Data Recovery
What's Your Club's Threshold of Pain?

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COMPUTER SYSTEMS DISASTER RECOVERY – IT'S AN OLD SONG WITH TIRED LYRICS. BUT IT'S A TUNE THAT A NUMBER OF CLUBS SING THE BLUES TO EACH YEAR, AS THEY STRUGGLE TO RECOVER FROM A CATASTROPHIC SYSTEMS FAILURE AFFECTING THEIR ACCOUNTING, POS OR RESERVATIONS OPERATIONS.

This melody has a good news/bad news refrain. The good news is that data recovery is relatively inexpensive and easy to manage. The bad news is that most clubs are not adequately protected - and when disaster strikes, they often must wait much too long to recover their aborted systems.

With today's private clubs becoming increasingly dependent on computer systems for daily operations, their risk management focus is moving from data loss protection to data availability assurance. In other words, the risk of critical data and systems not being available – even for a few hours – is becoming a bigger factor in their disaster recovery planning. What many clubs fail to realize is that the restoration process with most recovery techniques is much more time consuming than expected, and can cripple a club's operations for a period of a few days to a week or more.

A number of data recovery technologies are available, with the newer ones focusing not just on recovering the data – but on recovering the data *quickly*. Here's a review of the various technologies available today, starting with the lowest and most basic level to the highest and most sophisticated.

LEVEL ONE – SHADOW COPY "SNAPSHOTS"

This is a great feature that comes free with the Microsoft Server 2003 software. Simply put, a certain amount of space is allocated on a server disk drive to accommodate a "snapshot" of the club's data files. A schedule is established for these automatic snapshots of just the data that has changed since the last snapshot. (Generally snapshots are taken two times per day –11:00 am just before everyone goes to lunch, and around 3:00 pm just after the heaviest part of the workday.) Each snapshot is not written over for a specified period of time based on the club's data recovery requirements. A good rule of thumb is to allocate enough disk space to accommodate at least a week's worth of snapshots.

Shadow Copy is a great tool to reduce risk with desktop software files such as Word, Excel and PowerPoint. It is not recommended for core application software files (POS, accounting, reservations, etc,) since it would greatly reduce server performance for those disk-intensive operations. Keep in mind that the snapshots are made by disk volume, so your data will need to be well organized on your server(s) to make this process easy to manage.

Snapshots help solve myriad day-to-day data loss problems, such as:
• A user has saved over and erased the original file and wants to go back to the original, or
• The user has completely deleted a file, or an entire folder with hundreds of files in it.

In these cases, the user can quickly restore the deleted file or entire folder with all of its files – in a matter of minutes.

Shadow Copy is a valuable little "freebie" feature that comes with the Windows 2003 Server software, but amazingly, is almost never used by private clubs! To use this feature, your club's network administrator will need to be familiar with how it is configured. You should note that more sophisticated "real time copy" solutions are available from a variety of providers, but for a price that many clubs will not want to pay.

LEVEL TWO – THE TRADITIONAL BACKUP

Today's DAT and DLT tape drives are now just as fast as disk-to-disk backups. That means your club's data can be backed up quickly and safely to a single tape (400-800GB) that is reliable, relatively inexpensive and easy to manage. Tape technology allows you to create multiple copies of the data, which offers redundant copies if a particular tape is bad. (However, most bad tape issues can be resolved by having your backup solution verify the tape(s) before it completes and notify you of any errors.) Tapes are also portable and can easily be taken off site for increased security.

But with tape technology there are some limitations. First and foremost, restoring

from tape can be anything but quick (at least an hour to grab a single file or email – many hours/days to restore core application software data). Bottom line – tape is a fast, reliable and cost effective backup medium, but can be a painstakingly slow way to restore large amounts of lost data. And the extended length of time to recover from tape backups may not be acceptable to your club.

LEVEL THREE – OUTSOURCED ONLINE BACKUPS

Many private clubs are outsourcing their computer backups to outside companies that specialize in backing up files through the Internet to their own offsite servers. A number of companies offer relatively inexpensive services to back up files automatically, usually on a nightly basis. This automatic process provides an extra measure of assurance that a nightly backup is actually being made and that the backup is off site. However, there are a couple of drawbacks with this approach:

• Online backups do not include operating system files. That means if a server fails and must be replaced, the operating system files will need to be restored manually – an extremely time-consuming chore – before the programs and data can be restored by the online service provider.

• The online backups are incremental (changes only) because the transfer speeds available over the Internet are too slow for complete backups. Incremental restoration can be a laborious, time consuming multi-step process with less sophisticated providers.

Basically, online backups are a way to help assure that a backup is being done, which might make a lot of sense if your club has a history of poor backup procedures. However, online backups are not an adequate substitute for local, full system backups and should only be used as an additional level of redundancy.

LEVEL FOUR – DISK IMAGING

The newest and most sophisticated backup method, disk imaging takes a **bit-by-bit image of the target disk and** **copies it to another disk.** The image includes everything on the disk: operating system, application software and data files. It is an exact duplicate of the original disk. This technique offers a huge advantage over all other backup methods because a complete "bare metal restore" can be made in a matter of minutes.

Remember, with tape and online restoration procedures, the lost files must be identified and painstakingly restored back to a functional drive to be accessed by the users. That can take an hour or so if just a few files were lost, or days if the entire disk must be restored. Using disk imaging technology, the imaged disk can be restored to the new drive in about a half hour, greatly reducing the amount of downtime.

Rule of thumb recommendations for disk imaging include: Produce a "base level" image weekly (operating system, programs and data). Produce a "data level" image nightly (data only). Use an inexpensive internal disk drive installed in one of the servers, or an external portable disk drive connected to one of the servers (both available for about $200 for 500GB). Don't use a drive-installed in/attached to a PC on the network, since it will provide a very slow data transfer rate. Budget $500 to $1,000 for the purchase of the disk imaging software.

Remember, like outsourced online backups, disk imaging is not an adequate substitute for local, full system backups and should only be used as an additional level of redundancy.

Disk recovery used to be about making sure lost data *could* be recovered. Today, it's also about *how quickly* that data can be recovered. With clubs depending on real-time computer systems to handle critical operations, time is of the essence. Disk imaging offers the highest level of assurance that your club's critical systems can recover quickly from any data loss. Used in conjunction with more traditional risk management techniques, disk imaging rounds out a complete approach to computer systems disaster recovery. **BR**

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