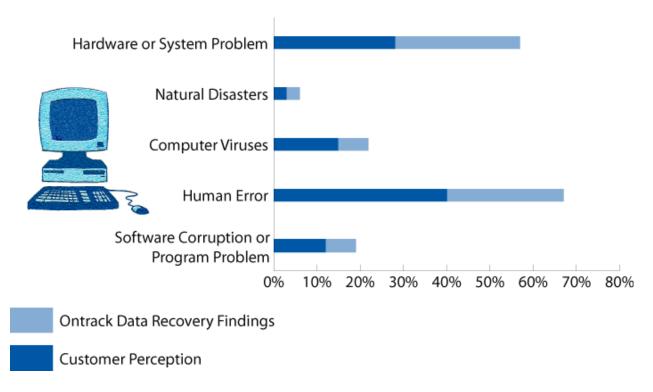# An Ebook on Data Recovery and Data Protection

No one likes to lose data. Whether it is your personal photos or crucial business documents, losing data is not only an inconvenience, it can be a calamity. With more and more people capturing moments on their digital cameras and storing important files on their computers, there are further precautions that need to be taken to ensure you don't lose your valuable data. Check out our guide on how to prevent data loss:

Source: http://www.ontrackdatarecovery.com/understanding-data-loss

In most standard computers your hard drive is a piece of machinery that will one day fail. The adage in the industry is not "if my drive fails", but rather, "when my drive fails". While your hard drive has many electronic components, it also has moving parts. Over time, these mechanical components can fail as the result of use. Follow these tips to ensure that your documents, pictures and other valuable memories are preserved and to become educated in the event that *your* hard drive fails.

What Can I Do To Protect My Data And Minimize My Chances Of Losing Data?

Follow these steps to maximize the life of your hard drive and minimize your chances of losing data:

- **Avoid Heat & Vibration**
    - Heat and vibration are two leading causes of hard drive failure
    - Keep your computer in a dry, clean area with little traffic

- **Back Up Your Data**
    - Back up your most important files to an external hard drive at least once a week

- **External Drives**
    - External drives are recommended
    - Find one with a fan built in, as this prevents common mechanical issues

- **Run Scandisk**
    - Scandisk examines your hard disk for logical inconsistencies and damaged surfaces
    - Run Scandisk every two or three weeks

- **Run Defrag Frequently**
    - Defrag rearranges the data on your hard disk so that each file is stored adjacent clusters
    - Data recovery success is more likely when damaged files' clusters are close to each other

- **Anti-virus Software**
    - Anti-virus software is strongly recommended
    - Update your software at least four times a year
    - Enable any auto software update features

- **Use An Uninterrupted Power Supply (UPS)**
    - UPS can protect your system from electrical damage
    - UPS is a backup power source that can keep your computer running for a short period of time

- UPS prevents damage after surges of electricity, black outs, brown outs or lightening strikes

- **Be Cautious Using Recovery Utilities**
  - Verify that your utility software is compatible with your operating software
  - Never use file recovery software if you suspect electrical or mechanical drive failure
  - Always make an undo disk when allowing a utility to make changes to your hard drive

Which Backup Method Should I Use?

- Complete backup
  - Full backup of the entire server or PC hard drive
  - Will backup all server volumes, directories and files
  - Will backup all PC drives, directories and files

- Partial backup
  - Differential – copies all files that were changed since the last *complete* backup
    a. Useful when it is important to have the latest version of each file
  - Incremental – copies all files that were changed since the last backup
    a. Used when each revision of a file must be maintained
    b. Newer versions of backed up files not allowed to overwrite older versions

- User-defined
  - Copies a user-defined set of files
  - Often a special backup requested by groups working on a mission-critical project

Is One Hard Disk Drive Better Then Another?

- At Data Recovery Group, we do not believe that any hard drive manufacturer is better than another
- Just be sure to select a drive that is suitable for your uses and has any options you may need
- It's recommended to talk with friends or trusted peers to gather their satisfaction with types of hard drives

"I didn't protect my data, my drive's not working. Now what do I do?"

- **Data recovery**
  - The process of retrieving deleted or inaccessible data from failed electronic storage media (computer hard disk drives, removable media, optical devices, tape cartridges)
  - Data Recovery Group technicians are able to successfully recover lost date 70-75 percent of the time

"My Drive Is Making Strange Noises. Is My Data Still Recoverable?"

- In most cases, yes
- Take notice of any strange noises signaling mechanical failure such as:
  - Clicking
  - Ticking
  - Grinding
  - Humming
  - Buzzing
- If you observe these sounds:
  - DO NOT power on the drive
  - DO NOT run any software recovery tools (this can result in further damage and permanent data loss)
  - Seek the expertise of professional data recovery services
  - Understand not all hard drives are recoverable. An evaluation process will determine the extent of recovery.

What Happens During a Data Recovery Evaluation Process?

- *Step 1*
  - Determine whether the problem is physical (hardware), logical (software structures) or both
- *Step 2*
  - Determine any parts needed for repairs that will have to be received by vendors
- *Step 3*
  - Access the drive and make a mirror image of the hard disk
- *Step 4*
  - Evaluate the condition of the data structure
  - Determine how much data is salvageable
- *Step 5*
  - Contact client with evaluation results and expected cost of recovery

How Long Does The Evaluation Take?

- Within 24 to 48 hours of receipt of the drive, dependent upon:
  - Any encountered problems
  - Any required parts shipped from vendors
  - The degree of damage of the drive

How Long Does The Actual Data Recovery Take?

- Most recoveries will be completed in 2 to 5 days
- Completion varies by type of recovery
  - Expedited data recovery
    a. A technician is assigned to your drive within four hours of receiving the disk

b.　The assignment is worked on during normal business hours until recovery is complete

　　　c.　This process cuts turnaround time in half

　- Emergency data recovery

　　　a.　For critical situations

　　　b.　A technician is assigned as soon as possible

　　　c.　The assignment is worked on weekdays, holidays and after hours

　　　d.　Data will be returned within two to five working days depending on complexity of recovery

Can I Recover My Data Using Norton Or Other Disk Utilities?

- No – use utilities as preventative maintenance, as they can render data unrecoverable in the event of extreme corruption
- Follow these tips to ensure drive and data safety:
  - Save an "undo" file (a record of the changes the utility has made to your drive) in the event it does not correct your problem
  - DO NOT use a utility program if it does not allow you to save an "undo" file of the repairs it makes
  - DO NOT attempt to use any type of utility software if your drive is making any unusual noises.   Instead, shut down your computer to avoid any further damage

Are There Instances Where Lost Data Cannot Be Recovered?

- Yes
  - Usually occurs when read/write heads actually "crash" and gouge magnetic storage media to the point where data is destroyed
  - Recovery is usually possible at the time damage has first occurred
  - Commercial recovery software can cause permanent data loss unsalvageable by technicians

My Documents Contain Confidential Information. How Can I Be Sure They Will Remain Confidential?

- Data Recovery Group employees are under non-disclosure
- Always get confirmation that your data recovery service provider has a secure, non-disclosure environment
- Request a written agreement for non-disclosure if you are highly concerned

How Do I Ship My Hard Drive?

- Ship only your hard drive
  - Removing a hard drive from a computer requires an additional charge
- Package your hard drive carefully
  - Wrap your drive in an anti-static material or freezer bag
  - We recommend shipping it in the original manufacturer's packaging

- Or, use a sturdy corrugated cardboard box twice the size of the drive
- Use heavy foam padding, bubble wrap and other anti-vibration materials
- Do not use Styrofoam peanuts as they attract static electricity
- Make sure the padding material is at least two inches thick around the drive
- For water-damaged hard drives
  - DO NOT dry it
  - Enclose the drive and a damp sponge in a sealed plastic bag (to prevent it from drying out)
  - Recovery is more likely if technicians receive the drive before it has dried
- Sending controller boards
  - Older models require controllers in order to recover data
  - Remove the controller carefully and enclose it in an anti-static material to ship with the drive
- Other
  - Send all other types of media the same way you would send your hard drive

How Do I Restore Data Back To The Hard Drive?

- Restore the data from CD or DVD
  - Recovered files on these disks will be "read only"
  - To modify these files, copy them to your hard drive
  - Before copying them to your hard drive, make sure you have a bootable system with sufficient free space for the recovered data
  - Any programs or software will need to be reinstalled from original sources prior to data transfer
  - After the data is copied to your hard drive, uncheck the "read only" attribute to allow file modification

Today, we rely heavily on our computers to store some of our most important information, pictures, and videos. Losing data can be a traumatic experience, so it is important to take steps to minimize the chances of losing information or to be able to know what to do in the event that something goes wrong. If you're looking for advice from a data recovery professional, please feel free to contact our experts at the Data Recovery Group at http://www.datarecoverygroup.com/contact/

Download a copy of this Ebook at:

http://www.datarecoverygroup.com/pmebook.pdf

Additional data recovery links from Data Recovery Group:

http://www.datarecoverygroup.com/jpeg-recovery.htm

http://www.datarecoverygroup.com/file-recovery.htm

http://www.datarecoverygroup.com/hard-drive-recovery.htm

http://www.datarecoverygroup.com/data-recovery-services/

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