

Is Electronic Vaulting the Answer to the DR Question?

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Value-based DR lies in the space between tape and HA for small and mid-size organizations.

We are in the midst of a business cycle where many IT shops are realigning their priorities. The conversation has shifted to conservation, and technologies that facilitate efficiency are coming to the forefront. Virtual storage and electronic vaulting are fast becoming preferred ways of increasing storage capacity and improving disaster recovery capabilities while simultaneously keeping operating costs level.

Naturally, disaster recovery capacity is more critical to organizations that provide services on a 24x7 basis. While many of these organizations have already made a commitment to OEM and third-party solutions that deliver Continuous Data Protection (either True CDP or Near CDP), businesses in the small and middle tiers with somewhat eased uptime requirements have not set sail on CDP because the cost is high, often exceeding six figures.

So what's wrong with tape? Almost everyone knows what the shortcomings of tape backups are because nearly all of us on IBM i have used, or still use, tape. Besides media failures and the fact that tape is often a manual and cumbersome process involving numerous time-consuming and tedious steps, backing up to tape is also vulnerable to human fallibility, i.e., sometimes tapes are overwritten, and frequently they are left in places where you wouldn't leave your car keys. While these procedural issues can be managed, constant vigilance over tiny, repetitive details can make a person weary. And aside from the labor expense, the life span of a tape drive is finite, so tape drives should be replaced about every fifteen months.

SHARE, the world's first user group for computer professionals, in cooperation with IBM, defined a set of disaster recovery tier levels. While SHARE is an organization for mainframe users, its definitions of readiness are widely used. SHARE defines eight tiers of readiness, based on the types of technology deployments used to meet recovery objectives. Tier 0 calls for no off-site data storage, whereas Tier 7 incorporates a highly automated, business-integrated solution. According to SHARE guidelines, Tier 3 solutions use electronic vaulting for mission-critical data or for all data including email.

Electronic vaulting nearly eliminates all data loss after a system failure or disaster and facilitates quick recovery from accidentally deleted or corrupted objects. Electronic vaulting involves moving data from a primary site to a separate, secure co-location facility over a network. Replication software is used on both sides, and periodic snapshots are bundled up, encrypted, and moved across the network to the target backup system. Advanced compression algorithms that compress data to one-tenth of its original volume make it possible to employ networks with limited bandwidth, such as WANS.

Foremost among electronic vaulting's virtues is the fact that it's relatively inexpensive to acquire and maintain. In part, inexpensive DASD has made this possible. Other topographies for rapid recovery involve acquiring additional hardware, software, co-location facilities, and staff. The notion of electronically transferring periodic updates to a remote managed data storage facility is much less expensive, sometimes one-tenth the cost. With lower expenditures for infrastructure, tape, and labor, electronic vaulting is a very viable alternative to conventional tape backup and is less expensive than HA.

Electronic vaulting can also solve problems with growing data storage needs because capacity can be increased simply by contacting the vendor and contracting for additional space.

Auto Pilot

Converting to electronic vaulting is relatively simple, and once configured, it largely manages itself. Step one essentially involves loading the electronic vaulting agent on your server and defining the objects you want to replicate. Next, the remote vault must be seeded. This operation can be facilitated over the network if you have enough bandwidth to support the volume of data that needs to be sent. If you choose a vaulting solution with robust data compression--for example, one that reduces 100 GB to just 15 GB--the process will go much faster. Interestingly, the seeding process does not need to be completed in one session. It can be done over the course of several days during periods of low network traffic. For large volumes of data, such as multiple terabytes, an inexpensive, portable 2U storage server can be used to seed the vault.

From this point forward, the vault is updated automatically. At the end of every day, the system can perform daily data saves. If you prefer shorter intervals, you can configure the frequency of these snapshots to your liking, down to 20 minutes.

In instances where objects have been corrupted or accidentally deleted on the production server, those same objects can be compressed, encrypted, and re-sent from the vault back to the production processor over the network. If a significant amount of data (25 GB to 2 TB) is affected or you have a complete disaster, a 2U storage device can be shipped overnight to your data center.




Satisfy Your Uptime Requirements

Business objectives and budget constraints often define how much downtime system users will be asked to withstand. Select vendors offer tiered disaster recovery programs that enable subscribers to recover in 24 hours, 12 hours, or less than one hour. In instances where uptime is very valuable, business losses escalate for every hour that the system is down. As you would expect, as recovery capabilities improve, downtime intervals lessen and the investment in technology increases.

Electronic vaulting's virtues extend a few steps further when managed remote hardware and services are added. Even when delivered in a SaaS construct--where you contract for a dedicated partition on the provider's hardware, and your core business applications are preloaded--electronic vaulting is relatively inexpensive. In instances where the Recovery Time Objective (RTO) is one hour or less, full disk-mirroring tools with automated recovery capabilities can be used in place of the online backup replication software. Those who subscribe to premium services essentially have a hot site available. Once your network-connected I/O devices are reconfigured to point to the backup site, you can be back online within an hour with the loss of a minimum number of transactions.

When considering the switch to electronic backup, also consider the reputation of the company you intend to partner with. Do their answers to your questions make sense? Do they have references that you can speak with? Also, find out where your data will be stored. Be certain that a user ID and password are needed and that your data is encrypted. If you're compelled by law to comply with privacy or transparency legislation, you'll want to be certain that you'll remain in compliance once electronic vaulting technology is deployed.

About the Author



Jim Kandrak is president of United Computer Group. UCG offers a suite of tiered vaulting solutions. Vault400 solutions can be tailored to deliver target recovery times ranging from 72, 24, or 12 hours to less than 60 minutes.

In Vault400, replication accuracy is managed with DeltaPro features. DeltaPro facilitates bandwidth throttling to minimize disruptions in ongoing business operations during backups. The DeltaPro re-creation technology provides faster backups by regenerating the delta file index when it is missing or corrupt and eliminates the need to re-seed the vault.



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