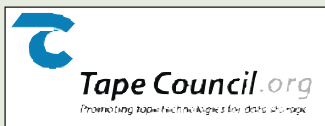


Tape backup 1.01: Tips from the TTC

By Rich Harada

Designing a backup system that meets your company's requirements can be a challenge and involves an analysis of what technology to use, how often to back up, and where to store the data once it's backed up.

Here are some tips to keep in mind when you are planning your backup system:



Frequency—The best backup is the one that just completed before the system crashed. The longer the period between the last backup and a data loss event, the more data that will need to be re-created.

However, the more often backups are performed, the more it will cost in tape media, lost productivity from system unavailability, and other storage management activities. It's important to note that a successful backup program requires regular evaluation and testing of the backup system to make sure it's working properly and that the stored data can be retrieved if necessary.

Retention—Very often, especially with virus and worm attacks, damage to files isn't recognized for some period of time, meaning that the last tape backup set may also contain the virus and/or corrupted data. That's why it's important to retain historical backup sets, so that the system can be brought back to a point in time before the data loss occurred.

Off-site vaulting—The removability of tape cartridges makes it easy to store them away from the primary storage. Always store your backup copies off-site at a location that is far enough away so a disaster won't strike both locations.

Full vs. incremental—A full tape backup provides the easiest method for data recovery, since all data is resident within the backup set. However, depending on the system architecture being used, full backups can have a highly detrimental impact on system availability. Incremental backups

copy only the data that has changed since the last backup, greatly reducing the amount of time needed to perform the backup, but requiring more management of the recovery process.

Centralized vs. distributed—Corporations with multiple locations need to protect data generated at all sites. Some believe that capturing data close to its point of origin is best, while others say

that centralizing backup operations provides tighter process control and higher success rates. Centralized backup operations are far less expensive overall.

The specific priorities and regulatory mandates of the organization should determine how each of the above variables is applied to the data-protection program. Many enterprises consider a 14-day rotating cycle, using three full tape backups and 12 incremental backups to be the best practice for cost-effective data protection. Starting with the full tape backup from the previous cycle:

- **Days 1-6:** Incremental tape backup
- **Day 7:** Full tape backup
- **Days 8-13:** Incremental tape backup
- **Day 14:** Full tape backup
- **Following Day 14:** Keep the tapes from the past seven days on-site, while rotating the previous 14 tapes to an off-site storage facility. A previous set of tapes should be returned from the vault to be re-used (to reduce media costs).
- **Monthly:** Full tape backup, sent to the off-site vault for long-term archival.

The timing and the processes used can be adjusted to suit the organization's data-protection goals. □

Rich Harada is the president of the Tape Technology Council (www.tapecouncil.org). TTC members include Fujifilm, IBM, Imation, Maxell, Quantum, Sony, StorageTek, and TDK.