RESURRECTING DATA: Damaged Data Recovery — Real-Life Scenarios

BY JULIE PASQUIER AND MIKE BURMEISTER

Planning for those unexpected disasters, selecting the right data recovery team and utilizing key data protection and backup strategies can prevent IT managers from bringing the bad news of unrecoverable data loss to their CEO.

IT was almost a disaster: A large Northwest Fortune 100 company experienced a massive data loss on one of its largest NT servers. To further complicate matters, the data was classified. Therefore, no one without clearance could get involved.

After making several of its own attempts, the company found a data recovery company with security cleared engineers who could come on-site to attempt a recovery. Arrangements were made and within 24 hours of the data recovery team's arrival, 100 percent of the inaccessible data was rescued, saving the corporation potentially millions of dollars.

In another real-life scenario, an executive at a large Midwest company had a disagreement with his teenage son, resulting in his laptop being tossed into a hot tub. The laptop was no longer functional and the hard drive itself was wet, causing a substantial data loss. Fortunately, a data recovery company was able to retrieve all of the executive's data.

Each day users store more and more mission-critical data on their PCs and networks, a trend that makes data loss a nightmare for IT managers everywhere. The potential disasters cited above resulted in success stories because the companies involved protected their data and made smart data recovery decisions. Some businesses aren't so lucky.

Planning for those unexpected disasters, selecting the right data recovery team and utilizing key data protection and backup strategies can prevent IT managers from bringing the bad news of unrecoverable data loss to their CEO.

DATA LOSS TRENDS

Despite technological advances in the reliability of magnetic storage media, the incidence of data loss continues to rise. Hard drive failures now average 5 to 7 percent per year. This increase in failure is partially due to the sheer number of computers and computer equipment being used. There were approximately 230 million PCs in operation worldwide in January 1997, each with a hard drive and possibly other storage devices, according to Volpe, Welty & Company, an equity research firm. In addition, there are currently five to 10 million larger multi-user computer systems in operation, and each of these has a large-capacity disk drive.

As more and more data is stored in smaller and denser areas, mechanical precision also plays a more crucial role in data loss. As a part of this advancing technology, the drive tolerance (distance between the read/write head and the platter where data is stored) is steadily decreasing. A slight nudge, a power surge or a contaminant introduced into the hard drive may cause the head to touch the platter, resulting in a head crash. In some situations, the data residing in the area touched by the head may be permanently destroyed. The current tolerance on most drives is one to two micro-inches (one millionth of an inch). Comparatively, a speck of dust is four to eight micro-inches. Contaminants of this size can cause serious data damage.

Other common corrupters and destroyers of computer data are natural disasters, electromagnetic failures, computer virus attacks and user errors. One additional and growing threat to the security of your valuable information is computer crime, ranging from overt industrial espionage to intentional and malicious tampering by disgruntled employees, acquaintances and strangers.

DATA PROTECTION TIPS

Protecting your data thoroughly and properly will eliminate many of your data loss headaches. Take the following data protection steps to make your life easier.

1. Back up your data on a regular basis. A basic strategy would include an automated backup process that usually takes place at night or when there is little or no work being done on the computer system. The data is usually backed up on tapes, JAZ cartridges, ZIP cartridges or recordable CDR media, even diskettes if working on small amounts. Along with backing up data, you should also follow a backup maintenance procedure. For example, keep a weekly backup off-site or even a daily backup, depending on the importance of the data. Each morning the backup should be verified by the computer user and stored in the proper environment. This is meant to protect users from catastrophic disasters. Also, a periodic test of the backup should be performed to assure that the proper data is actually being backed up and that the data restoration process actually works. Here's a rule to live by: No backup is successful until it has been restored and the data has proven to be useful.

2. Keep computers in dry, controlled environments that are clean and dust free. This is an effort to simply protect your electronic equipment and at the same time protect your data. Likely environmental problems include heat, smoke and vibrations.

3. Use diagnostic and repair utilities with caution. Third-party software products will often further corrupt data, making professional data recovery more difficult or even impossible. In the case of a mechanically failing hard drive, the use of a software tool will often exercise the drive thus causing increased physical damage to the data stored on the hard drive.

4. Use anti-virus software and update it at least quarterly. Viruses are constantly being produced and thus make the periodic updating of virus protection software essential. Approximately 10 percent of data recovery situations can be attributed to virus corruption, according to a data recovery professional.

5. Use a UPS (Uninterruptible Power Supply) for power protection. Uncontrollable power surges result in electronic equipment damage everyday. A UPS is a traditional means to protect electronic equipment from typical power surges such as lightning, brownouts and poor quality power.

WHAT IS DATA RECOVERY?

Data recovery is the process by which recovery specialists salvage and extract lost data from hard drives and other storage media corrupted by a wide array of natural and human causes.

When professionals are brought onto the scene to recover lost data, they are usually given a customer's hard drive to make a copy of the data or as much data as is possible to recover. The team then performs a structure analysis and repair on this copy of the customer's data. The idea here is that the professionals can never alter the original customer's data. Once the repair is completed, the recovery team can show reports or the recovered data to its customers. At that point, the customer agrees to continue with the service and the data recovery company puts the recovered data onto new media and returns it to the customer. This process can often be completed in two days or less.

SELECTING YOUR RECOVERY TEAM

When faced with a data recovery situation, one possible solution is to re-enter the lost data. This is often impractical to do in any kind of timely manner. And in the worst case scenario the lost data can be unique in the sense that re-creation is impossible.

If re-entering the data is an inefficient or impossible task, it's time to attempt a recovery. Instead of trying to retrieve lost data yourself, it's important to bring in professionals for the same reason you should turn to a professional when your car breaks down. The only time a company should attempt to recover data themselves is if the data isn't critical to the business.

When users try to recover data themselves, they run the risk of making their data permanently unrecoverable. An important concept to understand is that professional services have unconventional means to look at your data and determine the path toward a successful recovery. "Unconventional means" include having a Class 100 Clean Room, which protects hard drives from collecting dirt and other particles while the mechanical and electrical experts attempt to recover the data. Also, data recovery companies have relationships with drive manufacturers that let them build and inventory parts and electronic components that are often needed to perform successful recoveries.

Keep the following points in mind when selecting a data recovery team:

1. Years of experience with data recovery as a core competency. Many companies claim to do data recovery but actually are doing drive repair, which is only successful on the most simple of possible data recovery situations.

2. Relationship with drive manufacturers. A solid relationship with drive manufacturers is often necessary to solve certain hardware problems. Also, data recovery often voids the manufacturer's warranty. However, a reputable data recovery company will have a warranty return policy that will allow customers to return their hard drive for warranty replacement.

3. Cost-effectiveness. Beware of hidden costs. Some data recovery companies give very low quotes, but then have hidden costs such as backup charges, clean room charges, parts and inflated

replace-ment media charges. The total charges will often add up to be much higher. Also, most reputable data recovery companies will not collect any money until a product is presented to the customer.

4. Amount of budget dedicated to research and development. The most successful data recovery companies will need to invest in R&D heavily to keep up with the changing technology in the hard drive industry.

5. Customer service and support. Make sure you find a team that will serve you well when you have questions or problems restoring your data. Talk to some current customers at the data recovery company you are considering.

SUMMARY

Whether your laptop gets thrown into a Jacuzzi or your NT server experiences a massive data loss, it's important to be prepared for a disaster and to always protect your data. Remember to back up your data on a regular basis, keep your computers in dry and controlled environments, use diagnostic and repair utilities with caution, use anti-virus software and update it at least four times a year, and use UPS for power protection. And when it comes time to hire a professional data recovery firm, don't forget to consider the firm's years of experience with data recovery as a core competency, its relationship with drive manufacturers, cost effectiveness, amount of its budget dedicated to research and development and its customer service and support. Take care of your data and make sure you select the right data recovery team for your company if disaster does strikes. **ts**

Julie Pasquier is a product manager for Microserv, Inc., a hardware support services company based in Kirkland, Wash. Pasquier recently completed a product evaluation on data recovery services.

Mike Burmeister is the director of domestic data recovery for ONTRACK Data International. Microserv became an ONTRACK service partner in 1997. As a service partner, Microserv serves as an agent for ONTRACK, offering ONTRACK's proprietary capabilities to customers.

©1998 Technical Enterprises, Inc. For reprints of this document contact sales@naspa.net.