

A Matter of Time

FusionStorm's high-performance data protection solutions help customers close the backup window.

It is common knowledge that unplanned downtime can be disastrous for a business, taking a heavy toll in lost productivity, lost data and lost revenue. But what about *planned* downtime?

Organizations spend a great deal of time, money and effort on high-availability solutions designed to minimize the effects of unplanned downtime stemming from a broad range of technology glitches. While that is a wise course of action, some industry studies estimate that as much as 70 percent of downtime may be directly associated with planned activities — particularly the backup window.

Years ago, most organizations were able to perform their critical backup activities each night following regular business hours. That is becoming infeasible today as backup and recovery operations become increasingly complex and problematic. Data retention requirements of legislation such as Sarbanes-Oxley and HIPPA are pushing backup and restore operations in opposite directions.

"That is exactly the issue. There is more data to be stored, more types of data to be stored, it must be stored for longer periods of time — and you have to be able to retrieve it faster than ever before," said Jason Forrest, FusionStorm's national practice director for systems and storage. "The one thing that hasn't changed is that customers still want the same backup window. They want to get their backups done in the same period of time that they did three or four years ago."

Right Tools; Right Team

As a result, organizations are looking for alternatives to traditional backup and recovery processes to accommodate more backups and more archival storage with faster retrieval and shorter backup windows — all without breaking the bank.

That's a tall order, but it has become something of a specialty for FusionStorm. The company has established itself as the go-to provider of high-

performance data protection solutions that meet customers' backup and recovery objectives. FusionStorm's systems and storage group designs and deploys backup and recovery systems for a wide variety of applications and environments, utilizing leading-edge technologies such as the latest high-speed tape drives, disk-to-disk backup, SAN-based backup, virtual tape, single-instance store, data de-duplication, data encryption and more.

"There are many different possibilities — too many for one IT staffer who does your backup on a part-time basis to really get a handle on," said Forrest. "That's what our customers have been turning to us for.

"We have all of these tools in our toolbox. We are very familiar with these technologies and we've implemented them all multiple times in many different environments. We simply take advantage of the most reliable tools from core vendors to develop a high-performance backup solution that gets the job done."

FusionStorm's systems and storage group comprises more than 20 engineers, all of whom have at least seven years of experience in storage and data protection. Forrest, who directs the group's activities nationwide, is a 15-year veteran. These professionals work closely with the company's enterprise software group and use field-proven best practices to design and deploy best-of-breed solutions. All staffers are trained and certified with the latest backup technologies and products.

"That is one of the planks of our group — you must achieve the highest degree of certification offered by our core vendors," said Forrest. "There are no exceptions to that rule."

Multiple Choices

Certifications help ensure that engineers stay on top of their game, which is an important consideration given the evolving requirements for backup and recovery systems. For many years, tape was the de facto standard medium for data center



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backup because tape cartridges are cheap, portable and can be stored conveniently. A basic tape backup system comprises a backup application, a backup server, tape libraries, tape drives and the media. With this type of system, recovery is often referred to as the “Chevy Truck Access Method” because tapes are removed from a data center, put in a truck and driven to a secondary site to be loaded onto disk arrays.

But there have always been tradeoffs associated with tape-based backup, chiefly that the restore process is too slow because tape relies upon sequential access, which makes it difficult to find files quickly.

In recent years, disk-to-disk (D2D) systems have emerged as effective alternatives in some environments. Commodity disk drives have become somewhat more price competitive with tape, with the added benefits of offering direct random access, improved read/write efficiency and significant time savings. In its simplest form, a D2D system simply copies the files or volumes from one disk to another disk. It not only shrinks the backup window but turns recovery into a simple point-and-click process that takes only a matter of seconds.

Virtual tape is one form of a D2D system. It simulates tape operations by inserting high-capacity, low-cost serial ATA (SATA) disk drives in the tape position. Although virtual tape looks and acts like traditional tape systems to backup applications, it offers the speed and performance benefits of disk drives. For those organizations with a large investment in existing tape backup systems, virtual tape has another advantage — a virtual tape library (VTL) is easily integrated with a typical tape backup configuration and requires little or no changes to existing backup processes.

New and Improved

Again, however, there are tradeoffs with a disk-based process. Disk arrays are not portable and thus not as flexible when formulating disaster recovery and security guidelines. This is one reason why Forrest believes tape will continue to be a significant part of the backup formula for some time to come.

“All of our customers still use tape to some degree,” he said. “You can’t pull a disk out of an array and give it to Iron Mountain. You can’t pull a disk out of a RAID group and go put it in another disk array somewhere else. Nobody offers features like that.”

Several vendors have developed high-performance, fast-access tape drives in the past year, which will help keep tape in the backup mix. Some of these drives can hold upwards of 1TB or more of compressed data while also offering dramatic throughput improvements over previous generations.

“Portability and long-term storage are important advantages of tape,” said Forrest. “We have many customers backing up north of 40 terabytes on their full backups, which would require an enormous amount of disk space. Bottom line, tape is denser, tape is cheaper and tape is just as much high-performance as the commodity disk solutions out there.”

‘The Breaking Point’

Data de-duplication is another important backup solution these days. These appliances incorporate pattern recognition and compression technologies to delete duplicate data. This allows the backup target to store only one copy of files, along with an index of all the data and its meta-data.

A recent survey by high-tech research firm IDC revealed that 53 percent of organizations either don’t have a backup strategy at all, or leave it up to users to back up to a network drive. This is why IT managers today rank data protection among their chief storage management challenges.

“We have customers who have waited to come to us until their full backups took greater than seven days,” said Forrest. “The second they hit that eighth day — when a new backup is kicking off while the previous one is still running — that’s the breaking point.”

Compliance issues along with the continued exponential growth of data have turned data protection into a complex process, and today’s IT environments require a more comprehensive strategy for backup and recovery. Emerging solutions are gaining momentum and can make organizations more resilient and less susceptible to downtime. FusionStorm has the demonstrated expertise in crafting such solutions.

“We don’t just shoot from the hip and suggest a solution,” said Forrest. “We spend the time to learn the environment and do an in-depth assessment of their infrastructure. We might offer several different solutions — there’s always more than one way to skin a cat. We can do that because we’re pretty well-rounded when it comes to the backup environment, and we have a lot of tools at our disposal.”