eBook

Achieving Cost Savings in Backup with Deduplication

5 Real-World Customer Stories

Introduction:

The Paradox of Growing Storage Requirements in a Recession

The environment for all businesses has changed dramatically in the past year. While many IT projects will be reduced along with budgets, the amount of data an organization creates and must retain continues to grow. A recent study of global enterprise companies by IDC indicated IT administrators have seen data storage needs grow to more than a petabyte (1,000,000 gigabytes) in the past three years. Companies like this typically need up to 100 terabytes of storage, and small to mid-sized enterprise companies are also experiencing similar levels of data growth. This creates the paradox of a higher burden placed on a vulnerable point in the storage architecture—the backup system—in recessionary times.

As data increases and more data resides on servers, executing successful daily backups is becoming more difficult. Tape libraries, with their known reliability problems, have failed to keep up, as only 20% of all backup jobs are completely successfully according to research firm, ESG. Backup times that exceed the available window leave critical data unprotected, and many companies have yet to consider the ramifications of a failed restore until it was too late. For a significant portion of companies and organizations, risk of failure remains high.

Despite the clear operational advantages of shorter backup and recovery times, greater reliability, and enhanced IT productivity, improving backup via disk-based backup with deduplication requires an investment whose payback is often difficult to quantify. Fortunately for IT managers, significant performance and productivity gains are achievable at a cost equivalent to that currently being spent, with paybacks reported in as fast as several days to 6 months.

Examining the budget for operating and maintaining tape libraries reveals an opportunity to reinvest for a better outcome in areas including:

- Cost of tape media and storage: monthly costs for tapes and media replacement, tape storage, retrieval, transporting tape to a second location, and tape administration.
- Labor savings: Productivity costs include monitoring during tape back-ups, maintaining equipment such as cleaning heads, loading and changing tapes, labeling and physically transporting to offsite for disaster recovery.
- Cost of tape library maintenance: Tape libraries age poorly, tape arms break and the same issues that haunt tape today such as poor security, poor performance, and a lack of data integrity will continue.

This eBook shares 5 customer case studies to demonstrate operational gains and help address the question of whether the cost and inefficiencies of the existing tape library can be better utilized by moving to disk backup with deduplication.

Back-up with Deduplication Makes Sense in Tight Budgetary Times

The fact is for many environments, particularly the small to medium-sized enterprise, the total cost of tape backup and disk backup with deduplication are equivalent. The key differential typically occurs in the operating costs of tape vs. backup with deduplication, including costs of tape media and storage, labor, and cost of tape library maintenance. The following are five examples of ExaGrid customers whose initiatives were driven by operational issues—primarily a need for faster, more reliable backups and better disaster recovery—but who have also experienced clear savings while achieving their operational objectives.

Fleetwood Enterprises, Inc.

Fleetwood Enterprises and its various subsidiaries produce, distribute, and service recreational vehicles and manufactured housing. Fleetwood is headquartered in Riverside, California and employs approximately 2,600 people in 15 plants located in 10 states.

Background and Problem:

The IT staff had been backing up the company's more than 10TB of data each night to locally attached tape drives, but began looking at disk-based solutions in an effort to simplify processes, as well as cut costs, manual errors, tape failure risks and the number of staff hours spent managing and administering backups. Seven full-time data-center operators were required to manage tape backups. Fleetwood was also looking for ways to improve its ability to recover from a disaster. The company had performed a business impact analysis, including an evaluation of the cost of lost data and the cost of downtime. That analysis determined that their goal of a 24-hour recovery was impossible with tape, and they estimated 3-5 days to recover from disaster, with irreparable harm.

Business Impact and Savings:

Since installing the ExaGrid system, Fleetwood has been able to achieve the following operational gains and cost savings:

- Operations: Reduced backup times by two-thirds and has made its overall backup processes more efficient. They have also achieved their goal of a 24-hour recovery period from disaster.
- Labor savings: Reduced number of full-time data-center operators to perform and manage tape backups from seven to three, because the backup process is now more efficient.
- Cost of tape media and storage: In addition to operator salaries, the company has been able to reduce tape costs by more than $5,000 per month and tape storage fees by $4,000 per month

"Our return on investment has been extraordinary with the ExaGrid system. We expect to be able to recoup the system cost in as little as six months."

Morningstar

Morningstar is a leading provider of independent investment research with locations in North America, Europe and Asia Pacific. With operations in 18 countries, Morningstar currently provides data on more than 280,000 investment offerings worldwide.

Background and Problem:

Morningstar had been backing up its data to tape, but with nightly incremental backups of nearly 6TB and weekly full backups of up to 18TB, their backup windows had grown "out of control" and tape management was a significant burden. The company rotated out up to 40 tapes each day and up to 90 tapes each weekend. Backups were also lengthy: nightly backups began at 9pm and ran until 2pm the next day, and full backups stretched from Friday night until Tuesday morning. In addition, reliability was a significant issue, as their tape drives would break down and they experienced continuous problems with tape media. Morningstar often experienced situations where they believed they had executed a successful backup; however, they would attempt to recover the data and then find it simply was not there.

Business Impact and Savings:

Since installing the ExaGrid system, Morningstar has been able to achieve the following operational gains and cost savings:

- Operations: Reduced backup times by one-third, with more gains expected. Now able to keep 45 days of retention on the system.
- Labor savings: Reduced the number of man hours spent on managing and administering tape backups by approximately 75%. Morningstar's network administrator previously spent the majority of a work-day managing backups, and now spends under 2 hours per day.
- Costs of tape media and storage: Saved $3,000 per month in tape costs, plus additional savings in tape transportation and storage fees.

"It got to the point where I spent the majority of my day managing backups… I used to worry each night about backup jobs failing, especially over the weekend. The ExaGrid system has taken all of the worry and hassle out of our backups and it frees me up to do other things. The ExaGrid was also more cost-effective than the other solution evaluated."

NPS Pharmaceuticals

NPS Pharmaceuticals (NASDAQ: NPSP) develops specialty therapeutics for gastrointestinal and endocrine disorders. NPS complements its proprietary programs with a royalty-based portfolio of products and product candidates that includes strategic partnerships with Amgen, GlaxoSmithKline, Kyowa Kirin, Nycomed and Ortho-McNeil. NPS is located in Bedminster, New Jersey

Background and Problem:

NPS was dealing with lengthy backup windows and difficulty restoring data from tape. Weekly full backups to tape took 38 hours, and they found it increasingly expensive to purchase, store, and transport tapes. In addition to reducing the company's reliance on tape, the IT staff wanted to make adhering to Sarbanes-Oxley (SOX) regulations easier and less time-consuming than with tape, and they also needed to improve disaster recovery. Their previous disaster recovery plan was to grab the tapes, find a co-location facility to set up in, and then attempt to rebuild their information from the tape media, despite their experience that restoring data from tape was a risky, labor-intensive process .

Business Impact and Savings:

Since installing the ExaGrid system, NPS has been able to achieve the following operational gains and cost savings:

- Operations: Reduced full backups from 38 hours to 13 hours, and reduced daily incremental backups by at least 50 percent. The two-site ExaGrid system has enhanced NPS's disaster recovery scenario, such that they can remote to their DR center and immediately access backups from the previous night.
- Labor savings: Saved a significant amount of IT staff time in managing and administering tape backups and restores, and in meeting SOX compliance requirements. This is the biggest area of cost savings.
- Costs of tape media and storage: Saved $1,500 per month in tape costs and tape storage fees.

"The return on investment for the ExaGrid system is tremendous. It's easy to justify the cost of the ExaGrid system with hard numbers like tape, storage and transportation costs, but it makes even more sense when you figure in the amount of time we spend managing and troubleshooting backups and restores and the cost of downtime for the user waiting for a file."

Gardner Trucking

Based in Chino, California, Gardner Trucking operates a fleet of 1100 trucks and 1900 trailers on the throughout eleven western states. Gardner Trucking also has terminals in Tracy, California and Sumner, Washington and operates 42 dedicated fleets on-site at various customer locations.

Background and Problem:

Gardner Trucking relies heavily on technology to manage its business data and the data associated with its fleet on the road. The firm's backup requirements had grown quickly, and its IT staff was struggling to keep up with nightly backups that stretched over 13 hours. Backups began at 8 pm and ran until 9:30 am, but users begin their day at 4:30 am. If someone came in and started working on a database that hadn't been backed up, it was not protected. Backing-up to tape was severely impacting their capability to begin each day productively and with complete backups. The IT staff also grappled with data restores. For Gardner Trucking, restoring data from tape meant searching through the tape for up to seven hours to find the correct file.

Business Impact and Savings:

Since installing the ExaGrid system, Gardner has been able to achieve the following operational gains and cost savings:

- Operations: Nightly backup times were reduced by 85%, from the previous 13 hours to less than 2 hours.

  Restore times were also reduced to just 25 minutes. Two days after installing the ExaGrid system, it was tested when Gardner Trucking lost its database and immediately restored it to keep the business moving. With tape, the entire process of restoring the file and re-indexing all of the files would have affected their business systems for two days, at an estimated cost to the business of $200,000 in lost business and productivity. That loss was avoided with ExaGrid, delivering an immediate payback of the systems' cost.

"The ExaGrid system offered significantly better price/performance than other solutions…and came in at approximately 25 percent the cost of competitive solutions…We estimate that we would have lost approximately $200,000 in business and productivity if we had to restore our database from tape. The ExaGrid system more than paid for itself in the first two days."

Eby-Brown

Based in Naperville, Illinois, Eby-Brown is the second largest convenience store products distributor in the United States. With $4.1 billion in sales and 2,150 employees, Eby-Brown serves 12,000 retail locations from seven distribution centers.

Background and Problem:

The IT staff at Eby-Brown was struggling with tape backups, largely due to the growth of the company's databases beyond the capacity of its tape library. The staff began backing up the company's data at 4 pm on Friday afternoon and ran backup jobs until Monday morning. For users, the long backups meant system slowdowns at the beginning of the work week. They were also concerned about their ability to properly protect their information using tape going forward, and wanted to improve their disaster recovery capabilities.

- Operations: Since installing the ExaGrid system, Eby-Brown has increased the amount of data it backs up, and weekly full backups now take just hours instead of days. The company has nearly eliminated tape, and now just backs up a small amount of low priority information using tape. They have improved their DR capabilities via one primary backup in their Naperville datacenter and a second system five hours away in Indiana.
- Labor savings, combined with costs of tape media and storage: Eby-Brown's total cost of ownership with ExaGrid is significantly less than that with tape.

"Before we went with ExaGrid, we performed a cost of ownership analysis that showed installing the ExaGrid systems would cost us less than tape. When you consider the cost of tape, transportation and the amount of time our IT staff had devoted to managing tape and performing restores, purchasing the ExaGrid system is a no-brainer."

Although the business policies and current backup environments for each of these companies are unique to each organization, it's clear from the number of companies now making the switch to disk backup with deduplication that the operational and budget efficiencies to be gained are compelling.

Beyond those operating savings and productivity gains, there are other considerations for an organization when moving off tape to disk backup with data deduplication.

Tape Deficiencies Eliminated

- Greater reliability and an ability to verify the data has been properly backed-up.
- Higher security, as the data resides in a data center with data center security and is a sealed media
- Shorter backup windows—typically 50-90% faster than tape
- Faster, near-instantaneous restores

No Change in Backup Application

- All major backup applications natively support writing to disk in addition to tape. This means that only the tape library and tapes will be replaced by the ExaGrid backup system.

Increased Scalability

- ExaGrid's architecture maintains performance as your data grows. With our GRID model we are able to scale and maintain the performance as more data is backed-up. Tape libraries hit a point where a new library is needed after reaching certain data thresholds.

Better Disaster Recovery, Offsite Tape Replacement for Nightly Backups

- ExaGrid can replace both onsite and offsite tape copies with efficient disk storage with data deduplication
- Only byte-level changes are replicated across the WAN for WAN efficiency. All changes are merged into the offsite copy to keep a full copy up to date for fast disk restore

The ExaGrid Approach to Backup with Deduplication

The InfoPro, a market assessment firm, recently released a report indicating backup redesign as the top storage-related initiative for the mid-size enterprise market. This same report indicated deduplication is having the greatest impact on their architecture. The reasons behind this surge in interest are cost and productivity savings.

Particularly in these challenging economic times, companies and organizations must look to better leverage their resources. Deduplication technology delivers the most value at the backup infrastructure tier. By significantly reducing the backup window, ensuring the integrity of data backed-up, eliminating manual intervention, and eliminating the time spent with tape, IT staff can significantly increase their overall productivity. The costs associated with running back-ups with tape libraries are budgeted; now IT management has the opportunity to redeploy those dollars and resources to greater effect.

Companies and organizations appreciate ExaGrid's approach of being the leader in providing cost-effective disk back-up solutions with deduplication.

ExaGrid's turnkey disk backup system combines high quality SATA drives with byte-level delta data deduplication. ExaGrid's byte level delta algorithm is a content aware method of deduplication. A key benefit of this "content aware" approach is backup job reporting. This kind of reporting shows customers the deduplication ratio achieved for each of their backup jobs or data types. With this information customers will know which backup jobs meet their targeted standards, enabling more precise data management to achieve the best possible deduplication ratio and efficiency. ExaGrid's byte-level delta deduplication technology stores only the changes from backup to backup instead of storing full file copies, reducing the amount of disk space needed by 10 to 50:1. The other major benefit of ExaGrid's approach is our GRID scalable architecture which means as the data grows system performance is not affected. While other solutions see lower performance and back-up windows stretch as data grows, ExaGrid maintains absolute performance regardless of the data increase.

ExaGrid products are easy to install and use and work seamlessly with popular backup applications, so organizations can retain their investment in existing software. The ExaGrid solution can be used at a primary site while maintaining tape for offsite, or can be deployed as a two site solution to eliminate offsite tapes with a live data repository or for disaster recovery. When a second site is used, the cost savings can be even greater because ExaGrid's byte-level data deduplication technology moves only changes, requiring minimal WAN bandwidth for off-site data transmission.

Summary: A Way Out of the Paradox

All evidence continues to point to accelerated data growth and a greater need for fast, reliable backup systems despite an uncertain economic climate. Though the situation appears complex, the facts reveal a relatively simple but powerful solution is at the ready: dollars and time currently consumed by existing tape libraries can be far better utilized by moving to disk backup with deduplication. Fast, reliable, highly scalable, and exceptionally cost-effective. Paradox eliminated.

About ExaGrid

ExaGrid is the leader in cost-effective and scalable disk-based backup solutions with byte-level data deduplication. A highly scalable system that works with existing backup applications, the ExaGrid system is ideal for companies looking to quickly eliminate the hassles of tape backup while reducing their existing backup windows. ExaGrid's patented approach minimizes the amount of data to be stored by providing standard data compression for the most recent backups along with byte-level data de-duplication technology for all previous backups. Customers can deploy the ExaGrid system at primary sites and secondary sites to supplement or eliminate offsite tapes with live data repositories or for disaster recovery.