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**Citistreet Benefit Management Division Utilizes Pegasus and Veritas to Store Critical Archive Data for Compliance Data Retention.**

CitiStreet, owned by Citigroup, is a premier global benefit provider, and one of the nation's largest retirement plan record keepers. Citistreet offers a broad range of products and services for defined contribution, defined benefit and health and welfare plans of all sizes in all markets, including: full service records keeping, investment services, award winning, action oriented and communication and education programs, investment counseling.

As part of the products and services Citistreet offers, they are required by various regulations, including SEC, Sarbanes-Oxley and HIPPA, to securely maintain and archive its client's data. This application story is about how Citistreet solved its application requirements by implementing the most cost effective secure removable WORM archive media within an existing well-known infrastructure. Backup, File System Archiving and Email archive was provided by Symantec's Veritas NetBackup and Enterprise Vault. Pegasus Disk Technologies provided the Veritas certified media connectivity to Ultra Density Optical (UDO). Here's more about the application and what challenges Citistreet had to overcome.

Jeff Machols, Systems Integration Manager for Citigroup's Citistreet said, "Managing compliance tools is extremely tough for us. We run the whole gamut. We have to have people dedicated to managing backups, archives, [UDO] platters, and restores."

Machols expects to have one less storage tier to manage soon. He's looking to replace his tape libraries with a tiered infrastructure that includes Fibre Channel disk, virtual tape, and UDO for the sake of more efficient compliance.

He explained, "By the end of the year, we'll be completely off tape. If we needed information, we always pulled it off tape but then you have the problem that 'This tape's five years old, we can't read it anymore.' Not having the media work anymore is no longer a good excuse for not being able to produce the data. We make sure we're writing everything, and what we're writing it to is the most secure piece of media." Weaning his firm off tape involved a series of tasks and decisions for Machols. First, he had to decide where to store everything. CitiStreet uses Hewlett-Packard EVA and XP SANs for its primary storage. Machols put in a Sepaton Virtual Tape Library (VTL) for backup and the UDO jukebox for online and archival storage.

"We were accumulating large amounts of data which was being stored on-line in our production systems. The majority of this data was accessed very infrequently, if at all, but was being kept due to business needs or in many cases regulatory requirements. This on-line data was increasing the capacity needs of the disk subsystems. In addition to disk space, this data was also being backed up every week during the full systems backups. This caused the backup window to increase to the point of being unusable, and would require large capital outlays for additional hardware and backup media (LTO Tapes). As a result, a near-line archiving solution was required."



## *Application Success Story*

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The data being archived is made up of file system data from multiple applications. Some of the file systems are stores of documents such as Word documents, spreadsheets and text files. In addition to these documents, application files such as database files and dumps files are stored in these file systems.

He went on to say, “In addition to the storage issues we were trying to overcome, Citistreet must comply with SEC, Sarbanes-Oxley and HIPPA regulations. This added the constraint of a permanent, write once solution with a critical emphasis on reliability of recovery.”

“Citistreet selected Ultra Density Optical (UDO) for its archive data repository. UDO was selected for several reasons:

- Cost – the cost per GB for UDO is significantly less than tape.
- Removable Media – the media can be removed (as opposed to self-contained disk subsystems) which gives larger capacity
- Security - With regulatory requirements, it is critical to have a policy in place to keep regulated data, but the data must be retrievable. If media is subpoenaed and cannot be read, Citistreet could be held responsible for the most damaging evidence presented. Tape is not a reliable enough media for long term (multi-year) storage.”

“There were different vendors competing for the complete application solution, these were EMC and Veritas. Both vendors offered solutions to the requirements but there were several challenges that had to be overcome.”

Machols installed the jukebox last July after considering content addressable storage (CAS). “I looked at [EMC] Centera, but it was real expensive considering you’re paying for SATA drives. It’s really cheap disk, so how come I’m paying half a million dollars for disk that I can buy for \$50,000? We would have been paying for the software, the front end, and big engines built in, and we didn’t need it. So we were paying for SATA drives that you can’t rewrite to.”

Citistreet had Veritas Netbackup in place as the backup and recover solution for all data and backend systems. To keep consistency, Veritas Enterprise Vault was selected as the software to use for the archiving solution for documents. This would allow the data to appear on the servers so the users would not have to remember where files were located. Also, it was desired to keep the current Netbackup environment to avoid large software costs for new license and time and cost for installation and training of new products. “As we were evaluating and testing the product, it was discovered that neither Veritas Enterprise Vault nor NetBackup was compatible with the UDO storage libraries, it did not have drivers for this.”

The main technical challenge Citistreet had was making Veritas connect to UDO devices, which the Pegasus software took care of. It turned out the integration issues were far more challenging than the core technical ones. Machols said, “Even though there were advantages to keeping Veritas, there was a new found challenge of connecting to the UDO devices and if so, how would this be accomplished. EMC had a solution that would provide all the hardware and all the software from one vendor. Having multiple software products from different vendors can cause wasted time during integration due to finger pointing and third-party communication issues. This issue was resolved by Datalink, who provided the services to



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integrate and support Veritas and Pegasus - the certified media manager for UDO. Having this 'one throat to choke' allowed us to have the advantage of one vendor, while keeping the Veritas software. Datalink helped facilitate communication between the vendors. In addition, the technical experience of the Datalink engineers gave an additional dimension to the problem solving capabilities, which enables the process to move quicker and get problems resolved faster."

Machols added: "Pegasus' software being the certified media manager for Enterprise Vault and NetBackup was really important. As the information being archived is critical information in terms of both business operation and regulatory requirements, Citistreet was not willing to put in a solution that didn't have the full support of all parties. We could not afford to get into a situation where an issue arose and one or more of the vendors could not help."

"As a result of Citistreet being able to address the stringent archive storage requirements with this solution, we are considering rolling out this system for not only Windows based file systems and file shares, but also for core applications.