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Product Datasheet

Tivoli Software IBM Tivoli Storage Manager

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IBM Tivoli Storage Manager

Highlights

- **Centralized data backups and restores**
- **Managed data archiving and retrieval**
- **Virtually 24x7 online data protection for business-critical applications**
- **Rapid, comprehensive recovery from IBM® AIX® server failures**
- **Hierarchical Storage Management (HSM) and storage area network (SAN) extensions**
- **Key attributes:**
 - **Centralized, comprehensive management**
 - **Broad hardware support**
 - **Intelligent data movement**
 - **Intelligent data storage**
 - **Policy-based automation**

IBM Tivoli® Storage Manager can help protect your organization's data from hardware failures and other errors by storing backup and archive copies of data on offline storage. Scalable to protect thousands of computers running more than a dozen different operating systems, its intelligent data move and store techniques and policy-based automation work together to help increase data protection and potentially decrease time and administration costs.

Centralized data backups and restores

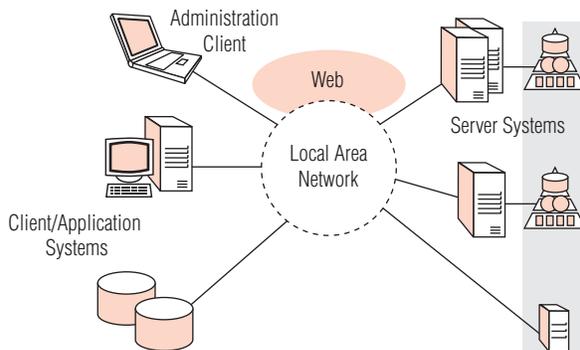
Data backups store a copy of your active online data on offline storage. If an online storage device fails, a data error occurs or someone accidentally deletes a file, the offline copy of that data can be restored quickly to online storage. Tivoli Storage Manager uses multiple techniques to make data backups and restores fast and flexible while helping reduce the impact of data protection on computers, networks and storage.

Managed data archiving and retrieval

Data archives are copies of active or inactive data from online storage that are stored offline for a specified amount of time. Especially useful for regulatory or bookkeeping purposes, archives provide point-in-time copies of important data. Managed data archives implemented by Tivoli Storage Manager are managed for a defined lifetime through the policy-based automation engine. The Tivoli Storage Manager client can quickly and easily retrieve the archived data, giving you a secure, easy way to store important data for long periods.

Virtually 24x7 online data protection for business-critical applications

Some business-critical application programs must remain operational continuously. Many of these around-the-clock applications have built-in capabilities that control external data protection applications and allow data backups and restores to occur while the application continues operating. Tivoli Storage Manager offers separate



Powerful data protection with ease of administration

add-on software modules to interface with these applications, including:

- *IBM Tivoli Storage Manager for Application Servers*
- *IBM Tivoli Storage Manager for Databases*
- *IBM Tivoli Storage Manager for Enterprise Resource Planning*
- *IBM Tivoli Storage Manager for Hardware*
- *IBM Tivoli Storage Manager for Mail*
- *IBM Tivoli Storage Manager for System Backup and Recovery*

Rapid, comprehensive recovery from AIX server failures

New to Tivoli Storage Manager Release 5.2 is Tivoli Storage Manager for System Backup and Recovery. When used with the Tivoli Storage Manager Disaster Recovery Manager function, Tivoli Storage Manager for System Backup and Recovery provides users with a comprehensive disaster recovery solution. In the event of an AIX server failure, Tivoli Storage Manager for System Backup and

Recovery enables AIX customers to fully or partially restore their operating system, applications or user data with little disruption.

HSM and SAN extensions

The following software extensions to Tivoli Storage Manager are also available:

- *IBM Tivoli Storage Manager for Space Management – Helps optimize usage of online storage and can automatically migrate infrequently or unused data files to less expensive offline storage and still make those files appear to be online for easy retrieval.*
- *IBM Tivoli Storage Manager for Storage Area Networks – Increases data transfer bandwidth and lessens the impact on the local area network (LAN). Computers connected to a SAN can take advantage of Tivoli Storage Manager to move backup and archive data over the SAN instead of the LAN.*

Key attributes

Many attributes of Tivoli Storage Manager make it efficient, scalable and automatic.

Centralized, comprehensive management

A client/server application, Tivoli Storage Manager allows one server to handle hundreds or even thousands of clients. The administration control of Tivoli Storage Manager is extremely flexible and allows management by a hierarchy of administrators, each designated with different management authority levels.

- *Multiple administrators can manage Tivoli Storage Manager simultaneously.*
- *Multiple servers can be controlled from a server or through a Web interface from a computer on the network.*
- *Data restore requests can be initiated and controlled from the Tivoli Storage Manager client, helping reduce administrator workload.*

- *Flexible client backup and administrator command schedules can automate many procedures.*

The flexibility of Tivoli Storage Manager can simplify data protection tasks for IT administrators.

Broad hardware support

Tivoli Storage Manager software supports a wide range of hardware:

Platforms — More than a dozen different operating systems are supported as data protection clients. Eight different operating systems are supported as data protection systems. Platforms vary from laptops to mainframes, and a server can work with a client — cross-platform.

Networks — Many different types of networks can connect data protection clients to their servers and connect both to their storage. Remote and mobile users can use dialup lines, the Internet and wide area networks (WANs) just as transparently as local users can use LANs or SANs for data movement.

Offline storage devices — Tivoli Storage Manager Extended Edition supports hundreds of magnetic disk, optical and tape storage devices from more than a dozen vendors. Tape libraries with more than three tape drives and 40 slots are supported.

Intelligent data movement

Tivoli Storage Manager uses various techniques that can significantly reduce data transfer sizes and total time required for data backups and restores.

Disk-to-disk data movements — Tivoli Storage Manager was designed around the concept of offline “storage pools” that use disk storage in addition to optical and tape storage devices. Tivoli Storage Manager’s flexible storage hierarchy allows backup directly to disk or to tape and migration from one type of media to another. Disk-to-disk data transfers can save considerable time for each individual client, reducing backup windows across an organization. After an administrator-specified threshold is reached, the data in the disk storage

pool automatically migrates to other less-expensive offline storage devices such as optical disk or tape. Because many requests for data restores happen within a few hours or days of a backup, the disk storage pool also provides rapid disk-to-disk data restores.

Multiple parallel session data backups and restores — Multiple sessions from a single client expedite the backup of data. Likewise, restores to a single client are speeded by using multiple streams of data from various tapes.

Progressive backups — Tivoli Storage Manager limits the bandwidth needed for backups and restores with its progressive incremental backup, which can decrease the amount of data that travels over the network by copying only files that are new or have changed since the last backup. This can help avoid the high-bandwidth use of weekly full backups and daily incremental backups. When a data restore is required, Tivoli Storage Manager transfers only the necessary version

of the files, rather than the full backup and associated incrementals. This reduces the data movement load on networks and servers.

Adaptive subfile differencing —

Through adaptive subfile differencing, remote and mobile users with limited-bandwidth connections to a Tivoli Storage Manager server over a dialup phone line, the Internet or WANs can make regular backups quickly and transparently. This technique takes progressive backups a step further by calculating an efficient level of backup — file, block or byte. It then transfers the individual files, blocks or bytes of data that changed since the last backup, making the transfer over the network as efficient as possible.

Checkpoint restart — It can frustrate remote and mobile workers to lose a network connection and have to start a data transfer over again. Tivoli Storage Manager recalls the point at which the data movement was disconnected, allowing the backup or data restore to continue from the point of interruption.

Data encryption — If data security over a network connection between a client and a Tivoli Storage Manager server is a concern, Tivoli Storage Manager can encrypt the data.

Cyclical redundancy check — To further protect data integrity, Tivoli Storage Manager can perform an optional automatic cyclical redundancy check on data movements.

Nondisruptive online image backup and restore — For data protection instances where speed is more important than network bandwidth or individual file restore, Tivoli Storage Manager incorporates comprehensive image backups and restores that can transfer entire disk volume images. For LAN- or SAN-connected clients with plenty of bandwidth to the Tivoli Storage Manager server and disk storage pool, this process can be a fast method of data protection.

Intelligent data storage

Relational database — An integrated relational database is at the heart of the Tivoli Storage Manager server. Borrowing the methods of “systems

managed storage” from IBM mainframes, Tivoli Storage Manager performs lifetime management for data that has been backed up or archived. Down to the file level, this data is cataloged, assigned expiration and migration attributes and linked to the original data files it came from, as well as its predecessors and siblings on offline storage. The power of the Tivoli Storage Manager relational database becomes apparent with its intelligent data movement, intelligent data storage and flexible policy-based automation.

Collocation — The relational database can keep the data of a client or file system grouped in logical sets on individual tapes to help improve the performance of restores by reducing the number of tape mounts and positionings that occur.

Tape reclamation — The relational database can automatically delete expired files on tapes and consolidate the remaining unexpired files to other tape volumes. The resulting empty tapes can be reused for new data, potentially offering substantial annual savings on tape media.

Policy-based automation

Powered by the relational database inside Tivoli Storage Manager, the granular policy engine can automate capabilities down to the individual file level. Policies can be set as simple defaults or highly tuned and customized to help keep costs low, while still meeting specific service-level agreements. The end result is a “set it and forget it” experience. Once configured, Tivoli Storage Manager can manage data protection for thousands of computers with little administrator assistance.

Benefits

The attributes of Tivoli Storage Manager combine with the broad data protection provided in a single integrated application — backup/restore, archive/retrieve, HSM, SAN operation and business-critical application protection. It can help reduce the:

- *Amount of offline storage space required for a given amount of data*
- *Network bandwidth required for data movements*
- *Impact of data movements on the LAN*
- *Time required for data movements*
- *CPU impact on application servers*
- *IT manpower resources required to protect virtually any given amount of data*
- *Optional HSM and SAN extensions*
- *Small and large tape library management*
- *Tape library sharing between multiple data protection servers*
- *Expanded administration to handle thousands of client computers*

Tivoli Storage Manager family of products

Tivoli Storage Manager is available in two packages and provides the following functionality:

Tivoli Storage Manager

- *Data backup and restore*
- *Managed data archiving and retrieval*
- *Optional 24x7 critical-application protection modules*
- *Optional HSM and SAN extensions*
- *Small tape library management*

Tivoli Storage Manager Extended Edition

- *Data backup and restore*
- *Managed data archiving and retrieval*
- *Disaster-preparation planning and recovery*
- *NDMP backups of network-attached storage appliances*
- *Optional 24x7 critical-application protection modules*

Tivoli software from IBM

An integral part of the comprehensive IBM e-business infrastructure solution, Tivoli technology management software helps traditional enterprises, emerging e-businesses and Internet businesses worldwide maximize their existing and future technology investments. Backed by world-class IBM services, support and research, Tivoli software provides a seamlessly integrated and flexible e-business infrastructure management solution that uses robust security to connect employees, business partners and customers.

To learn more

For information about IBM Tivoli Storage Manager and integrated solutions from IBM, contact your IBM sales representative or visit ibm.com/tivoli/solutions/storage

IBM Tivoli Storage Manager at a glance



Tivoli Storage Manager, Version 5.2 servers

- IBM AIX 5.1 or 5.2
- Hewlett-Packard HP-UX 11.0 or 11.11
- Microsoft® Windows® 2000 Server, Windows 2000 Professional, Windows 2000 DataCenter, Windows 2000 Advanced Server, Windows Server 2003 (within 90 days of Windows 2003 Product Release)
- Linux®/x86 (2.4 kernel): Red Hat Advanced Server 2.1, SuSE SLES 7 or 8
- Linux zSeries (2.4 kernel): SuSE SLES 8
- Linux pSeries (2.4 kernel): SuSE SLES 8
- Sun™ Solaris™ 8 or 9 (64-bit)
- IBM OS/400® PASE, Version 5, Release 1 or 2
- IBM OS/390® with IBM z/OS™, Version 1, Release 1 or later, or Version 2, Release 10 or later

Tivoli Storage Manager, Version 5.2 clients

- AIX 5L for POWER, Version 5.1 or 5.2
- HP-UX 11.0 or 11.11
- Linux/x86 (2.4 kernel): Red Hat 7.2, 7.3, 8, AS 2.1; SuSE 7.3, 8.0, 8.1, SLES 7, 8; TurboLinux 7.5, 8
- Linux/390 (2.4 kernel), SuSE SLES 7, 8
- Linux pSeries (2.4 kernel), SuSE 8
- Macintosh X(10).1.5 or later
- Novell NetWare 5.1 or 6
- IBM S/390®, Version 2, Release 10 with SMP/E; z/OS, Version 1, Release 1, 2, 3, 4
- OS/400 5.1 or 5.2 API client
- SGI IRIX UNIX®, Release 6.5 with EFS or XFS File Systems
- Sun Solaris 7, 8 or 9
- Tru64 UNIX, Version 5.1A
- Windows XP; Windows 2000 Professional, Server, Advanced Server and DataCenter; Windows Server 2003 (within 90 days of Windows 2003 Product Release); Windows NT® 4.0, Service Pack 5, Service Pack 6a

Tivoli Storage Manager, Version 5.1 clients can be used with Version 5.2 servers

- AIX 4.3.3
- Macintosh 9
- Sun Solaris 2.6
- Windows Me

The Version 5.1 clients can be downloaded from the Tivoli Storage Manager Web page at: www-3.ibm.com/software/sysmgmt/products/support/IBMTivoliStorageManager.html

For updates to Tivoli Storage Manager and complementary solutions hardware and software requirements visit ibm.com/tivoli/solutions/storage

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04-03
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