IBM

IBM System Storage Product Guide

The future of your business is already here

IBM System Storage™ solutions are built with the success of your business in mind. End-to-end storage ingenuity and unmatched expertise from IBM help you reduce costs, risks and complexity while improving efficiencies and the responsiveness of your infrastructure and people.

Go green for the planet—and your bottom line

Saving energy means saving money. Get a green "thumbs up" when you implement IBM System Storage solutions to drive down runaway costs in power, cooling and space. Regardless of the size of your business, IBM offers energy-efficient strategies and savings for a sustainable enterprise.

Power up your savings by powering down storage inefficiencies

- Prepackaged storage kits and advanced systems virtualization from IBM facilitate easier ways for you to reduce costs, lower energy consumption and dramatically improve storage utilization—without affecting performance.

- Automated tiered storage management and exceptional data mobility let you better match applications and investments to the value of stored data—saving both time and money.

Easy come, easy grow with a nimble, responsive IT infrastructure

Being responsive to changing business needs is often easier said than done. IBM System Storage helps you unlock business resiliency and stay ahead of everyday challenges, with easy-to-use, affordable storage offerings that flexibly manage growth, complexity and risk.

Effectively manage your data with the strength and simplicity of IBM System Storage

- Simplified storage platforms from IBM use graphical interfaces and integrated systems to effortlessly manage both physical and virtual resources across a heterogeneous environment—for easier management of your growing business.

- IBM System Storage platforms allow you to dynamically and reliably scale storage with pervasive infrastructure flexibility to keep you in control of data growth and costs.

- Protecting data is vital to operating efficiently under normal business conditions—and rapidly recovering during emergencies. System Storage helps you reduce risk with rock-solid data protection tools and high availability across the enterprise, especially when you need it most.

Broaden your business horizons with innovation that matters

Imagine breakthrough innovations that allow you to run your organization not only faster, but better, helping to attract new customers and gain competitive advantages. System Storage solutions help you stay consistently out front so that you can make strategic decisions on how to use advancements in technology to broaden your business and gain a better return on investment.

Transform your business through innovation that matters

- Delineated along a clear technical roadmap to help ensure smooth upgrades and transitions, IBM storage platforms are designed to meet even the most stringent data storage requirements, regardless of changes in future technology.

- The long-term binary compatibilities of System Storage platforms foster longevity of the equipment, applications and skills that support your organization, even as new systems are introduced.

IBM System Storage DR550/Disk Storage Virtualization

	DR550	DR550
Product	IBM System Storage DR550	IBM System Storage DR550
Machine/model	2233 DR1	2233 DR2
Platform support	All IBM systems platforms and other vendor platforms	All IBM systems platforms and other vendor platforms
Host connectivity	2 port Gigabit Copper or Fibre Ethernet (upgrades available)	2 port Gigabit Copper or Fibre Ethernet (upgrades available)
Software	IBM System Storage Archive Manager (SSAM)	IBM System Storage Archive Manager (SSAM)
Archiving application interface	SSAM application programming interface (API) v5.5.0 or DR550 File System Gateway	SSAM application programming interface (API) v5.5.0 or DR550 File System Gateway
Controller	Single System p5™ POWER5+™	Single or Dual active/passive System p5 POWER5+
Operating system	IBM AIX, Version 5.3	IBM AIX, Version 5.3 Dual server includes IBM HACMP 5.3
Management interface	IBM Director 5.20.2	IBM Director 5.20.2
Systems supported	External Tape and Optical	External Tape and Optical
Backup sw	Included in SSAM	Included in SSAM
Backup hw	External tape	External tape
Copy services	NA	Metro or Global mirroring
Encryption	Disk or tape, 128-bit AES or 56-bit DES encryption technology	Disk or tape, 128-bit AES or 56-bit DES encryption technology
RAID support	5	5
Capacity (min, max)	880 GB, 37 TB	6 TB, 168 TB
Drive support	750 GB SATA	750 GB SATA

DR550 Highlights

- An award-winning and industry-proven information archiving and retention offering with built-in lifecycle management capabilities to help organizations meet the growing challenges of efficiently managing, protecting and retaining data.
- Repository for all kinds of content (e-mail, database, documents, images, files, etc.)
- Provide non-erasable, non-rewritable archival storage; prevents deletion or alteration of data stored on the system
- Support multiple storage tiers for long-term archiving (disk, tape and optical) helping lower TCO
- Provide the facilities to migrate archive data from aging disk or tape subsystems to new ones
- Offer automatic provisioning, migration, expiration and archiving capabilities
- Offer scalability up to 168 TB raw physical capacity and supports petabytes of storage with attached tape and optical
- Offer chronological and event-based data retention
- Offer high-availability option to avoid single points of failure
- Provide security and protection through data encryption and data shredding options
- Support and integrate with broad set of IBM and non-IBM content management applications
- Protect customer data against disasters through Synchronous or Asynchronous Replication
- Award-winning: Data Protection Summit—Information Lifecycle Management (ILM)—Best of Show, 2007 and AIIM (The Enterprise Content Management Association)—Best in Show, 2005, 2006

Disk Storage Virtualization

Create a tiered storage environment and help increase the flexibility and efficiency of your storage infrastructure by introducing solutions based on IBM System Storage virtualization software.

Product	Function and Value	Highlights
IBM System Storage SAN Volume Controller (SVC)	Based on virtualization technology, the IBM System Storage SAN Volume Controller is designed to increase the efficiency and flexibility of your storage infrastructure by pooling storage and centralizing management, and enabling changes to the physical storage while avoiding disruption to applications.	• **Manage storage volumes from a central point:** SVC is designed to enhance the flexibility of your storage environment. It can combine the storage capacity from multiple disk systems from different suppliers into a single pool of storage that can be managed from a central point. In this way, fewer skills are required and storage administrators can become more productive. • **Virtually eliminate downtime related to storage:** SVC enables data migrations, maintenance and upgrades to the SVC system itself, and changes to the physical storage without impacting host applications. • **Improve storage resource utilization:** By combining the storage capacity from multiple disk systems into a single pool, SVC uses existing storage capacity more efficiently, which can allow you to defer additional storage purchases to save costs. • **A single, cost-effective set of advanced copy services:** SVC can apply copy services across all the managed storage, regardless of the disk system supplier. This capability helps simplify the environment, can reduce the costs of implementing disaster recovery solutions, increases flexibility in using storage and increases personnel productivity. • **Create a tiered storage environment:** Using virtualization technology, SVC enables customers to match the cost of the storage to the value of their data. For example, mission-critical data can be stored on high-performance, highly available Fibre Channel disks while non-mission-critical data can be stored on Serial ATA disks. Data can easily be moved from one tier to another without application disruption.

IBM TotalStorage Expert Family

Adds value to the storage subsystem solution by providing information for better management.

Product	Function and Value
IBM TotalStorage ETL Expert	Provides a high-performance monitoring tool to help simplify the management of IBM tape subsystems that include the IBM TotalStorage Enterprise Tape Library, Virtual Tape Server and Peer-to-Peer Virtual Tape Server
IBM TotalStorage XRC Performance Monitor	Provides the ability to monitor and evaluate the performance of a running XRC configuration; the monitor function provides information at the real-time, historic and summary levels

DFSMS™ Family

Provides automated and central storage management in the z/OS environment

Product	Function and Value
DFSMSdfp™	Provides data access, program and device management functions that furnish effective management of active data
DFSMSdss™	Provides data movement, copy, backup and space management functions
DFSMShsm™	Provides backup, recovery, migration and space management functions that furnish effective management of inactive data
DFSMSrmm™	Provides a policy-driven solution for the management of removable media, such as tape cartridges and reels
DFSORT™	Provides a solution for faster and easier data sorting, reporting and analysis
DFSMStvs	Enables batch jobs and IBM CICS® (Customer Information Control Systems) online transactions to update shared VSAM data sets concurrently

IBM Tivoli Storage Manager

Function and Value	Highlights
IBM Tivoli Storage Manager is designed to protect your 24x7 applications and key data in the event of hardware, software or network failures. It offers move-and-store techniques and policy-based automation, which are designed to work together to help increase data and application protection, decrease disaster recovery time and reduce storage administration costs. It manages inactive data, helping you match the value of the data to the most cost-effective storage management practices. Tivoli Storage Manager is designed to scale easily to protect hundreds of computers running a dozen operating systems ranging from laptops to mainframes and connected together via the Internet, WANs, LANs or SANs. Tivoli Storage Manager also offers open, easy-to-use APIs designed to enable ISVs to more easily adapt their solutions to IBM software, allowing customers to customize, better secure and extend the functionality of their storage environment.	• Designed to protect valuable data in the most cost-effective manner • Designed to archive inactive data to help reduce costs • Designed to help ensure continuity and recovery

IBM Tivoli Storage Manager Extended Edition

IBM Tivoli Storage Manager Extended Edition expands on Tivoli Storage Manager backup, restore and archive abilities. It helps expedite disaster recovery with detailed planning and automated scripts. Disaster recovery reporting functionality can track where offsite copies of data are stored.

IBM Tivoli Storage Manager Express

Tivoli Storage Manager Express uses proven Tivoli Storage Manager technology to back up and recover vital data. It is easily installed, competitively priced, and designed to deliver reliable, robust backup and recovery services that integrate as you grow.

IBM Tivoli Storage Manager for Advanced Copy Services / IBM Tivoli Storage Manager for Copy Services

IBM Tivoli Storage Manager for Advanced Copy Services and IBM Tivoli Storage Manager for Copy Services help protect mission-critical data that requires 24x7 availability. They offer ready-to-use, product-based solutions designed to implement high-efficiency backup and restore processes and helps eliminate backup-related performance issues. TSM for Copy Services provides the integration with Microsoft Volume Shadow Copy Service (VSS) and VSS providers for snapshots. TSM for Advanced Copy Services provides the integration with IBM FlashCopy as supported by IBM System Storage SAN Volume Controller (SVC), IBM System Storage DS6000, IBM System Storage DS8000, and other snapshot mechanisms.

IBM Tivoli Storage Manager for Enterprise Resource Planning

IBM Tivoli Storage Manager for Enterprise Resource Planning protects your vital SAP system data. Now you can improve the availability of your SAP database servers and reduce your administration workload with automated data protection designed for mySAP environments.

IBM Tivoli Storage Manager for Mail

IBM Tivoli Storage Manager for Mail protects data on e-mail servers running Lotus® Domino® or Microsoft Exchange. This software module for Tivoli Storage Manager automates data protection, enables "hot" backups without shutting down the server and improves data restore performance.

IBM Tivoli Storage Manager for Microsoft SharePoint

IBM Tivoli Storage Manager for Microsoft SharePoint is a policy-based backup and recovery solution. Quickly and confidently restore your Microsoft SharePoint business data and content after almost any kind of business interruption.

IBM Tivoli Storage Manager for Space Management

IBM Tivoli Storage Manager for Space Management moves inactive data to reclaim online disk space for important active data. It frees administrators and users from manual file system pruning tasks, and can allow you to defer the need to purchase additional disk storage.

IBM Tivoli Storage Manager for Storage Area Networks

IBM Tivoli Storage Manager for Storage Area Networks works with servers and client computers to make data transfers over SAN. It allows SAN-connected Storage Manager servers and Storage Manager client computers to make maximum use of their direct network connection to storage.

Tivoli Storage Manager for System Backup and Recovery

IBM Tivoli Storage Manager for System Backup and Recovery delivers a flexible backup method for your AIX systems. It offers a comprehensive system backup, restore, and reinstallation tool and can be executed from either the AIX command line or by using the SMIT menu interface.

IBM Tivoli Continuous Data Protection for Files

IBM Tivoli Continuous Data Protection for Files backs up your most important files the moment they are saved. It provides a real-time, continuous data protection solution for desktop and laptop computers, effortlessly and transparently, without administrative intervention.

Cristie Bare Machine Restore

Cristie Bare Machine Recovery (CBMR) integrates with IBM Tivoli Storage Manager to provide a Bare Machine Recovery (BMR) solution for Windows, Linux, SUN Solaris and HP-UX. CBMR combined with Tivoli Storage Manager functionality allows customers to recover a Windows 2000, XP or 2003 operating system to a new disk drive, RAID array or a completely new machine using only a CD and a disaster recovery backup stored in the Tivoli Storage Manager server. This functionality is also supported for Linux, SUN Solaris and HP-UX operating systems.

FilesX Xpress Restore CDP

Next-generation data protection and recovery solutions from FilesX, an IBM company, provide the power to quickly recover any amount of Microsoft Windows server data, anywhere in the organization, from any previous point-in-time, no matter what happens to cause a loss of data. These solutions are an excellent complement to IBM Tivoli Storage Manager offerings, providing additional protection and recovery capabilities for Microsoft Windows servers in the data center and in remote/branch offices.

IBM TotalStorage Productivity Center

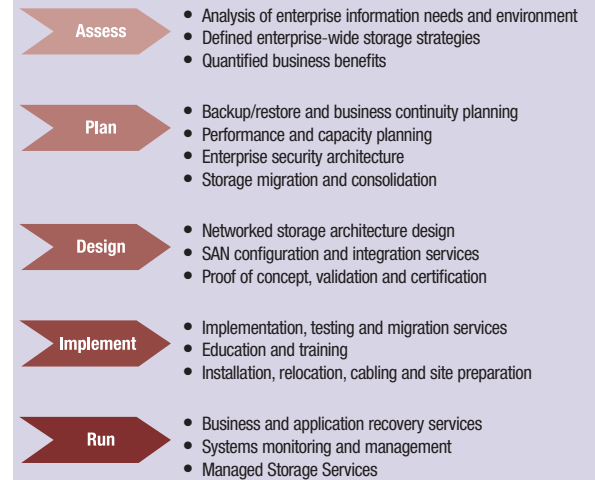| Product	Function and Value	Highlights
IBM TotalStorage Productivity Center Basic Edition	IBM TotalStorage Productivity Center Basic Edition is designed to provide basic storage resource management through a centralized location. It extends existing management of a single storage system and provides capabilities such as storage reporting, monitoring, policy-based management and storage provisioning.	• Inexpensive entry point for IT managers requiring basic asset and capacity reporting. • Designed to provide storage management via the SNIA Storage Management Interface Specification (SMI-S), which includes the IBM System Storage DS family, IBM System Storage SAN Volume Controller (SVC) and other vendor storage devices that have implemented support for the SMI-S standards.
IBM TotalStorage Productivity Center for Disk	In a pooled or virtualized SAN environment, multiple devices work together to create a storage solution. IBM TotalStorage Productivity Center for Disk is designed to provide integrated administration, performance analytics, capacity utilization, storage optimization, green tools and replication features for these environments.	• Designed to help reduce the complexity and cost of storage management while improving data availability • Offers centralized, open standards–based management of storage devices • Designed to help enhance storage administrator productivity • Offers proactive management of storage devices
IBM TotalStorage Productivity Center for Data	IBM TotalStorage Productivity Center for Data is a Storage Resource Management (SRM) tool for storage environments that provides a set of policy-driven, automated tools for managing storage capacity, availability, events, performance and assets, including DAS, NAS and SAN technologies.	• Designed to help leverage and optimize existing storage resources and perform storage management with a high level of control • Designed to help maximize storage utilization • Designed to help you manage more storage with the same staff
IBM TotalStorage Productivity Center for Fabric	IBM TotalStorage Productivity Center for Fabric is designed to help automate the management of heterogeneous storage networks and works with a broad range of devices so businesses can leverage and better use existing technology investments. It is designed to provide comprehensive management of physical and logical configurations for multi-vendor SANs with automatic resource discovery, event monitoring and alerting, zone control and SAN error-prediction capabilities.	• Designed to help predict storage network failures before they happen, enabling preventative maintenance • Designed to help accelerate problem isolation when failures occur • Designed to create a single point of control, administration and security for the management of heterogeneous storage networks

IBM TotalStorage Productivity Center

IBM TotalStorage Productivity Center for Replication	TotalStorage Productivity Center for Replication is designed to simplify and automate the configuration of your replication environment allowing for more effective Metro Mirror, Global Mirror and IBM FlashCopy management. It is also designed to monitor and automate copy operations across devices to support a replication environment. TotalStorage Productivity Center for Replication is available in both Two-Site and Three-Site Business Continuity options and provides disaster recovery management through planned and unplanned failover and failback automation for the IBM ESS Model 800, IBM DS6000, IBM DS8000 and the IBM System Storage SAN Volume Controller.	• Automates the configuration of your IBM DS8000, DS6000™ and ESS Model 800 and the IBM SAN Volume Controller advanced copy services features • Monitors and manages the replication operations to ensure successful completion from your source volumes to your disaster recovery volumes • Allows you to monitor the progress of the copy services so you can verify the amount of replication that has been done as well as the amount of time needed to complete the replication • Designed to provide automated failover to keep your critical data online and available to your users even if your primary site fails. When the primary site comes back on, the software manages failback to the default configuration as well.
IBM TotalStorage Productivity Center Standard Edition	Combines the best of Disk, Data and Fabric products together as one orderable product.	• Having Disk, Data and Fabric allows higher levels of value—i.e., combined SAN and disk performance reports or automated workflows to do provisioning (under the control of Tivoli Provisioning Manager)

IBM Global Services for System Storage and Storage Networking

Data Storage Services from IBM can help you achieve business objectives by creating cost-effective data storage solutions that address the requirements of key business applications. These solutions can support multiple platforms and product vendors, helping to provide enhanced protection for critical business data, increased asset utilization, availability and reliability levels with reduced management costs.

IBM Global Services, as the leading data storage services provider, brings best practices from its thousands of customer engagements to work with your employees to integrate new solutions and technology with your business and IT needs. IBM offers a comprehensive portfolio of data storage services including:

Assess
• Analysis of enterprise information needs and environment
• Defined enterprise-wide storage strategies
• Quantified business benefits

Plan
• Backup/restore and business continuity planning
• Performance and capacity planning
• Enterprise security architecture
• Storage migration and consolidation

Design
• Networked storage architecture design
• SAN configuration and integration services
• Proof of concept, validation and certification

Implement
• Implementation, testing and migration services
• Education and training
• Installation, relocation, cabling and site preparation

Run
• Business and application recovery services
• Systems monitoring and management
• Managed Storage Services

IBM Global Services has a track record in offering services for open and mainframe storage, data migration, installation and support services for IBM and non-IBM environments. Some examples are:
• IBM Storage Strategy Assessment assists with the vision and strategy, assessment, architecture and conceptual designs to help customers optimize their storage infrastructure to new architectures.
• IBM Planning Services for 3494 Automated Tape Library and Virtual Tape Server can help improve tape storage management and gain control of an often expanding library of tapes.
• IBM Operational Support Services for Tivoli Storage Manager assists customers in the planning and implementation of storage management software.
• IBM Managed Storage Services offer scalable, cost-effective storage capacity, management and backup/restore services on a usage basis.

More information about IBM storage services can be found at **ibm.com**/services/storage.

IBM Global Financing

IBM Global Financing offers competitive financing to credit-qualified customers and IBM Business Partners to assist them in acquiring IT solutions. Our offerings include financing for IT acquisition—including hardware, software and services, from IBM and other manufacturers or vendors—as well as commercial financing (revolving lines of credit, term loans, acquisition facilities and inventory-financing credit lines) for IBM Business Partners. Offerings (for all customer segments: small, medium and large enterprise), rates, terms and availability may vary by country. Contact your local IBM Global Financing organization or visit the Web at **ibm.com**/financing.

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MB, GB and TB equal 1,000,000, 1,000,000,000 and 1,000,000,000,000 bytes, respectively, where referring to storage capacity. Actual storage capacity will vary based upon many factors and may be less than stated. Some numbers given for storage capacities give capacity in native mode followed by capacity using data compression technology.

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