

White paper
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Tivoli software



Managing the tidal wave of data with IBM Tivoli storage management solutions

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Executive summary

With ever-increasing data growth worldwide, organizations must find smarter ways to store and manage their massive volumes of data. IBM Tivoli® storage management software solutions provide you with exceptional value and functionality to maximize your current storage environment and reduce operational and capital costs while improving service and managing risks. Flagship products such as IBM Tivoli Storage Productivity Center, IBM Tivoli Storage Manager, IBM Tivoli Storage Manager FastBack, and IBM System Storage™ SAN Volume Controller can help you build a dynamic storage infrastructure that scales to meet your evolving business requirements.

The costs of managing unabated data growth

Despite the slowing economy, unabated data growth continues due to the digitization of infrastructures worldwide, the need to keep more copies of data for longer periods, and the rapid increase in distributed data sources. This data growth translates into a wide range of increasing management challenges. At the same time, organizations are being required to adhere to higher service level agreements, including higher availability and zero data loss requirements. Many also face the challenges of integrating disparate systems and processes due to ongoing mergers and acquisitions.

Naturally, today's organizations are looking for ways to manage this tidal wave of data while adhering to flat or shrinking budgets. In the past, companies have continued to buy more storage disks as needed to manage their increasing data. This method of keeping up with data has worked, to a degree, because disk capacity has doubled approximately every 18 months, keeping pace with data accumulation. Costs for storage have come down, making storage equipment acquisitions relatively affordable.

Highlights

Today's organizations are looking for ways to manage a tidal wave of data while adhering to flat or shrinking budgets.

Gaining visibility, control and automation are keys to building a more dynamic storage infrastructure.

However, organizations are now beginning to have difficulties managing all of the storage in their environments—the costs of backup and recovery, archiving, expiration, and storage resource management are exploding. Also on the rise are the costs to power and cool these devices, which are taking up more and more space on the data center floor.

Managing smarter with IBM Tivoli storage management solutions and a dynamic infrastructure

IBM Tivoli storage management solutions offer smarter data and storage management to help you better utilize your current storage environment. These solutions can help your IT organization build and manage a dynamic infrastructure that provides the capabilities and agility to facilitate service management, asset management, data protection and retention, virtualization, energy efficiency, business resiliency, and security.

The service management element of the dynamic infrastructure is particularly relevant to the storage environment in that it can help you gain visibility, control, and automation. Increased visibility enables you to see your business services and processes. Your organization can benefit by being able to respond faster and to make better, more informed decisions. Improved control enables you to better manage risk and compliance initiatives, optimize resources, and integrate processes. Automation can help you lower costs and build agility into your operations so that you can maximize productivity, reduce labor expenses, and improve quality.

Your storage management infrastructure can help you meet today's IT challenges if it gives you a holistic view of the entire environment and how it is performing, with customizable monitoring and reporting that fit your unique needs; if it is based on strong policies, security and processes that

Highlights

Controlling data and storage capacity growth can reduce both operational and capital investment costs.

IBM Tivoli storage management solutions can provide you with increased availability of applications and data through more frequent, faster, and more reliable backups.

consistently provide the desired outcomes; and if it automatically maximizes the utilization of existing resources and adapts to changes in the environment to maintain the availability of applications and data so that demanding service level requirements are satisfied.

Reducing costs, improving service, and managing risks

Not only can a dynamic storage infrastructure enabled by IBM address your data management concerns, it can also help you reduce costs, improve service, and manage risks.

These solutions can help you reduce costs by improving the manageability of the environment and by decreasing the amount of storage you need to manage your data. We do so by implementing scalable solutions, virtualization, storage management, and data reduction capabilities such as progressive-incremental backup, hierarchical storage management, automated data expiration, and data deduplication.

To help you improve service, IBM Tivoli storage management solutions can provide you with increased availability of applications and data through more frequent, faster, and more reliable backups. These solutions can also enable faster recovery of critical data. The result is a reduction in the amount of data at risk, and a reduction in downtime when something goes wrong.

Furthermore, IBM offers software with built-in technologies to help you manage risk. For example, Tivoli Storage Manager features built-in encryption of data so that when you store data on tape, it is automatically encrypted. Tivoli Storage Manager FastBack can backup data many times per day without impacting operations, and eliminates the need to move tapes from a remote office to a central vault by efficiently replicating copies of your data over the wire to a central site for storage. As a result, you can reduce the risks of data loss and lost or stolen tapes.

Highlights

By understanding what you have and how it's performing, you can make smarter decisions about future requirements.

IBM can help you improve utilization of your existing storage resources to reduce capital investments.

Deploying a dynamic storage infrastructure

In deploying a dynamic storage infrastructure, IBM can help you understand what you have in your storage environment and determine how it's performing. We offer a holistic topology view of your storage infrastructure, along with predictive analyses, planning, recommendations, and built-in, customizable operational reporting and monitoring tools.

Next, IBM can help you optimize and reduce your storage footprint by implementing a data management lifecycle model that can enable you to identify, protect, securely move, archive, and delete data as appropriate. Data deduplication at the backup layer minimizes the amount of data being retained for operational and disaster recovery. Progressive-incremental backup technology avoids the duplicate data generated by other approaches by creating only one initial full backup and then capturing only new and changed data.

Next-generation data protection technologies that eliminate the need to shut down systems to perform regular backups further improve application availability and user productivity, while also reducing the amount of data at risk by performing more frequent backups. Additionally, IBM can help you implement industry-leading and time-trusted data protection software that scales with your growth without additional cost.

Finally, IBM can help you improve utilization of your existing storage resources to reduce capital investments. We can help you implement solutions such as virtualization of your total storage capacity across vendors, using thin provisioning at the virtualized layer to auto-assign capacity on demand.

With a dynamic storage infrastructure supported by IBM Tivoli storage management software, your organization will be able to stay ahead of the tidal wave of data while reducing costs, improving service levels and mitigating risks. You will be able to manage more data with less infrastructure, eliminate manual processes and the risks associated with them, and deliver higher levels of data availability to your users and customers.

Components of a dynamic storage infrastructure

There are three core components of a dynamic storage infrastructure, including recovery management, virtualization, and storage resource management. IBM offers a comprehensive portfolio of Tivoli storage solutions that align with each of these components, a few of which are highlighted in this document.

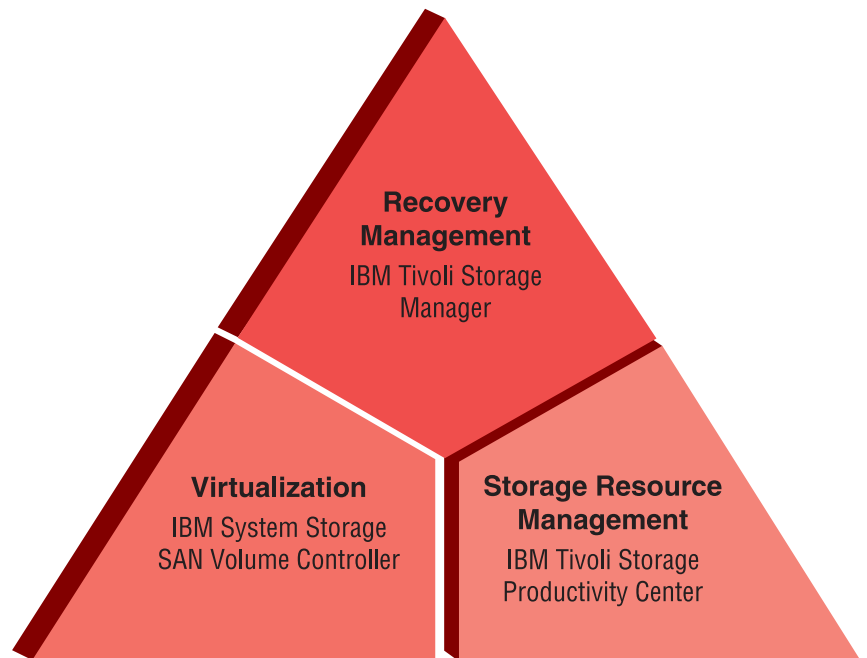


Figure 1: IBM offers Tivoli storage solutions that help you build and manage a dynamic storage infrastructure

Highlights

IBM Tivoli Storage Manager brings enhanced scalability, performance and availability to help manage and protect the tidal wave of data.

Unified recovery management with IBM Tivoli Storage Manager and FastBack

The IBM Tivoli Storage Manager family of products is delivering on a vision of unified recovery management, where data can be protected and recovered easily and seamlessly, everywhere in the organization, from laptop to mainframe.

To address data and disaster recovery requirements for a broad range of systems and operating systems, IBM Tivoli Storage Manager enables the fast backup and recovery of data center operations. It provides comprehensive data management and data reduction capabilities, including:

- *Automated, policy-based operations.*
- *Comprehensive and configurable reporting and monitoring.*
- *Progressive incremental backup.*
- *Data deduplication and compression.*
- *Hierarchy of storage to balance the needs of the data with the cost of the media.*
- *Tape reclamation to reduce expenditures on tape and maximize capacity utilization.*
- *Advanced security capabilities.*

Tivoli Storage Manager 6 dramatically increased scalability and performance over previous versions. A single Tivoli Storage Manager server can now manage up to one billion data objects, which can be files, databases, and images of entire volumes.

Highlights

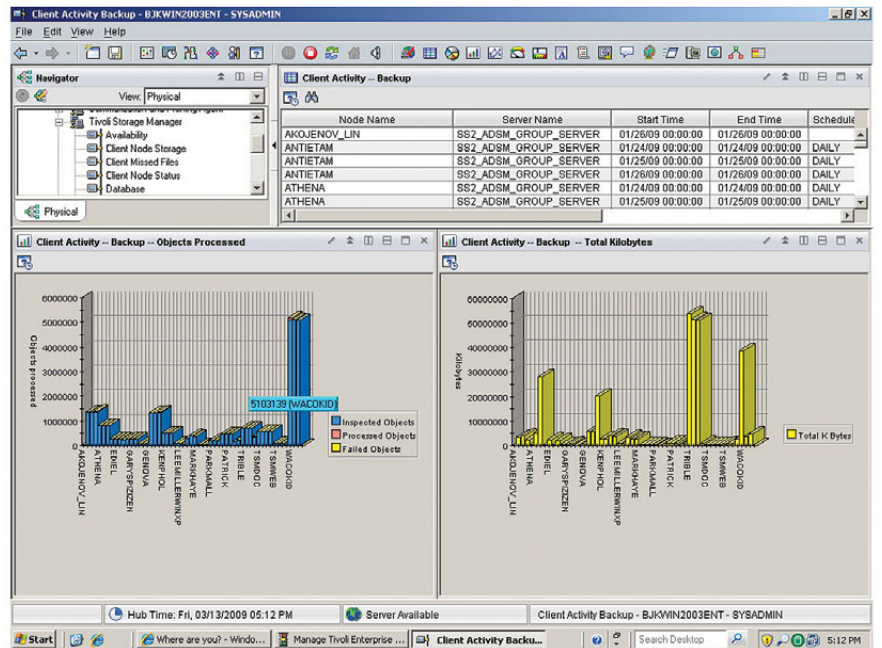


Figure 2: Tivoli Storage Manager provides customizable operational monitoring and historical reporting capabilities.

IBM Tivoli Storage Manager FastBack helps reduce the amount of data at risk between backups to almost zero, and reduces recovery time when something goes wrong to just a few minutes. Tivoli Storage Manager FastBack protects servers and workstations in remote and branch offices, as well providing enhanced recovery point and recovery time objectives for critical Microsoft® Windows® application servers in the data center.

IBM Tivoli Storage Manager FastBack offers next-generation data protection, including automated, non-disruptive, block-level incremental backups. It provides immediate recovery from almost any type of data loss, including user error (deleted files or folders), software errors and virus attacks (corrupted databases), hardware failure (disk or system crash), and disasters (lost local or regional facilities). It also eliminates backup windows and manual backup and restore processes.

Highlights

IBM Tivoli Storage Productivity Center provides a single interface to manage your entire storage infrastructure.

Storage resource management with IBM Tivoli Storage Productivity Center

For storage resource management, IBM Tivoli Storage Productivity Center (formerly IBM TotalStorage® Productivity Center) provides a single interface to manage your entire storage infrastructure, including mixed-vendor storage systems. It can help improve storage utilization, performance, and service levels through analytics, trending, change configuration, and best practices guidance. The new performance optimization feature can identify hot spots within your storage pools to help improve overall service levels for end users, which is especially useful when building cloud infrastructures. Tivoli Storage Productivity Center has green features that can enable you to conserve disk space by identifying duplicate data, orphan data, temporary data, non-business data, and infrequently accessed data that can be migrated to less expensive secondary storage platforms. Tivoli Storage Productivity Center can also help reduce storage complexity with storage reporting across host file systems, databases, and storage. It provides correlation between host usage and storage assets as well as comprehensive reporting on virtualized environments.

Highlights

SAN Volume Controller provides a simplified, standardized interface for storage management, even with multi-vendor configurations.

Storage virtualization with IBM System Storage SAN Volume Controller

To improve storage flexibility and responsiveness while also reducing costs and improving efficiency, IBM offers System Storage SAN Volume Controller. SAN Volume Controller virtually consolidates storage into pools, which improves utilization by up to 30 percent and also helps reduce storage growth. SAN Volume Controller also enables you to migrate data between storage systems without disrupting host systems and applications, and enables you to implement a tiered storage strategy to maximize your storage investments. SAN Volume Controller provides a simplified, standardized interface for storage management even with multi-vendor configurations. This capability can improve administrator productivity by up to double. Not only can SAN Volume Controller help you reduce the cost of storage, it can also help you reduce costs associated with storage management and administration.

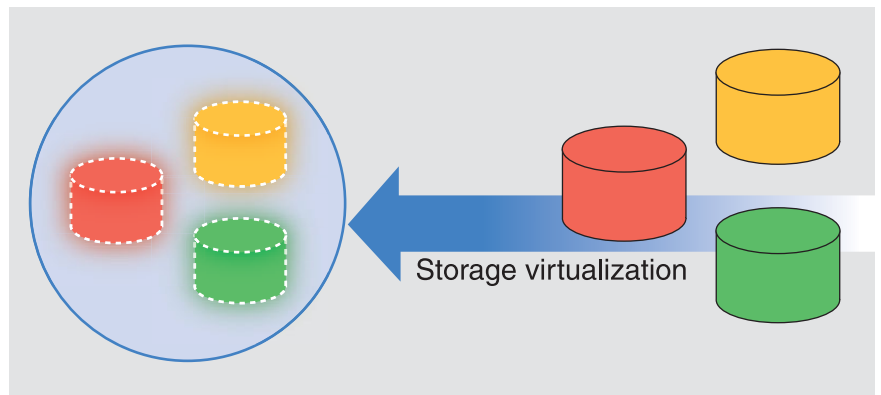


Figure 3: IBM System Storage SAN Volume Controller enables organizations to combine storage capacity from multiple disk systems into a reservoir of capacity, increasing utilization and simplifying management.

For more information

IBM is uniquely positioned to provide a wide range of storage management solutions, even for mixed-vendor environments. We can help you implement a dynamic storage infrastructure that scales to meet your changing business requirements. To learn more about how IBM Tivoli storage management solutions can help you address data management concerns in your environment, contact your IBM sales representative or IBM Business Partner, or visit ibm.com/tivoli/solutions/storage.

About Tivoli software from IBM

Tivoli software offers a service management platform for organizations to deliver quality service by providing visibility, control and automation—visibility to see and understand the workings of their business; control to effectively manage their business, help minimize risk and protect their brand; and automation to help optimize their business, reduce the cost of operations and deliver new services more rapidly. Unlike IT-centric service management, Tivoli software delivers a common foundation for managing, integrating and aligning both business and technology requirements. Tivoli software is designed to quickly address an organization's most pressing service management needs and help proactively respond to changing business demands. The Tivoli portfolio is backed by world-class IBM Services, IBM Support and an active ecosystem of IBM Business Partners. Tivoli clients and Business Partners can also leverage each other's best practices by participating in independently run IBM Tivoli User Groups around the world—visit www.tivoli-ug.org



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