

Recovering Data from Optical Disks

All this has led to a phenomenal increase in demand for removable storage devices for archival purposes and sharing of data among users.

There are many types of digital storage media available in the market. There are floppy drives (now nearly obsolete), USB drives (the latest technology to hit the market) and tape drives (which are a favourite of corporates for data backups). However, the most popular removable storage device today among desktop and laptop users is the optical disk.

These disks are small but pack a big punch. They are made of very tough polycarbonate plastic and are about 2mm thick, with a finger hole in the middle. The disks record data on one side of their surface (the shiny side) using, as their name states, optical or laser technology. These work in tandem with an optical drive that is built into the computer or laptop.

The optical drive has a motor and a read / write head. The latter sports a glass lens to emit and read a laser beam. When the disk is inserted into the drive, it is spun rapidly by the motor at a very high speed. The laser then creates a pattern of microscopic pits on the disk surface in a single groove. This starts from the finger hole in the centre of the disk and goes around it again and again, gradually moving toward the edges. The groove is so long that if unwound, it would stretch to a distance of 5 km!

Each of the pits on the groove represents one and its absence represents zero, thus making recording of digital data possible. To read the disk, the read / write head emits the laser which bounces off the pattern of pits back to the lens. The data thus read is transmitted to the operating system and thence on to the processor.

Optical disks are of two types: compact disk (CD) and digital versatile disk (DVD). The former is the cheapest data storage device currently available in the market and can hold an awesome 740 MB of data. CDs are today the media of choice for most computer users for taking regular data backups. DVDs, the latest version of optical disks, are a huge leap over CDs in terms of data-storage capacity. They can hold a whopping 4.6 GB of data. This is sufficient space to host a full-length Hollywood movie.

The disks store data on their data-recording surface which remains exposed to the elements unlike USB drives or tape drives where it remains protected and shielded. This has many disadvantages. With regular use and handling, it is common for the disk surface to get scratched. Also, some thick liquid may spill over it, smudging the pattern of pits. The disk may also get bent out of shape when exposed to strong heat, such as when kept on the dashboard of a car in the hot afternoon sun or when left next to a camp fire. Many a time, the computer is simply unable to recognise the disk. All these cases of hardware damage may result in data loss as the laser beam would be unable to read the recording surface properly.

Data can also get lost from an optical disk due to various software errors. The user may accidentally delete a file or even reformat the disk entirely, thus making all files residing on it invisible to the operating system. The data on the disk may get corrupted or damaged. It may even be struck by a virus, Trojan or worm that roams the cyberspace looking for unsuspecting victims.

Data loss from an optical disk is nothing new or radical. It is a common occurrence that may strike a computer user anytime. The first priority of anyone after losing data is to get it back as soon as possible. There are two ways to go about this. The easiest and cheapest option is to purchase and download a Do-It-Yourself (DIY) software from the Internet. There are many companies which offer such software at very reasonable rates. The only thing you have to make sure is that the software is able to bypass the operating system and access the disk directly and that it can also handle rewritable disks that offer a drag-and-drop feature.

In case of a serious hardware error, you have to take the disk to a professional data recovery company for the extraction of your files. This may prove to be quite an expensive proposition but you have to decide if it is worth it for you to pay that much for recovering your precious data.

About the Author

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<http://www.fields-data-recovery.co.uk>

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