup is of 3 types. Full backup means backing up all data. Incremental backup means backing up of only the files that have changed. Differential backup is a mixture of these two. There is another method called continuous data protection in which when data is written to a disk, it is also written to another computer in a network.

Most private persons with a computer do nothing in advance, they just use their computers. Too late, when an incident has happened they learn about data recovery or datenrettung.

Data Recovery First Aid: 3 Tips To Increase Your Chances Of Success

Let's get to the important part first - if you've just lost your data, skip past this introduction and go directly to our first tip, so you can start your rescue operation. If not, a few minutes spent now might help you a lot in the future. Pay special attention to our third tip.

I always thought of myself as a reliable guy with reliable data. I never deleted my files accidentally, I made regular backups and had a power supply for my computer to protect me against surges and outages. However last year I experienced two cases of data loss where I needed to use recovery software. The first was a dead hard drive that'd hardly served a year. Subsequently, I accidentally deleted a large project file that

was too big for the Recycle Bin. Happily I've got all my data back, thanks to good advice and a little preparation.

These handy tips will help you stay confident in the face of data loss, no matter how it occurs.

Tip #1: Use your system as little as possible until you recover all of your lost files. The more activity taking place on your hard disk, the greater the chance that some of your lost data might be written over.

- Don't copy any files to the disk containing your lost data;

- Avoid browsing the web, because your web browser saves cache files on the disk;

- Don't launch any unnecessary programs, because they can also use your disk;

- Don't restart your computer.

Tip #2: Before you go further, take steps to free up some space on the disk containing your lost files. The more free space your system has, the less chance of overwriting any lost files with new ones. You can do one or more of the following things.

- Delete old files that you don't need anymore (you can also move them to another source, like a USB flash drive, instead of deleting);

- Empty your Recycle Bin - making sure that you haven't put any important files in there by mistake;

- Empty your browser cache. For Internet Explorer, click on the "Tools" menu, then select "Internet Options". Then, on the "General" tab, click the "Delete Files..." button.

Tip #3: To install any software after data damage increases the risk of your data being overwritten, so if you haven't had any data problems yet, consider installing a data recovery program just in case. Prevention is always better than cure, and a recovery program is good insurance for your data. However, if you don't yet have a

recovery program, find one and - if possible - avoid installing it to the disk where your lost files are located.

Most recovery programs work fairly similarly. You need to select the disk where the lost files are located, let the program analyze the content of the disk - this can take a while - and then select the file you want to recover. Then, provide a location where you want to save that file. You should try to avoid recovering files to the same disk. You could use another hard drive, a network or removable media like a floppy disk or USB flash drive.

After you recover your files, check that they are correct. If you've recovered applications, check that they still run, or if you've recovered documents, check that your words are still there. Even the best recovery software can't guarantee 100% results. If some parts of your files were overwritten - meaning that other data was saved to their location on your disk - after recovery they might contain invalid information. Depending on the type of file involved, partially recovered files like this can be mended by special utilities.

Data Recovery Procedures For Hard Drives

Your computer's data is at risk. Whether you use a Mac or a PC, viruses, power surges, hackers, human error, natural disasters, hardware failures, and more are real everyday threats. To keep your data safe and sound, you will first need to back up your files on a regular basis. Secondly, when hard drive failure does occur, data recovery is the only solution.

Of course it is ideal to back up data and avoid the complicated process that is data recovery altogether, but even when you take the necessary steps to prepare for hard drive damage, you might run into problems.

Here are some procedures to follow if you experience trouble.

If a program is not functioning well on your computer, turn the computer off! This may seem a simple task, but shutting down a computer at the moment you notice your hard drive to be working overtime – perhaps you hear unusual sounds (like "cleaning") – can prevent damage to the disk and data loss. If you let a failed hard

drive run, it will eventually self-destruct. Damage to your disk is inevitable in this scenario.

If this is the case, unless you know exactly what you're doing, don't fix your computer yourself. Professional expertise is not a luxury in this situation – it is a must. Data recovery is a difficult and sensitive process requiring special tools and a clean environment. Not only will it be tremendously challenging to repair a hard drive on your own, but you might actually make matters worse and ensure irreversible data loss.

There is "do-it-yourself" data recovery software, but be cautious of things like this. With most computer problems of this nature, at-home instructions can be more dangerous than useful. Even if a company boasts that its products and instructions will handle your vulnerable data properly, it is important to be a skeptical consumer.

A local service provider is the average solution. Repair can happen on your own premises and you can be assured that your computer is in good hands. However, there is always the possibility that your hard drive is beyond repair – even for expert technicians – so be prepared to buy a new hard drive altogether; data recovery may not be an option any more.

Data Recovery Services: What To Do When Your Hard Drive Fails

According to most people, there are two types of hard drives: those that have failed and those that will fail. But for folks who use Data Recovery Services, there is a third type of hard drive: one that does not fail.

A hard drive is the most vulnerable part of a computer; it has moving gears and is hence prone to wear and tear. So when you need hard disk data recovery, you must deeply consider the service and practice of the various repair companies in your area. A company that has been around the block more than a few times is ideal.

But more importantly, experts that ask questions and appreciate your situation are a necessity; companies that approach your needs in an impersonal way simply cannot diagnose your computer problems properly. For example, an expert who is on hand to ask specific questions about your hard disk will know whether or not to go about repair with mere software or through more professional means.

There are a variety of problems that lead to hard drive failure. If the hard drive is part of a mirror set, mirrored stripe set, or stripe set with uniformity, then all you will need to do is replace the drive – any lost data will mechanically regenerate.

A local service company can handle all your concerns though. Fixing a hard drive yourself is a tedious process, requiring lots of time and even research. Your next-door neighbor might be a computer geek, but that doesn't mean his or her advice is remotely accurate. After all, a computer can fail for many different reasons and they are not always easy to pinpoint.

The ideal solution is usually to replace a failed drive and re-establish your backup. This does not always work though, as many people find the necessary backup is outdated or sometimes, non-existent.

If a hard drive is beyond repair, data recovery is obviously not an option. So prepare for unexpected charges; you might have to buy a whole new drive. In this case, just be careful when replacing it, as you don't want to lose your data.

Data Recovery Software: Your Options for Successfully Recovering Disks, Files and Data

Today's computers are much more reliable in general than the older generations. Modern hard drives fail less frequently, and they warn you well in advance about upcoming failures with the recently adopted SMART monitoring.

Modern hard disks have greater storage capacities than their predecessors. Retaining the same physical size, they feature a much higher storage density, allowing storing more files on the same space of their surface. And hence the big problem: if your hard drive fails, you have a lot to lose. Much more than you would just a few years ago, with much less chances to get your data back without precision tools and clean labs.

While there's little you can do about a physically damaged hard drive except send it to a dedicated data recovery service, there's still hope if hard drive failure didn't cause it to stop spinning. Even if your disk is not accessible from Windows you can still access it with dedicated data recovery tools such as The Undelete NTFS Partition

Recovery http://the-undelete.com/ntfs_partition_recovery.php or other FAT and NTFS partition recovery tools such as http://www.softinstitute.com/partition-recovery.html

These tools used by non-professionals can often recover damaged partitions and restore the hard drive to its original condition. Is it safe to use the same drive after it failed once? Maybe, depending on the reason of the failure. If data corruption occurred because of a system crash or a power failure, your hard drive is probably unaffected and should be used without a trouble. If a badly written application caused system instability and data corruption, it's not your drive's fault, and you should not be concerned about its reliability.

Data Recovery Tips

Data recovery becomes necessary when your hard drive, memory card or USB flash card fail, and you have no backup available. This article gives an idea on the necessary steps and precautions during the data recovery process.

Before attempting the recovery, you must be aware that the data cannot always be retrieved. In case of a physical failure of a hard disk such as the infamous "click of death" situation, you won't be able to do much good to the hard drive except bring it to the recovery experts. Modern hard drives, however, are complex yet reliable pieces of electronics. They rarely fail for no reason, at least on a physical level.

Logical corruption prevails with the complex operating systems, buggy software, malicious or careless acts of the end-users, malware and viruses. Power failures and computer hardware malfunctions also account for many cases of corrupted hard drives and lost data.

The logical corruption can be dealt with at home. Provided that you have the right data recovery tools, you'll be able to do it yourself without any special skills.

Be aware that the data recovery process is a lengthy one. You'll need plenty of time and enough space on a working, non-corrupted hard disk to facilitate the recovery. Before you begin, make sure that you restrict any write operations onto the damaged disk. If you don't have data recovery already installed on your computer, don't save or install the data recovery product onto the corrupted drive. Instead, use a

different drive letter, a flash memory card or a USB drive. Even a flash card from your digital camera can be able to store the data recovery tool!

The choice of a proper data recovery tool is a very important one. If you have no previous experience in recovering data, choose one that offers maximum level of automation for an inexperienced uses. It's a good idea to make sure that the tool you pick allows saving a copy of the damaged disk onto a healthy one in order to work on a backup copy instead of operating the live disk. Mareew Data Recovery by http://mareew.com is a good choice for the inexperienced user.

Further data recovery steps depend on the data recovery software that you choose for the job. If you settle with Mareew Data Recovery, there's not much to talk about. Mareew Data Recovery can optionally create a backup copy of the damaged disk (I highly recommend that you do so), and performs all recovery operations on the copy instead of the original. If something goes wrong, you still have the source hard disk in its original condition; just make another copy and try again.

The data recovery process is pretty straightforward with Mareew Data Recovery. You get a step-by-step wizard that guides you through the recovery process. Even if you don't read the prompts except the choice of the damaged disk if you have more than one in your system, and simply click the 'Next' button several times, you will be able to recover the damaged disk!

Mareew Data Recovery is able to fix the most complex issues with modern hard disks. Corrupted file systems, bad partition tables, FAT or NTFS failures are not a problem. Most importantly, Mareew Data Recovery values your data more than the integrity of the system structures. You'll have a chance to save your documents, digital pictures and archives from the damaged drive before attempting the recovery. All in all, a highly recommended tool.

DBF Repair Tool for your Databases

Today, we are living in the era of database-driven applications and rely on databases more that we could imagine even in the recent past. Information is valued much higher than any hardware or software tools used for its processing. However, the risks associated with database crashes or corruptions increase proportionately to

the intensity of their use, making a broken database a nightmare for any accountant or business owner, especially when a backup is unavailable.

The DBF file, unfortunately, is not 100% crash-proof, just as any other database format in the world. If your DBF file is corrupted or damaged, standard DBF readers may not be able to help you get your data back - all you will see is undecipherable abracadabra or nothing at all. Luckily, there are tools out there that will make a DBF repair procedure a real breeze. DBF Recovery from HiBase Group is an affordable and highly efficient application that is intended for repairing DBF databases and recovering your important information. Not only does it retrieve and fix headers, but, unlike the majority of its dbf fixers, also runs an in-depth analysis of the database structure in an attempt to fix it completely.

The great thing about DBF Repair Tool (http://www.dbf2002.com/dbf-recovery/) is that you don't need to have a Master's degree in computer science to do your first DBF repair. The program was created for all categories of users that need immediate assistance whenever they are experiencing problems with their database. When pointed to a broken DBF file, the program determines the data format automatically. The program supports all specific file formats used by the most popular database management systems, such as Dbase III/IV, FoxPro, Visual FoxPro and others. Once this is done, all you have to do is lean back and watch DBF Recovery work its magic. The completely automated recovery engine will scrupulously scan the internal structure of the file, identify discrepancies from the normal state and attempt to restore the data.

The DBF repair process may take a while, depending on the size of the file. However, rest assured that DBF Recovery is pushing the envelope to recover your data with maximum accuracy. In fact, its recovery success rate, combined with the obvious simplicity of use, affordability and compact size make it one of the top utilities of its class. Not only is it a must-have for any serious system or database administrator, but also for regular end users who would like to be protected from such an unexpected force majeure as data loss after a database corruption.

You cannot control everything in this world and accidents sometimes happen. Don't forget to buckle up when you get into a car, as it may save your life. Don't forget to get yourself a copy of DBF Recovery, as it may save the most important thing in today's business - your information. Have a nice ride!

Not sure if you can recover your disk and data yourself? Disk Recovery Wizard works completely automatically after asking you a few simple questions about the disks and files you want to recover. Its intuitive, wizard-based interface conveniently guides you through the recovery process. Being simple to use, Disk Recovery Wizard is not a simple tool. The advanced disk and data recovery algorithms make it one of the most powerful data recovery tools on the market. Any data recovery application can undelete the deleted Recycle Bin items, but only a few are able to do it after you do it over and over again. Disk Recovery Wizard carefully reconstructs your files and documents to make sure you can actually use the recovered documents, pictures and archives even if some parts of them have been overwritten with other data.

Still not convinced? Disk Recovery Wizard does not make false promises, offering you a complete Live Preview of your deleted files and documents before you pay. Just download the free evaluation version, scan your disk and select any file to see its contents immediately.

Are you on the edge of technology? Using the newest and latest hardware? Disk Recovery Wizard fully supports the huge disks of today formatted with any version of FAT or NTFS file systems in any version of Windows since the ancient Windows 95 to the newest Vista. A fully automatic data recovery is easily possible from local hard drives as well as digital photo cameras, memory cards, SD, CompactFlash, Memory Stick and USB drives.

Emergency File Recovery with Undelete Wizard

Recovering deleted files has to be easy, and it is when you use Windows Recycle Bin. But what if you've emptied the Recycle Bin? Or even worse, what if the Recycle Bin has never been enabled on your system?

Wait a second. Aren't pictures and documents just different kinds of files? They definitely are, but here goes the best part: Undelete Wizard recognizes your values and priorities, and implements a set of special algorithms to locate the deleted Office documents, digital pictures and ZIP and RAR archives on the surface of your hard disk even if all traces of them are gone long ago!

Restore deleted files and recover deleted Word documents, Excel spreadsheets, PowerPoint presentations, email messages, ZIP and RAR archives,

digital pictures and all other types of files with Undelete Wizard! Empty Recycle Bin or no Recycle Bin are not an issue for Undelete Wizard to recover deleted files. The deleted file recovery wizard thoroughly investigates the file system in order to locate the recently deleted files, and scans the entire surface of a disk that contains the deleted files. The unique pattern-matching technology identifies the beginning and end of documents, images and archives by performing the same type of signature analysis as implemented in anti-virus products.

The pattern-matching technology for file recovery can often recover files, pictures, archives and documents that were erased ages ago. But what would you do if the recovered file is corrupted? The deleted files on a hard disk are essentially free space that can be claimed by any program to write a new file over it. Quite often only a few blocks of original data are overwritten, and the rest remains intact on the disk. You wouldn't be able to view a picture with a missing block or two. Microsoft Word would not open a corrupted document. But even then you are not left without options! Undelete Wizard recovers corrupted documents and digital pictures so that you can still open them with no problem.

Undelete Wizard implements a number of advanced file recovery algorithms, yet using them is extremely simple. What you get is a straightforward step-by-step file recovery wizard that guides you through the file recovery process by asking simple questions like "What disk were your files on?" or "Do you remember the exact location of the deleted file?"

By integrating sophisticated technology with ease of use, Undelete Wizard is a sure bet on the crowded deleted file recovery market. To convince you to try this product, rest assured that it stands to its promises: thanks to the built-in live preview feature, Undelete Wizard displays you the contents of the deleted document, archive or digital image before you pay for a license.

Fast and Reliable Recovery of Microsoft Office Documents

What would you value most in a data recovery solution should you lose an important document? Would it be speed, convenience, or ease of use? These things surely matter for all kinds of computer software, but data recovery has one specific demand that outweighs everything else by a huge margin. This factor is reliability of the recovery.

Microsoft Office documents store results of many hours, days or even years of work of practically all office employees and most people who use their computers at home. Microsoft Word dominates the market of word processors, and most if not all documents are stored in RTF and its proprietary DOC formats. Microsoft Excel and its XLS file format dominate spreadsheet market. Most presentations are created in Microsoft PowerPoint and stored in PPT files, and most charts and drawings are drawn in Microsoft Visio and saved as VSD files. Combined, files in these formats occupy significant space on the users' hard drives, and represent hours and hours of work, much more than any other file format.

In an unfortunate case of hard disk crash or file system failure, what would you try to recover the hardest? Would it be a set of software products such as Windows or Office itself, which you can easily re-install from the original CD or DVD, or would it be files and documents you spent your personal time working on? Unless you have a fresh backup of your documents somewhere, the documents are impossible to simply re-install. If you have a recent copy of your Office documents, that's great! But what if your backup is several days old, and you've put a lot of work into these documents? Or even worse, what if you don't have a backup at all?

Recover latest versions of your deleted documents even after a hard drive failure with DiskInternals Office Recovery securely and reliably. Unlike general-use undelete and data recovery tools, DiskInternals Office Recovery strongly benefits from being designed specifically to handle documents stored in Microsoft Office format.

General-use recovery products scan the computer's file system in order to locate files that were deleted or corrupt because of a hard drive failure. However, they frequently fail to work properly if the file system itself is damaged, which happens a lot after hard drive failures.

DiskInternals Office Recovery scans entire surface of your hard drive in order to locate all Microsoft Office documents that are still there. In order to find the documents, it uses a set of signatures that are characteristic for the Office file types. The file system is also scanned in order to retrieve the names of the files. The results of disk scan are matched against information contained in the file system, and you are presented with a complete list of all Microsoft Office documents that are on the disk and that are still possible to recover.

Quite often you don't want to see the list of all Microsoft Office documents that were ever saved on your computer. There's no point in spending time scrolling through an endless list of files if you just need the latest revision of a PPT presentation or an XLS spreadsheet, but you need that document right away. DiskInternals Office Recovery offers an extensive set of filters allowing you to display only the files that you need with just a few mouse clicks. If you need a DOC file that you know you worked with today, you simply activate the File Format and Date filters, and only the Word documents that were modified on this day will be displayed. If you don't remember the name of the file, but know its title or the person who created the document, the Title and Author filters will show you those files. Similarly, if you only remember a line or even a few words of text from the document, you can instantly locate that particular file by activating the Text filter.

Fix and Recover Corrupted DBF Databases Automatically

Heavy-load workstations and busy environments are home to most database applications. A system crash or a power failure can easily damage an open database, causing loss of data and corrupted database structures. Once the problem is fixed and the workstation rebooted, the corrupted database will fail to open.

What would you do when pressured to get the database up and running right away? Reach for a backup just to discover it's a week old, or attempt to recover the database, risking causing irreparable damage to what's still left?

Don't panic! If your database uses DBF files, your chances to get back all of the original data are extremely high if you use the right tool. Even if you don't know anything about the internal structure of DBF files, you still can get it fixed easily and automatically.

DBF Repair tool by www.dbf2002.com/dbf-recovery/ recovers damaged and corrupted DBF files completely automatically. You can be a professional database manager or a complete novice - DBF Recovery will repair the broken database regardless of your experience. With DBF Recovery, you simply select the corrupted file, and the program does the rest completely automatically.

Why paying for DBF Recovery instead of just using any of the numerous recovery tools that claim to repair your database in a matter of minutes? While DBF

Recovery may not be as fast and as cheap as its freeware competitors, it does a much better job in correctly repairing the corrupted database structures and data records. Unlike many free database repair tools, DBF Recovery does not limit its operation to just the headers. The newly developed database recovery engine automatically detects the exact file format and database that created a DBF file, and thoroughly analyzes and repairs the structure of the database as well as all data records, resulting in the most comprehensive and quality recovery.

Have more corruption in supporting files? DBF Recovery fixes memo-files such as DBT and FPT in addition to DBF.

While new database administrators will certainly appreciate the unprecedented level of automation and the ease of use provided by DBF Recovery, expert users will enjoy the advanced features that provide even more automation to the database recovery process. Comprehensive command line parameters and batch mode support allow using DBF Recovery to process multiple databases automatically, or to fix certain database files on Windows startup.

Novice database users and advanced system administrators will appreciate the time savings provided by DBF Recovery. Supporting all DBF databases, including Dbase III and IV, FoxPro and Visual FoxPro, DBF Recovery is the perfect choice for a concerned database administrator. Download a free evaluation version of DBF Repair and rescue your DBF databases after corruption!

Hard Disk Failure and Data Recovery

Hard Disk: An Introduction

Hard disk is a non-volatile data storage device that stores electronic data on a magnetic surface layered onto hard disk platters. Word Hard is use to differentiate it from a soft, or floppy disk. Hard disks hold more data and can store from 10 to more than 100 gigabytes, whereas most floppies have a maximum storage capacity of 1.4 megabytes and in addition are faster too.

Normally term hard disk is much familiar with computers only but it is widely used as network attached storage for large volume storage. Furthermore, appliance of

hard disk drives spread out to video recorders, audio players, digital organizers, digital cameras, and even in latest cellular telephones.

Reynold Johnson invented the first hard disk in 1955 for IBM 305 computer with fifty 24 inch platters and total capacity of five million characters, and in 1956 - first commercial hard disk was launched with 5 megabyte capacity, the IBM 350 RAMAC disk drive. Within time frame of 50 years and rapid progress in technical enhancement, we have now reached to latest 2006 - First 750 GB hard drive from (Seagate) and First 200 GB 2.5" Hard Drive utilizing Perpendicular recording (Toshiba).

Heart of hard disk consists of four basic components:

The Platters: Platters are the actual disks inside the drive that store the magnetized data. Conventional platters are made of a light aluminum alloy and coated with magnetize-able material but latest technology uses glass or ceramic platters as they are thinner and also heat resisting. Most drives have at least two platters and the larger the storage capacity of the drive, the more platters there are.

The Spindle Motor: Hard disk drive consists of a spindle on which the platters spin at a constant RPM. Moving along and between the platters on a common arm are read-write heads. The platters in a drive are divided by disk spacers and are clamped to a revolving spindle that turns all the platters in a uniform motion. The spindle motor is built right into the spindle and rotates the platters at a constant set rate ranging from 3,600 to 7,200 RPM.

The Read/Write Heads: Read/write heads read and write data to the platters, and each head is fixed to a single actuator shaft so that all the heads move in harmony. Typically, only one of the heads is active at a time either reading or writing data. When not in use, the heads are inactive, but when in motion the spinning of the platters generate air pressure that lifts the heads off the platters. The space between the platter and the head is so minute that even one dust particle or a fingerprint could disable the spin. When the platters cease spinning the heads come to rest, at a preset position on the heads, called the landing zone.

The Head Actuator: All the heads are attached to a single head actuator arm, which moves the heads around the platters. The Actuator arm moves the heads on an

arc across the platters as they spin, allowing each head to access almost the entire surface of the platter. Contemporary hard drives use a voice coil actuator, which controls the movement of a coil toward or away from a permanent magnet based on the amount of current flowing through it. Fundamental structures of all hard disk are same, and are composed of the same physical features, but their performance depends on the quality of their inner components.

Hard Disk Failure

Hard Disk Failure occurs when a hard disk drive malfunctions and the accumulate data cannot be accessed. It may happen in the course of normal operation due to an internal or external factor.

Disk failure varies and the most common is "Head Crash" where the internal read and write head of a device touches a platter or magnetic storage surface often grinding away the magnetic surface. Head hover just micrometers from the platters plane which makes such collision a common one.

This sort of crash usually invites severe data loss and unprofessional data recovery attempts results further damage to the remaining data.

Hard drive also includes other controller electronics i.e., semiconductors, valves or electronic circuits, and major components such as Platters, Spindle Motor and Head Actuator. Failure of any these devices may cause a hard disk failure. Factors causes disk failure are numerous, yet most common are power surges, voltage fluctuations, electronic malfunction, physical shock, wear and tear, corrosion, exposure to high magnetic waves, sharp impact, high temperature exposure etc.

The phenomena of hard disk failure is raising higher and higher; as to increase the read and write speed, today we have latest hard disk rotating amazingly faster and this immense revolving speed generates massive centrifugal force, a single adverse cause in the course of normal operation can cause severe hard disk failure.

Hard Disk Data Recovery

Hard disk data recovery is the process of recovering the trapped data from the damage hard disk device, when it can not be accessed in normal circumstance.

Several Techniques are used to retrieving data from damaged hard disk and techniques vary accordingly. It can be done by moving disk drive to a working CPU,

or may have to open the disk drive and replace parts such as read/write heads, arms and chips and sometime the platters have to be removed and placed into another drive.

Physical damage can not be repaired by the general users, as it requires clean and dust free lab environment, in addition proper hardware and technical expertise; where under microscopic examination with proper tool and techniques, the damage drive is put on to observation for data salvaging.

In case of worse happening, do consult Data Recovery Service for saving your important data trapped within the damage device.

HDD Recovery Pro - Partition Recovery Software v.2.4.8 New Version Release

HDD Recovery Pro - Partition Recovery Software v.2.4.8 New Version Release

Completely recover files and data from damaged hard drives with HDD Recovery Pro.If you have lost information due to a hard drive failure, you may still be able to recover all your files and documents without knowing anything about file systems, partitions, FAT or NTFS volumes.

There are services out there that will take your hard drive and guarantee data recovery. But did you consider the drawbacks? If you have sensitive information on the corrupted hard drive, such information will fall in hands of a third party. It takes time to mail the hard disk and get your data mailed back to you.

Finally, these services may cost you an arm and a leg depending on the complexity of the data recovery job.You can do yourself exactly what these services do to recover lost data from your damaged hard drive. HDD Recovery Pro automates entire process of data recovery after your hard drive fails, or if you accidentally format it, or even if you simply delete a file or a folder.

Accidentally formatted a hard drive? No problem! HDD Recovery Pro will look for formatted partitions, scan and re-create their file structure, and let you choose files you want to salvage.Even if your disk is completely inaccessible after a crash,

HDD Recovery Pro scans your hard drive for damaged partitions to find and correct corrupted or damaged partition tables.

You don't have to be a computer technician or know anything at all about FAT or NTFS structures. HDD Recovery Pro does its job completely automatically, re-creating all necessary file system and directory structures. All you have to do is select files and folder you want to restore from a simple dialog box, and HDD Recovery Pro will do the rest.

HDD Recovery Pro recovers lost data in most common hard drive failures, including damaged or corrupted drives, inaccessible disks, damaged or corrupted partition tables and file systems. It restores deleted files and recovers data from formatted hdd, flash cards and cameras.

How on Earth do Companies and Organisations lose Data?

Browsing the web I became engrossed with the concept of data backup and data loss. There is almost an almost unlimited amount of information covering subjects such as how to keep computer and server data secure, how to back-up data, how to restore data, how to replicate data, who will remove your backup tapes to an remote location, which companies can restore data from corrupt disks. With all this information and data technology available I keep asking myself the same question over and over again, how and why is data terminally lost?

Much information on one web site does tend to contradict information on another site, but after all, most companies with sites of this nature are trying to sell you their solution so you will never get an overall unbiased picture, but there is one underlying fact which we can not get away from, a fact that is stated on most sites and the following fact that I totally agree with is, "Data is the lifeline of all companies and organisations; if data is terminally lost then the chances of a company trading efficiently or even surviving after 2 years of the disaster not at all good". There are various statistics relating to this fact, but it is accepted that 50% to 70% of companies will go out of business within 1 year if data is lost. It is also acknowledged that everything within a business can be replaced, desks, chairs, buildings, even people can be replaced, everything but the data. Imagine, you sit on a chair and it breaks, you buy another one, you get the picture but imagine the consequences of data loss, you don't know who your customers are, you don't know who owes you money, you don't know

who you owe money to, you don't know what orders you have to ship or who you are supposed to be visiting. Dire times are ahead.

Taking all of the above into account I go back to the original question, if people, companies or organisations understand the true value and importance of their data, how do they manage to lose it? Data loss is totally unnecessary and unacceptable! I honestly feel most IT administrators do have the best intentions when it comes the preservation of data. In my experience data loss stems from only a few sources, human error, lack of resource or lack of planning. Total data loss should never occur when hardware fails.

Human error – I forgot to take the tapes offsite when fire or flood struck offsite tape removal company incorrectly labelled your tapes, I did not test the tape prior to backup and consequently my data was not backed up, I forgot to backup! I did not put my tapes in a secure safe and they were stolen overnight. My backup server crashed in the middle of a backup. The web is littered with stories like this; they are almost a comedy of errors. Responsibility for data backup cannot ever be placed upon the shoulders of one person or one team of people, if there is room for human error, then you have a flaw within you backup system.

Lack of resources – If you work for a corporate, your backup and restore system will have probably cost many hundreds of thousands of pounds. You will enjoy an automated disk to disk system replicated to a second remote location. Even though you are replicating to an offsite location, for added security, you will most likely use this second site to backup to tape. This replicated infrastructure is way out of budget for small to medium enterprises backup to tape is still not a cheap task, by the time you have purchased a tape drive, server to fit the drive into, tape media and the backup software you will have spent at least J3,000, plus backing up to tape in the conventional way is still prone to the same potential human errors. The humans that make the error also have to be paid, if a backup solution is not automated then you will have to employ someone to take care of this, I would prefer my staff to be carrying out more proactive, revenue generating tasks.

Lack of planning – probably a harsh way of putting it, a lack of understanding potential disasters may sound more forgiving. It all amounts to the same thing, but a lack of planning was recently highlighted in the UK when the Bunsfield oil terminal exploded. Companies who backed up to tape and secured said tapes in a fire and water proof safe were cruelly exposed when their building collapsed as a result of the

explosion, backup tapes could not be recovered for weeks as they were in the safe under hundreds of tonnes of rubble. Their ability to trade was rendered impossible. Most companies feel that this situation will never happen to them, but let's put this situation into context, Bunsfield is only the fifth largest and one of over 40 oil terminals and depots in the UK all of which are near major towns and cities, so it could happen to you. This case is one of many where buildings have been destroyed and data has been lost as a result.

If you are still with me you will notice I have only mentioned reasons for and ways of losing data. The rapid growth of cheap high speed internet connectivity and consequently the greatly reduced cost of highly secure, fully automated offsite backup solutions is the reason I ask "how can companies and organisations lose data?"

Offsite backup, also known as remote backup, online backup, is a solution that ticks all the boxes for a small to medium companies with limited budget and resource. Why is this the case I hear you ask? If you deal with a reputable company, remote online backup is cost effective, solutions start at around J25 per month, totally automated therefore requires no human intervention resulting in no human error and your data will always be available as it will be replicated between two data centres. To summarise you have an enterprise class backup solution at your disposal for less than the cost of a low end tape drive.

How to Avoid Hard Drive Overheating

Even though the hard drive stores data, it isn't perfect by any means. Hard drive failure is very common with all computers, with no real way to prevent it. Although there are several different reasons why a hard drive can fail, the most common is overheating. Viruses and crashes are common as well, along with theft and accidental deletion.

With the older style and mechanics of hard drives, the RPM speed was low, meaning that the drives wouldn't overheat. The hard drives we use now days, have speeds between 7,200 and 10,000 RPM, meaning that they can get quite hot when they start working. Computers of this day and age come with fans to cool everything down, with most hard drives including temperature sensors as well, so you can keep track of just how hot your hard drive becomes.

With hard drives today, overheating is a very common problem. The faster hard drives come with speeds of 10,000 RPM, which can make the temperature soar above 70 degrees F, really heating things up inside the drive. The mechanics on the inside are built to withstand the heat, although if things become too hot, you'll encounter problems. If a drive becomes too hot and ends up losing the data, it may be next to impossible to retrieve the information - no matter how good your data recovery specialists may be.

One area that suffers from the drive overheating is the platters, which are magnetic media. Platters are what carry the data throughout the hard drive. Platters are constructed from optical glass, aluminum, or ceramic and normally coated with a layer of magnetic material. Once the hard drive begins to heat up, the platters will start to expand, which changes their size. When this happens, the magnetic surface on the platters will get destroyed, which results in a loss of data. If the physical area of the platters are damaged, it will result in unreadable sectors.

Other areas of the hard drive that can be damaged due to overheating are the read and write heads, head actuator, and the controller chip. Hard drives are very sophisticated pieces of hardware, and can't handle overheating. The read and write heads are a common example, as they can easily render the drive useless if they become damaged.

To prevent your hard drive from overheating, you should always make sure that it is cooled properly and well ventilated. You can always get additional fans and coolers, which will improve both ventilation and the flow of air in your computer. You can buy fans and coolers at very affordable prices, which makes them an ideal investment for keeping your hard drive or hard drives cool.

You can also get software that monitors the temperature of your hard drive as well. Whether it's software, or additional fans, you should always ensure that your hard drives are kept cool. By keeping them cool, you'll greatly reduce the amount of crashes. You'll also increase the stability of your hard drive as well, which will make your entire computer perform much better.