Coping with a Serious Data Loss from your Computer Hard Drive

By Darryl Peddle

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Data loss is an expensive reality. It's a hard fact that it happens more often then users like to admit. A recent study by the accounting firm McGladrey and Pullen estimates that one out of every 500 data centers will experience a severe computer disaster this year. As a result, almost half of those companies will go out of business. At the very least, a data loss disaster can mean lost income and missed business opportunities.

The other side of data loss is the psychological and emotional turmoil it can cause to IT managers and business owners. Despair, panic, and the knowledge that the whole organization might be at risk are involved. In a sense, that's only fair, since human error is one of the two largest contributing factors in data loss. Together with mechanical failure, it accounts for almost 75 per cent of all incidents. (Software corruption, computer viruses and physical disasters such as fire and water damage make up the rest.)

Disk drives today are typically reliable. Human beings, it turns out, are not. A Strategic Research Corp. study done in 2000 found that approximately 15 per cent of all unplanned downtime occurred due to human error. A significant proportion of that happened because users failed to implement adequate backup procedures, either having trouble with their backups, or having no backup at all.

How does it happen that skilled, high−level users put their systems − and their businesses − at such risk?

In many cases, the problem starts long before the precipitating system error is made, that is, when users place their faith in out−of−box solutions that may not, in fact, fit their organization's needs. Instead of assessing their business and technology requirements, then going to an appropriate engineered solution, even experienced IT professionals at large corporations will often simply buy what they're sold. In this case, faith in technology can be an vice instead of a virtue.

But human intervention itself can sometimes be the straw that breaks the technology's back. When the office of a Venezuelan civil engineering firm was devastated by floods, its owners sent 17 soaked,

mud−coated disks from three RAID arrays to us in plastic bags. A tough enough salvage job was made even more complex by the fact that someone had frozen the drives before shipping them. As the disks thawed, yet more damage was done. (After eight weeks of painstaking directory−by−directory recovery, all the data from the remaining fifteen disks was retrieved.)

Sometimes, the underlying cause of a data loss event is simply shoddy housekeeping. The more arduous the required backup routine, the less likely it will be done on a regular basis. A state ambulance monitoring system suffered a serious disk failure, only to discover that its automated backup hadn't run for fourteen months. A tape had jammed in the drive, but no−one had noticed.

When disaster strikes, the normal human reaction is panic. Because the loss of data signifies critical consequences, even the most competent IT staff can jump to conclusions, and take inappropriate action. A blank screen at a critical time can lead to a series of naive decisions, each one compounding the preceding error. Wrong buttons get pushed, and the disaster only gets worse. Sometimes the pressure to correct the system failure speedily can result in an attempt to reconfigure an entire RAID array. IT specialists are typically not equipped to deal with crisis modes or data recovery techniques. Just as a good physician is trained to prolong life, the skilled IT specialist is trained to keep the system running. When a patient dies, the physician turns to others, such as nurses or counselors to manage the situation. When significant data loss occurs, the IT specialist turns to the data recovery professional.

Data recovery specialists are innovative problem solvers. Often, the application of basic common sense, when no−one else is in any condition to apply it, is the beginning of the journey towards data recovery. The data recovery specialist draws on a wealth of experience, married to a "never say die" attitude, and a comprehensive tool kit of problem−solving procedures. Successful recovery outcomes hinge on a combination of innovative logistics, applied problem−solving, and "technology triage," the process of stabilizing an affected system quickly, analyzing and treating its wounds, and preparing it for surgery. The triage process sets priorities, such as targeting which files are needed first or which are absolutely vital to the functioning of the business, and establishes whether files might be recovered in less structured formats (such as text−only), which may be desirable when time is crucial.

The art and science of professional data recovery can spell the difference between a business' success or its failure. Before that level of intervention is required, though, users can take steps to ensure that the probability of a data loss disaster is minimized.

Basic to any business technology plan is a regular fire−drill procedure. Back−up routines may be in place, staff may assigned to specific roles, hardware and software may be configured − but, if the user isn't completely sure that everything works the way it should, a data loss event is inevitable. Having adequate, tested, and current backups in place is critical. A hardware breakdown should not be compounded by human error − if the malfunctioning drive is critical, the task of dealing with it should go to a data recovery professional.

Just as data loss disasters are rooted in a combination of mechanical failure and human error, so, too, the data recovery solution lies in a creative marriage of the technological and the human. The

underlying philosophy of successful data recovery is that technology is something to be used by human beings, not something that uses us.

Name: Darryl PeddleCompany: CBL Technologies, CanadaAuthor description: Darryl Peddle is an Internet Marketing Specialist with CBL Technologies, one of the largest

in the

world.Website:

Easy Guide to RAID Recovery

By Alexandria Haber

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What is RAID RECOVERY?
RAID stands for Redundant Array of Inexpensive Disks. It is a method of combining several hard drives into one unit. This method offers fault tolerance (the ability of a system to continue to perform functions even when one or more hard disk drives have failed) and higher protection against data loss than a single hard drive.

Why do I need RAID RECOVERY?
RAID provides real−time data recovery when a hard drive fails, increasing system uptime and network availability while protecting against loss of data. Another advantage of the system is that multiple disks working together increase overall system performance. Any individual or company could benefit from having a RAID RECOVERY system in place.

Different Levels
There are several different levels of RAID available. Each level offers various advantages in terms of data availability, cost and performance. Your best bet is to assess your needs in order to determine which level works best for you. The most popular RAID systems are the following:

RAID 0 − Data striping (no data protection). The benefit of this system is that it offers the highest performance.

RAID 1− Disk Mirroring (provides data protection by duplicating all data from a primary drive on a secondary drive). The benefit of this system is it offers the highest data protection.

RAID 0/1− This combines both Raids 0 and 1. The benefit here is highest performance + highest data protection.

RAID 5 − Data striping with distributed parity (a form of data protection that recreates the data of failed drive in a disk array). This system offers the best cost performance for multidrive environments.

Having a RAID system installed can provide peace of mind. With RAID installed you can rest assured that even in the event of a system failure your important data will be safe.

Alexandria Haber writes both fiction and non−fiction for a variety of people and places. As a result, she has had the benefit of gaining a little bit of knowledge about a lot of different subjects. While researching this article on RAID recovery she gained a new respect for computer technology.For more information on

you can visit: http://www.raidrecoveryguide.com.