

Ten ways to save money with IBM data protection

*Realize superior return on investment with comprehensive backup
and recovery solutions from IBM*



Introduction

Rapid data growth and inefficient data protection systems are causing many organizations to spend money in ways they'd rather not. Modernizing data protection technology can be an excellent way to save money—and free up funds to invest in new ideas. Data protection is a core IT process, and small improvements can have a big impact on the value IT brings to the organization. This is especially true on today's smarter planet, where instrumented, interconnected and intelligent businesses collect, process, use and store more data than ever before.

IBM has found clients can save up to 38 percent in backup infrastructure costs by switching to IBM Tivoli Storage Manager.

—Assessments from more than 400 Backup Analysis Engine reports from Butterfly Software¹

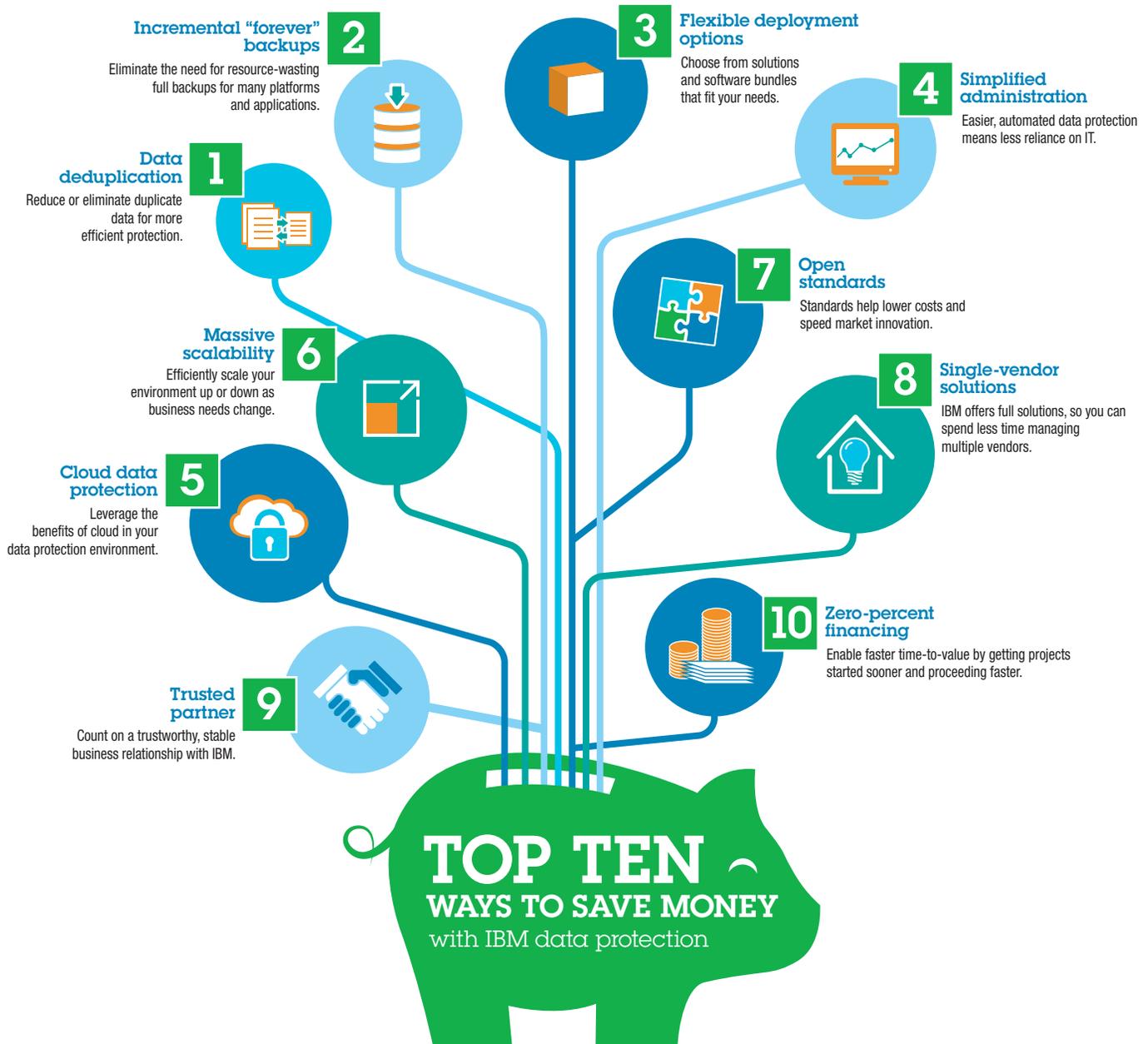
Using Backup Analysis Engine reports from Butterfly Software, IBM has assessed hundreds of environments for client backup modernization projects. This tool helps generate detailed reports on return on investment (ROI) and total cost of ownership (TCO) from its analyses of current infrastructure

and backup needs. Armed with that data, as well as assessments of competitive data protection software, IBM has documented that users can realize significant cost savings by choosing IBM data protection software.

Imagine the possibilities if your organization's IT staff could spend more time on innovation and less on managing an inefficient infrastructure. This white paper describes 10 ways that IBM data protection solutions can help organizations save money while addressing modern data protection challenges.

Ten ways IBM data protection solutions can help you save money:

1. Data deduplication
 2. Incremental “forever” backups
 3. Flexible deployment options
 4. Simplified administration
 5. Cloud data protection
 6. Massive scalability
 7. Open standards
 8. Single-vendor solutions
 9. Trusted partner
 10. Zero-percent financing
-



1. Data deduplication

“The Tivoli data deduplication capability reduced our storage footprint by 30 percent and our power and cooling costs by 30 to 40 percent.”

—Peter Nielsen, CEO, Front-safe A/S

Today, most organizations use deduplication for some workloads, but not all, due to concerns about cost, performance and complexity. One way IBM helps organizations save money on data protection is by offering cost-effective, high-performance, easy-to-use data deduplication for *all* data protection workloads.

Cost effectiveness

While deduplication significantly reduces storage requirements, some application owners worry about overhead. In addition, backup servers can have limited resources for deduplication processing. That’s why IBM offers deduplication that can operate on backup servers, source systems, and dedicated deduplication gateways or appliances.

With the Tivoli Storage Manager capacity pricing model, deduplication can significantly decrease backup software license costs, whether using Tivoli Storage Manager or IBM ProtecTIER® data deduplication.

Scalable deduplication

IBM deduplication solutions are suitable for both large-scale and high-performance workloads. For example, ProtecTIER gateways are scalable to 1 PB of physical storage, providing up to 25 PB backup storage capacity. In addition, a single Tivoli Storage Manager server can process and deduplicate up to 20 TB of new data per day using a combination of source and target deduplication.² ProtecTIER deduplication can sustain backup throughput rates of up to 9 TB/hour and can restore data even faster, at up to 11.5 TB/hour.

Ease of use

Tivoli Storage Manager deduplication is a simple configuration option. Data is replicated offsite in a deduplicated state and reduplicated as needed to restore or write tapes.

ProtecTIER, Tivoli Storage Manager and other IBM Storage offerings feature advanced visualization and intelligent presets based on the same graphical user interface (GUI) model.

2. Incremental “forever” backups

“Our critical metrics are backup time, data growth rate and cost. Tivoli Storage Manager software backs up incredibly fast, and its incremental forever feature keeps our storage costs down, even though our data pool is increasing.”

—Jeff Zurflueh, director of data center services, Cash America

Most backup software requires periodic full backups to maintain restore performance, creating unnecessary work for backup infrastructures. IBM can help organizations save money by implementing incremental forever backups, which take less time and require less infrastructure.

Consider the impact on big data and analytics systems that use both active and historical data, or shared file systems where only a small percentage of data changes each day. What if you could eliminate the cost of backing up all that unchanged data every week?

Incremental forever means no more full backups. Once data has been backed up by Tivoli Storage Manager, you can recover that data, or the whole system, quickly and easily.

Tivoli Storage Manager incremental backups are easy to configure and manage, requiring no extra administration. Tivoli Storage Manager incremental backups are available for VMware environments, file systems and other environments. To enable them in VMware environments, Tivoli Storage Manager is integrated with the VMware Changed Block Tracking feature.

3. Flexible deployment options

“We believe that the most interesting aspect of [IBM Tivoli Storage Manager Suite for Unified Recovery] is a pricing model that is based on actual capacity under management after data compression and deduplication processes have been applied.”

—John Webster, Evaluator Group³

IBM helps save organizations money through flexible deployment options that offer choices regarding how much of the data protection infrastructure they want to own, and how they want to pay for it.

Cloud and appliance-based solutions can reduce the cost and complexity of data protection while enabling users to switch systems quickly, sometimes in less than a day. IBM even publishes reference architecture blueprints for Tivoli Storage Manager that can simplify hybrid cloud deployments and enable IBM Business Partners to build backup appliances faster.

In addition, Tivoli Storage Manager is available in several solution bundles that can save clients money on software licenses needed to protect common workloads. For example, Tivoli Storage Manager Suite for Unified Recovery offers pay-as-you-go capacity licensing and includes agents for VMware, SAP, email and databases. To reduce license costs even further, it also has three specially priced options for specific workloads:

- IBM® Tivoli® Storage Manager Suite for Unified Recovery – Entry—Can save users up to 55 percent for smaller workloads⁴
- IBM Tivoli Storage Manager Suite for Unified Recovery – Archive—Can save users up to 80 percent for archive data⁵
- IBM Tivoli Storage Manager Suite for Unified Recovery – ProtecTIER Option—Can save users up to 75 percent when used with ProtecTIER deduplication⁶

4. Simplified administration

IBM solutions enable organizations to automate, and therefore simplify, backup administration. This saves money by reducing the reliance on IT experts, without risking data protection.

VMware administrators

“IBM has hit the mark for VMware administrators with its purpose-built data protection solution for VMware. Administered directly from VMware vCenter, IBM Tivoli Storage Manager for Virtual Environments requires only a handful of clicks to back up a full VMware ESX cluster. It is designed to be simple, require minimal backend infrastructure, and enable organizations to start small but grow massively big.”

— Jason Buffington, senior analyst, ESG

IBM data protection software enables VMware administrators to configure, schedule and report on backups using a familiar VMware administration interface.

Storage administrators

“Tivoli Storage Manager Operations Center is the best thing to happen to Tivoli Storage Manager since incremental forever.”

—Wanda Prather, Baltimore-Washington Tivoli Storage Manager user group member

Tivoli Storage Manager Operations Center enables nontechnical users to see at a glance whether data is protected, which helps administrators resolve problems faster. In addition, IBM can consolidate Tivoli Storage Manager, IBM Tivoli Storage Manager FastBack® and IBM Tivoli Storage FlashCopy® Manager backups from multiple locations, simplifying recovery management.

5. Cloud data protection

Cloud computing could save US businesses as much as USD625 billion over five years.

—Sand Hill Group⁷

Helping service providers and data centers take advantage of the benefits of cloud, IBM offers business-class cloud data protection solutions. These solutions can help organizations implement cloud computing and cloud business models with advanced capabilities that include:

- Policy-based administration to help standardize service classes and improve staff efficiency
- Support for multiple service classes, ranging from daily backups to frequent snapshots to remote mirroring
- Multi-tenancy, which is a requirement for public clouds
- Security, which is a primary concern for all cloud projects
- Usage accounting and reporting that can accommodate flexible billing plans
- Integrated multi-site replication
- A cloud portal option that simplifies on-boarding, reporting and invoicing for cloud data protection services

IBM solutions can also simplify data protection for cloud applications built with VMware and OpenStack. In fact, Tivoli Storage Manager was the first data protection solution to have backup drivers accepted and included in the OpenStack distribution. And it integrates with VMware vCloud Director to enable coordinated backups and restores of VMware vApps.

6. Massive scalability

“What’s different now is that we’ll no longer experience data explosions. Tivoli Storage Manager allows us to keep pace with and manage data growth seamlessly and in ways we’ve never been able to before.”

—Kumar Kancharana, senior systems analyst, Piedmont Healthcare

IBM data protection solutions can grow as data grows, with more scalability per backup server than ever before. Tivoli Storage Manager is a comprehensive backup and recovery solution that can support organizations ranging from small businesses to large enterprises.

Because Tivoli Storage Manager scales so efficiently, users need fewer backup servers as data grows. Organizations can consolidate backups onto Tivoli Storage Manager to reduce

the number of backup and media servers by up to nine times, compared to competitor solutions.⁸ Consolidation onto Tivoli Storage Manager can lower backup infrastructure costs up to 38 percent¹ by reducing requirements for hardware, maintenance, cooling, power and rack space. Tivoli Storage Manager has the following scalability credentials⁹:

- Protects up to 400 TB of data or four billion data objects in a single backup server
- Backs up as many as 1,000 virtual machines in less than 36 minutes²
- Manages up to 100,000 backups from one Tivoli Storage Manager Operations Center hub server¹⁰
- Uses the scalable IBM DB2® enterprise database for its catalog
- Ingests, deduplicates and replicates up to 20 TB/day of new data per backup server¹¹

7. Open standards

“Having open standards around cloud will help achieve an IT environment with fewer boundaries, increase the speed of adoption and add a new level of flexibility.”

—Laurent Liscia, CEO, OASIS¹²

Adopting and contributing to open standards is another way IBM helps organizations save money. Collaboration through open standards is known to reduce costs and speed innovation, providing direct value to organizations. Specific data protection examples include:

- The IBM sponsorship of OpenStack led to Tivoli Storage Manager backup drivers and storage-assisted data migration becoming part of the OpenStack Havana distribution.
- IBM contributed the standard used for storage systems interoperability—SNIA Storage Management Initiative Specification (SMI-S)—which enables snapshots, remote mirroring and other storage management functions to work across storage systems.
- IBM supports the Representational State Transfer (REST) application programming interface (API) to enable transparent administration of complex infrastructures.

- IBM is a founding member of the Linear Tape-Open (LTO) consortium, and contributed the popular IBM Linear Tape File System™ (LTFS) technology.
- IBM support for Linux led to Tivoli Storage Manager availability on Linux for IBM System z® and scalability enhancements that now benefit all Tivoli Storage Manager environments supporting large workloads.

While not an open standard, VMware is part of many modern data centers. The first storage product certified by VMware was IBM System Storage® SAN Volume Controller. Today, IBM enables administrators to perform many data protection and storage management functions using VMware interfaces. This integration with VMware helps organizations save money by enabling more applications to be hosted in virtual environments. Examples of VMware integration include:

- VMware Changed Block Tracking integrates with Tivoli Storage Manager to enable incremental forever backups for VMware.
- VMware vMotion live migration integrates with IBM storage virtualization software to enable transparent application and data migration between data centers.
- VMware vCloud Director integrates with Tivoli Storage Manager to enable coordinated backups and restores of VMware vApps.
- The VMware vCenter plug-in provided with Tivoli Storage Manager enables backups to be configured, scheduled and reported on using familiar VMware tools.

IBM data protection solutions also adhere to standards from Microsoft, Oracle, SAP and others.

8. Single-vendor solutions

“[Tivoli Storage Manager] provides recovery management in complex, highly distributed environments by using [Tivoli Storage Manager] to manage different backup types and offer different levels of recovery. A single [Tivoli Storage Manager] environment can manage incremental backup/restore, continuous data protection (CDP) with transaction-level recovery for servers and endpoints, system-level backup and recovery, and fast application-aware backups and restores leveraging advanced snapshot technologies.”

—Robert Amatruda, IDC¹³

IBM offers complete solutions to meet data protection needs. Purchasing all technology components from one vendor enables IT staff to spend less time managing multiple vendors, integrating multiple products and managing support calls between vendors.

IBM data protection solutions support a full range of requirements, including daily backups, frequent snapshots and remote mirroring, to enable the required level of data availability. IBM solutions support virtual, physical and cloud environments, and IBM offers a consistent platform optimized to support a wide variety of workloads. In addition, IBM can be your single source for software, hardware and professional services.

9. Trusted partner

IBM is the number three global brand with an estimated value of USD113 billion.

—WPP and Millward Brown annual BrandZ ranking, May 2013¹⁴

For decades, organizations have trusted IBM to help them protect and recover data from virtually every type of disaster imaginable. Organizations can plan projects with confidence when partnering with IBM, which offers not only reliable, industry-leading data protection solutions, but a trustworthy, predictable business relationship. Firmly committed to every client's success, if something isn't right, IBM works to make it right. Before, during and after the sale, IBM experts follow documented best practices designed to garner positive client outcomes. Additionally, IBM fosters open collaboration between users and developers through its transparent development process.¹⁵

IBM invests heavily in research and development, providing clients with innovative products, roadmaps to help improve their project planning and straightforward upgrade policies.

10. Zero-percent financing

IBM offers rates as low as zero percent for 12-month loans on IBM software, storage and servers.¹⁶

IBM Global Financing helps organizations acquire the data protection solutions that their businesses need in a cost-effective manner by replacing large, up-front costs with predictable payments over time. For example, financing can help align IT expenditures to projected benefits, which can help data protection projects show positive cash flow sooner. IBM can work with organizations' finance teams to determine whether financing can benefit their data protection projects.

IBM offers competitive financing to qualified buyers for hardware, software, deployment, staff training and other professional services, from both IBM and other vendors.¹⁷ Ask your IBM representative for a payment plan proposal. For more information, visit IBM Global Financing at ibm.com/financing

Why IBM?

IBM can help protect your data for less—up to 38 percent less in backup infrastructure costs alone.¹ IBM makes it easy to modernize and has helped thousands of organizations update their data protection systems with new capabilities and high-efficiency components.

Innovative technology, open standards, a history of reliable performance and a broad portfolio of proven storage offerings—all backed by IBM with its recognized leadership—are just a few of the reasons why you should consider IBM.

For more information

To learn more about IBM data protection solutions, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/software/tivoli/csi/backup-recovery

¹ Average of individual customer Backup Analysis Engine reports from Butterfly Software, May 2013, n=450. Savings include cumulative 36-month hardware, maintenance and electrical power and exclude a one-time Tivoli Storage Manager migration cost.

² Performance based on IBM measurements using simulated workloads in a controlled environment.

³ John Webster, "Pay-as-you-Grow Data Protection: IBM Tivoli's Full-featured Data Protection Suite for Small to Medium Businesses," *Evaluator Group, Inc.*, February 2013. http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=SWG_E_TI_SG_USEN&htmlfid=TIL14062USEN&attachment=TIL14062USEN.PDF

⁴ Tivoli Storage Manager Suite for Unified Recovery – Entry is limited to 100 TB of managed backup data, measured after deduplication and other efficiency features are used, and two Tivoli Storage Manager servers per enterprise.

⁵ Tivoli Storage Manager Suite for Unified Recovery – Archive applies to data ingested through an archive operation and backed up to Tivoli Storage Manager virtual tape library or tape archive pools. Data backed up to other storage pools is fully supported and charged at the standard Tivoli Storage Manager Suite for Unified Recovery capacity rate.

⁶ Tivoli Storage Manager Suite for Unified Recovery – ProtecTIER Option measures capacity after IBM ProtecTIER deduplication is used. Assuming 4:1 deduplication, Tivoli Storage Manager Suite for Unified Recovery capacity-based licensing for data stored with ProtecTIER would be 75 percent less than the top-tier rate.

⁷ “Job Growth in the Forecast: How Cloud Computing is Generating New Business Opportunities and Fueling Job Growth in the United States,” *Sand Hill Group*, 2011. <http://www.news-sap.com/files/Job-Growth-in-the-Forecast-012712.pdf>

⁸ Based on a comparison with Symantec NetBackup. Scalability recommendations for Symantec NetBackup can be found at: http://www.symantec.com/content/en/us/enterprise/fact_sheets/b-netbackup_appliance_5030_DS_21273483-1en-us.pdf

⁹ Scalability figures apply to Tivoli Storage Manager v7.1 or later.

¹⁰ IBM lab simulation, November 2013

¹¹ Based on IBM simulations with IBM large model reference architecture blueprint for Tivoli Storage Manager.

¹² Laurent Liscia, CEO, OASIS, December 2013.

¹³ Robert Amatruda, “IBM Enhances Tivoli Storage Manager 7.1 with Key New Features,” *IDC Flash, Doc #244620*, November 22, 2013. http://www.ibm.com/common/ssi/cgi-bin/ssialias?subtype=WH&infotype=SA&appname=SWGE_TI_SG_USEN&htmlfid=TIL14089USEN&attachment=TIL14089USEN.PDF

¹⁴ BrandZ top 100 most valuable global brands ranking for 2013 was commissioned by WPP and conducted by Millward Brown. It calculates brand value by using in-depth financial data alongside interviews with more than two million consumers from around the world. <http://money.cnn.com/gallery/news/companies/2013/05/20/best-global-brands/3.html>

¹⁵ The transparent IBM development process enables client participation via the [IBM Service Management Connect](#) portal, [IBM Tivoli Storage Operations Center community](#) and other facilities.

¹⁶ For zero-percent financing, charges for software and services must be one-time and non-recurring. Minimum deal size is USD5,000, with a maximum of USD1 million. Not available in all areas. Not all products qualify for all offers, please check with your local representative. See ibm.com/financing for details.

¹⁷ IBM Global Financing offerings are provided through IBM Credit LLC in the United States and other IBM subsidiaries and divisions worldwide to qualified commercial and government clients. Rates and availability are based on a client’s credit rating, financing terms, offering type, equipment and product type and options, and may vary by country. Non-hardware items must be one-time, non-recurring charges and are financed by means of loans. Other restrictions may apply. Rates and offerings are subject to change, extension or withdrawal without notice and may not be available in all countries. See ibm.com/financing for details.



© Copyright IBM Corporation 2014

IBM Corporation
Software Group
Route 100
Somers, NY 10589

Produced in the United States of America
January 2014

IBM, the IBM logo, ibm.com, ProtecTIER, System Storage, and Tivoli are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the web at “Copyright and trademark information” at ibm.com/legal/copytrade.shtml

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft is a trademark of Microsoft Corporation in the United States, other countries, or both.

Linear Tape-Open, LTO, and the LTO Logo are trademarks of HP, IBM Corp. and Quantum in the U.S. and other countries.

The content in this document (including currency OR pricing references which exclude applicable taxes) is current as of the initial date of publication and may be changed by IBM at any time. IBM Business Partners set their own prices, which may vary. Not all offerings are available in every country in which IBM operates.

It is the user’s responsibility to evaluate and verify the operation of any other products or programs with IBM products and programs.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED “AS IS” WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.



Please Recycle