IBM Systems and Technology Group

IBM System Storage Product Guide

IBM

Why IBM Information Infrastructure

IBM Information Infrastructure helps organizations manage the incredible explosion in the amount and types of digital information, even during difficult economic times. IBM Information Infrastructure can help clients lower storage acquisition costs dramatically while improving data resiliency and security. Today, IBM offers proven capabilities in core technologies such as deduplication, virtualization, encryption, and solid-state storage. New solutions are available for larger organizations using mainframes, as well as for midsize organizations. New Smart Business Systems simplify deployment of private cloud solutions for archiving and network file services.

IBM Information Infrastructure can do much more than help reduce costs. IBM Information Infrastructure is also an important enabler of information-led transformation, which is key to growth for many organizations. Information-led transformation is a process through which organizations turn information into a strategic driver for innovation, business optimization, and competitive differentiation. Information-led transformation can help clients use information more pervasively across the organization, leverage analytics to take a predictive view of the business, make real-time decisions, and discover new kinds of intelligence from the information at hand.

As organizations build new information-driven or information-based products and services, throughput and availability requirements will increase dramatically. IBM enables information-led transformation with innovative technology that breaks through traditional performance barriers, and with best practice-based services to help clients manage the transition. An example is smart use of solid-state storage, where IBM storage arrays and virtualization controllers with a small amount of solid-state disk can deliver drastic improvements in throughput.

IBM Core Technologies to Drive Your Information Infrastructure

IBM solutions are optimized for the unique needs of midsize organizations, large enterprises, cloud computing providers, and others. Clients can get just what they need, saving time and money. A key benefit of selecting IBM for your next information infrastructure project is access to a broad portfolio of outstanding products and services. IBM offers highly rated, patented technology that delivers unique value.

Some IBM differentiating capabilities include:

- Storage virtualization—Reduce storage area network (SAN) disk costs by significantly increasing utilization.
- Data deduplication—Lower storage acquisition costs dramatically while reducing energy, cooling, floor space, management requirements, and maintenance costs.
- Solid-state storage architectures—Improve drive access response time without application tuning.
- Next-generation scalable storage—Achieve Tier 1 functionality at Tier 2 costs.
- Mainframe storage—Increase transaction throughput substantially with IBM's mainframe-optimized tiered storage, featuring industry-leading drive-level encryption.
- Self-encrypting storage and security management—Encryption at the drive level improves security with little or no performance impact.
- Information archiving—Optimize application performance and simplify application administration, while lowering total costs.
- Business intelligence platform integration—Correlate disparate information faster across the value chain.
- Continuous data protection—Get applications and users up and running within minutes following a data loss.
- Storage infrastructure management—Improve storage utilization and simplify administration.

No other major vendor can match IBM's breadth of information infrastructure capabilities. IBM offers integrated solutions for consolidation, data protection, storage management simplification, compliance support, and more. IBM technology includes SAN and network attached storage (NAS) disk systems, tape systems, SAN switches, storage management software, services, self-encrypting storage with key management, non-erasable, nonrewriteable storage for regulatory compliance, and flexible financing for large and midsize organizations.

Learn more about IBM Information Infrastructure, including the full range of data storage solutions and companion software and services offerings, at: **ibm.com**/information_infrastructure.

What's New?

IBM has invested billions of dollars to enhance System Storage® products and services to better meet the information infrastructure needs of businesses like yours. This Product Guide features several new products:

- IBM System Storage TS7680 ProtecTIER® Deduplication Gateway for System z®
- IBM System Storage N6060 series
- IBM Self-encrypting Storage and Key Management Solution (Tivoli® Key Lifecycle Manager + LTO® bundle)
- IBM Virtual Tape for Mainframe (VTFM)
- IBM System Storage DS5020
- IBM System Storage DS3950
- IBM System Storage LTO 5 Tape Drives and Libraries

The following products featured in this guide have been significantly enhanced:

- IBM XIV® Storage System
- IBM System Storage TS7650 ProtecTIER Deduplication solutions for Open Systems
- IBM System Storage DS8000® Disk System
- IBM System Storage DS3000 Express
- IBM Comprehensive Data Protection Solution (IBM Tivoli Storage Manager FastBack bundle)
- IBM System Storage DS5100/DS5300
- IBM System Storage SAN Volume Controller, now with tightly integrated support for solid-state devices (SSDs), numerous replication enhancements, iSCSI server support and dramatic performance improvements

Entry SAN switches for easy-to-use SMB solutions

IBM System Storage SAN24B-4 Express (2498-B24, 249824E)	• Provides high-performance, scalable and simple-to-use fabric switching with 8, 16 or 24 ports operating at 8, 4, 2 or 1 Gigabits per second (depending on which optical transceiver is used) for servers running Microsoft® Windows®, IBM AIX®, UNIX®, and Linux® operating systems, server clustering, infrastructure simplification and business continuity solutions. The SAN24B-4 Express includes EZSwitchSetup wizard, which is an embedded setup tool designed to guide novice users through switch setup, often in less than five minutes.
Cisco MDS 9124 Express for IBM System Storage (2053-424, 241724C)	• Provides high-performance, scalable and simple-to-use fabric switching with 8, 16 or 24 ports operating at 1, 2 and 4 Gbps for servers running Microsoft Windows, UNIX, Linux, Novell NetWare and IBM OS/400® operating systems, server clustering, infrastructure simplification and business continuity solutions. The switch includes replaceable power supply, Virtual SAN, Cisco Fabric Manager and redundant power supply feature designed to simplify setup and ongoing maintenance for Cisco MDS 9000 users.

Midrange SAN switches for scalable SMB and enterprise solutions

IBM System Storage (SAN40B-4 2498-B40, 249840E)	• Provides high-performance, scalable and simple-to-use fabric switching with 24, 32 or 40 ports operating at 8, 4, 2 or 1 Gigabits per second (depending on which optical transceiver is used) for servers running Microsoft Windows, AIX, UNIX, Linux, OS/400 and z/OS® operating systems. Many advanced functions are available to facilitate operation in medium and large networks.
IBM System Storage SAN80B-4 (2498-B80)	• Provides high-performance, scalable and simple-to-use fabric switching with 48, 64 or 80 ports operating at 8, 4, 2 or 1 Gigabits per second (depending on which optical transceiver is used) for servers running Microsoft Windows, AIX, UNIX, Linux, OS/400 and z/OS operating systems. Many advanced functions are available to facilitate operation in medium and large networks.
Cisco MDS 9134 for IBM System Storage (2054-434, -S34)	• Designed to address the needs of medium-sized businesses and large enterprises. • Model 434 provides high-performance, scalable and simple-to-use fabric switching with 24 or 32 ports operating at 1, 2 and 4 Gbps for servers running Microsoft Windows, UNIX, Linux, NetWare, OS/400 and z/OS operating systems, server clustering, infrastructure simplification and business continuity solutions. • Model S34 provides stacked switch bundle with 48, 56 or 64 port switch fabric with two 10 Gbps Inter Switch Links (ISLs).

Enterprise SAN directors for high availability and scalability enterprise solutions

IBM TotalStorage® SAN256B (2109-M48)	• High-performance, high-density and high-availability SAN director designed to be the foundation for large enterprise-class infrastructure simplification and business continuity solutions. The SAN256B director provides from 16 to 384 ports and contains two control processors for high availability, supporting one to eight blades. Two different types of switch blades are available; one capable of supporting 4, 2 and 1 Gbps link speeds and the other type capable of supporting 8, 4 and 2 Gbps link speeds. Switch blades contain 16, 32 or 48 ports. Each port can support either Fibre Channel or IBM FICON® links. A Fibre Channel Routing blade is available to enable routing between heterogeneous SAN fabrics and distance extension between sites using FCIP. The optional FICON Accelerator feature is available on the Fibre Channel Routing Blade to support mainframe Global Mirror (formerly XRC) and remote tape applications over extended distances. A 10 Gbps FC switch blade is available to support high-speed Inter-Switch Links (ISLs), and an iSCSI blade is available to enable low-cost connectivity to servers via Ethernet. Standard features including Advanced Inter-Switch Link (ISL) Trunking, Web Tools, Advanced Zoning, Fabric Watch, Performance Monitoring and Fabric Access Layer (API).
IBM System Storage SAN384B (2499-192)	• Designed to be the premier platform for consolidation of your data center connectivity, providing high-performance and highly available data networking. Providing new levels of performance with industry-leading 8 Gbps Fibre Channel (FC) and 10 Gbps Fibre Channel over Converged Enhanced Ethernet (FCoCEE) technologies, it is also one of the first members of the IBM System Storage b-type SAN family designed to exploit Brocade's new Data Center Fabric architecture. As a member of the IBM System Storage family of b-type SAN products, the SAN384B is designed to participate in fabrics containing other b-type and m-type devices manufactured by Brocade. This versatile hardware can serve as a new top tier (or backbone) in a complex fabric and provide connections to other b-type and m-type directors, switches and routers.

Enterprise SAN directors for high availability and scalability enterprise solutions

IBM System Storage SAN768B (2499-384)	• Premier fabric backbone for data network consolidation in large enterprise data centers. Provides high performance and high availability data networking with new industry-leading 8 Gbps Fibre Channel (FC) and 10 Gbps Fibre Channel over Converged Enhanced Ethernet (FCoCEE) technologies. It is also the first member of the IBM System Storage b-type family designed to exploit Brocade's new Data Center Fabric architecture. The SAN768B introduces Inter-Chassis Links (ICLs) to connect two systems to form a 768-port fabric. With 16 to 384 ports per system, it includes all capabilities of SAN256B (including the Fibre Channel Routing Blade and the 10 Gbps FC Blade) plus adds Adaptive Networking to enable Quality of Service (QoS) management and Integrated Routing to enable interconnect of heterogeneous SAN fabrics.
Cisco MDS 9506 for IBM System Storage (2054-E04)	• High-availability enterprise SAN director for Intel® processor-based servers, IBM System i® systems, System p® servers and System z mainframes. Scalable from 12 to 192 1, 2, 4, 8 and 10 Gbps ports with one to four 4-, 12-, 24- and 48-port Fibre Channel modules for Windows, Linux, UNIX and z/OS servers. • An 18/4 4 Gbps Fibre Channel/GbE port multiservice module enables high-performance, cost-effective SAN extension over IP for continuity solutions.
Cisco MDS 9509 for IBM System Storage (2054-E07)	• High-availability enterprise SAN director for Intel processor-based servers, System i systems, System p servers and System z mainframes. Scalable from 12 to 336 1, 2, 4, 8 and 10 Gbps ports with one to seven 4-, 12-, 24- and 48-port Fibre Channel modules for Windows, Linux, UNIX and z/OS servers. • An 18/4 4 Gbps Fibre Channel/GbE port multiservice module enables high-performance, cost-effective SAN extension over IP for continuity solutions.
Cisco MDS 9513 for IBM System Storage (2054-E11)	• High-availability enterprise SAN director for Intel processor-based servers, System i systems, System p servers and System z mainframes. Scalable from 12 to 528 1, 2, 4, 8 and 10 Gbps ports with one to eleven 4-, 12-, 24- and 48-port Fibre Channel modules for Windows, Linux, UNIX and z/OS servers. • An 18/4 4 Gbps Fibre Channel/GbE port multiservice module enables high-performance, cost-effective SAN extension over IP for continuity solutions.

SAN routers to connect heterogeneous SAN fabrics and enable distance extension using Fibre Channel over IP

IBM System Storage SAN04B-R router (2005-R04)	• Provides SAN distance extension using FCIP over the Internet for IBM System x® servers, System i systems, and System p server environments. The SAN04B-R includes two 4, 2 and 1 Gbps Fibre Channel ports and two 50 Megabits per second Ethernet ports. A Performance Enhancement upgrade is available to activate all 16 Fibre Channel ports and increase the speed of the two Ethernet ports to 1 Gbps each. FCIP Tunnelling Service for SAN extension of IP WAN infrastructure features is included. The optional FICON Accelerator feature is available to support mainframe Global Mirror (formerly XRC) and remote tape applications over extended distances. Fibre Channel Routing is standard to support connection to multiple fabrics.
IBM System Storage SAN06B-R multiprotocol router (2498-R06)	• A wide range of IBM System Storage midrange and enterprise Storage Area Network (SAN) infrastructure simplification and business continuity solutions can be created with the IBM System Storage SAN06B-R multiprotocol extension router including disaster tolerance over metropolitan and global IP networks. Separate SAN islands can also be consolidated using Fibre Channel routing. Support for System z servers is provided via the optional 8 Gbps Advanced Extension and FICON CUP Activation features.
Cisco MDS 9222i for IBM System Storage (2054-E01)	• Designed to address the needs of medium-sized businesses and large enterprises, the modular 18/4 (4 Gbps Fibre Channel/GbE) port multiservice SAN router enables high-performance, cost-effective SAN extension over IP for continuity solutions. • Scalable from 18 to 66 1, 2, 4, 8 and 10 Gbps ports with one 4-, 12-, 24- and 48-port Fibre Channel module for Windows, Linux, UNIX and z/OS servers.

Entry-level Products









	Entry-level Tape Drives						Entry-level Tape Libraries		
	TS2230	**TS2240**	**TS2250**	**3580**	**TS2340**	**TS2350**	**TS2900**	**TS3100**	**TS3200**
Product	3580	3580	3580	3580	3580	3580	3572 featuring Ultrium® Half-high drives	3573 L2U	3573 L4U
Machine Type model	**3580** H3L, H3S, PNs 3580L3E, 3580S3E	**3580** H4S, PNs 3580S4E	**3580** H5S, PNs 3580S5E	**3580** L33	**3580** L43, S43, PNs, 3580L4X, 3580S4X	**3580** S53, PNs 3580S5X	**3572** 3572S3H, 3572S4H, PNs 3572S4R, 3572S3R	**3573** L2U PN 35732UL Tape Library w/o Drive	**3573** L4U PN 35734UL Tape Library w/o Drive
Product strengths	Multiplatform support Half-high form factor Lower entry price	3 Gbps SAS attachment Encryption capable Multiplatform support High capacity Half-high form factor	6 Gbps SAS attachment Encryption & media partition capable Multiplatform support High capacity Half-high form factor	Multiplatform support Backward read capable to LTO1 Max performance for LTO3	3 Gbps SAS attachment Encryption capable Multiplatform support High performance High capacity	6 Gbps SAS attachment Encryption & media partition capable Multiplatform support High capacity Full-high form factor	Multiplatform support Half-high form factor Lower entry price High capacity	Multiplatform support High performance High capacity Supports Full High and Half High Tape Drives Supports LTO3, LTO4 and LTO5 drives	Multiplatform support High performance High capacity Supports Full High and Half High Tape Drives Supports LTO3, LTO4 and LTO5 drives
Number of drives	1	1	1	1	1	1	1 LTO half-high	1 FH 1-2 HH	1–2 FH 1-4 HH
Max number of cartridges	1	1	1	1	1	1	9	24	48
WORM/Encryption	yes/no	yes/yes	yes/yes	yes/no	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
Native capacity	Gen 3: 400 GB	Gen 4: 800 GB	Gen 5: 1.5 TB	Gen 3: 400 GB	Gen 4: 800 GB	Gen 5: 1.5 TB	Gen 3: 3.6 TB Gen 4: 7.2 TB	Gen 3: 9.6 TB Gen 4: 19.2 TB Gen 5: 36 TB	Gen 3: 19.2 TB Gen 4: 38.4 TB Gen 5: 72 TB
Typical capacity[2]	Gen 3: 800 GB	Gen 4: 1600 GB	Gen 5: 3.0 TB	Gen 3: 800 GB	Gen 4: 1600 GB	Gen 5: 3.0 TB	Up to 14.4 TB	Up to 72 TB	Up to 144 TB
Native performance	Gen 3: 60 MBps	Gen 4: 120 MBps	Gen 5: 140 MBps	Gen 3: 80 MBps	Gen 4: 120 MBps	Gen 5: 140 MBps	Up to 120 MBps	Up to 280 MBps	Up to 560 MBps
Interface	LVD SCSI, 3 Gbps SAS	3 Gbps SAS	6 Gbps SAS	LVD SCSI	LVD SCSI, 3 Gbps SAS	6 Gbps SAS	3 Gbps SAS	4 Gbps FC (FH only) 3 Gbps SAS LVD SCSI 8 Gbps FC and 6 Gbps SAS (LTO5 only)	4 Gbps FC (FH only) 3 Gbps SAS LVD SCSI 8 Gbps FC and 6 Gbps SAS (LTO5 only)
Supported tape libraries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Platform support[4]	System p, System i, System x, Microsoft Windows, HP-UX, Sun Solaris, Linux	System p, System x and others supporting 3 Gbps attach	System p, System x and others supporting 6 Gbps attach	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, Microsoft Windows, HP-UX, Sun Solaris, Linux	System p, System x and others supporting 6 Gbps attach	System p, System x and other supporting 3 Gbps attach	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux
Application support[5]	A, B, C, D, E, F, G, H, J, L, M	A (others in plan)	A, B, C, E, F, G, H	A, B, C, D, E, F, G, H, J, L, M, N[7]	A (others in plan)	A, B, C, E, F, G, H	A (others in plan)	A, B, C, D, E, F, G, H, J, L, M, N[7]	A, B, C, D, E, F, G, H, J, L, N[7]
Media	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8
Warranty period	3 years[6]	3 years	3 years	3 years[6]	3 years[6]	3 years	1 year[6]	3 years[6]	3 years[6]
Warranty type	CRU	CRU	CRU	CRU	CRU	CRU	CRU	CRU	CRU

F/W = Fast/Wide, **Diff** = Differential, **N/A** = Not Applicable, **FC** = Fibre Channel, **X** = Extended length cartridge, **IOE** = IBM Onsite Exchange, **CRU** = Customer Replaceable Unit
NOTES 1: Max number of cartridges decreases as tape drives are added. **2:** Typical compression for open system environments is 2:1 (user results may vary) **4:** Also includes selected IBM xSeries®, IBM Netfinity®, IBM System i, IBM AS/400® and IBM System p servers. System z support for Linux only **5:** Refer to http://www-03.ibm.com/systems/support/storage/config/ssic/displayesssearchwithoutjs.wss?start_over=yes for current application support **6:** In most countries **7:** The following vendors provide application support to the platforms defined above: **A** = IBM Tivoli Storage Manager, **B** = Symantec Veritas NetBackup, **C** = Symantec Veritas Backup Exec, **D** = EMC Legato NetWorker, **E** = CA BrightStor ARCserve Backup, **F** = HP OpenView Storage Data Protector, **G** = CommVault Galaxy, **H** = BakBone NetVault, **I** = LSC, **J** = IBM BRMS, **K** = IBM OnDemand, **L** = Help/Systems Robot/Save, **M** = LXI Media Management, **N** = Dantz.

Midrange Tape Products




	Midrange Tape Drives		Midrange Tape Libraries	
	TS1040	TS1050	TS3310	TS3500
Product	3588	3588	3576	3584
Machine Type model	**3588** F4A	**3588** F5A	**3576** L5B E9U	**3584** L53 D53 S54
Product strengths	Multiplatform support High performance High capacity Data protection	Multiplatform support High performance High capacity Data protection Media partitioning	Multiplatform support High performance High capacity Modular design	Multiplatform support High performance High capacity High density (HD) Slot Technology
Number of drives	1	1	1–18	1–192
Max number of cartridges	N/A	N/A	409	20,000[1]
WORM/ Encryption	yes/yes	yes/yes	yes/yes	yes/yes
Native capacity	800 GB	1.5 TB	Gen 3: 163.6 TB Gen 4: 327.2 TB	30 PB
Typical capacity[2]	1600 GB	3 TB	Up to 654.4 TB	60 PB
Native performance	120 MBps	140 MBps	Up to 2.16 GBps	26.9 GBps
Interface	4 Gbps FC	8 Gbps FC	4 Gbps FC 3 Gbps SAS (LTO4 only) LVD SCSI (LTO3 only)	8 Gbps FC
Supported tape libraries	TS3500	TS3500	N/A	N/A
Platform support[4]	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux
Application support[5]	A (others in plan)	A, B, C, D, E, F, G, H, J, L[7]	A, B, C, D, E, F, G, H, J, L[7]	A, B, C, D, E, F, G, H, J, L[7]
Media	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8
Warranty period	1 year	1 year	1 year	1 year
Warranty type	Onsite Repair (24x7)	Onsite Repair (24x7)	Next Business Day (9x5)	Onsite Repair (24x7)





	Midrange Tape Drives	Midrange Tape Drives	Midrange Tape Controller	Midrange Tape Libraries	
	3592	3592	3592	3577	3584
Product	TS1130	TS1120	TS1120	TS3400	TS3500
Machine Type model	**3592** E06 EU6	**3592** E05	**3592** C06	**3577** L5U	**3584** L23 D23 S24
Product strengths	Multiplatform support High performance High capacity Data protection	Multiplatform support High performance High capacity Data protection	System z attach-ment of TS1130 and TS1120 drives High performance	Compact format Operates in library or autoloader mode	Multiplatform support Advanced management Scalable High Density (HD) Slot Technology
Number of drives	1	1	1–12	1–2	1–192
WORM/ Encryption	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes
Number of cartridges	N/A	N/A	N/A	18	15,000[2]
Native capacity	60/100/128 GB (JJ/JR media) 300/500/640 GB (JA/JW media) 700 GB/1 TB (JB/JX media)	60/100 GB (JJ/JR media) 300/500 GB (JA/JW media) 700 GB (JB/JX media)	N/A	Up to 18 TB	Up to 15 PB
Typical capacity[1]	384 GB with JJ/JR 1920 GB with JA/JW 3 TB with JB/JX	180/300 GB with JJ/JR 900/1500 GB with JA/JW 2.1 TB with JB/JX	N/A	Up to 54 TB	Up to 45 PB
Native performance	Up to 160 MBps	Up to 104 MBps	Varies[8]	Up to 320 MBps	Up to 30.7 GBps
Interface	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC
Supported tape library	TS3400, TS3500, 3494***	TS3400, TS3500, 3494***	TS3400, TS3500, 3494***	N/A	N/A
Platform support[5]	System p, System i, System x, System z; Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, System z; Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, System z; Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System i, System x, System z, Microsoft Windows, HP-UX, Sun Solaris, Linux	System p, System i, System x, System z; Microsoft Windows; HP-UX; Sun Solaris; Linux
Application support[6]	A, B, D, E, G, H	A B C D E F G H J L[7]	A B C D E F G H J L[7]	A B C D E J	See drive
Media	Refer to Tape Media, page 8	Refer to Tape Media, page 8	N/A	Refer to Tape Media, page 8	Refer to Tape Media, page 8
Warranty period	1 year	1 year	1 year	1 year	1 year
Warranty type	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)

* Virtual resource specification

** for data replication only

*** Product withdrawn from marketing

**** Total capacity for 4 similar models, mix of models is supported

Midrange/Enterprise Tape Products





	Midrange Tape Virtualization	Enterprise Tape Virtualization			
	ProtecTIER Appliance	**Virtualization Engine**			**ProtecTIER Gateway**
Product	TS7650	TS7530	TS7720	TS7740	TS7650G and TS7680
Machine Type model	**3958** AP1	**3954** CV7 (requires additional machine types and models)	**3957** VEA (requires additional machine types and models)	**3957** V06 (requires additional machine types and models)	**TS7650: 3958**DD3 **TS7680: 3958**DE2
Product strengths	Eliminates redundant data by up to a factor of 25:1	Reduces backup window Reduces recovery time High capacity	Increases performance Scalable Large cache for fast recall	Increases performance Scalable Helps reduce cost	Eliminates redundant data by up to a factor of 25:1
Number of drives	Up to 256	Up to 1024 (1 node)* Up to 4096 (4 node)*	N/A	Up to 256* Up to 1024* (4 site GRID)	Up to 256 (1 node)* Up to 512 (clustered)*
WORM/Encryption	no/no	no/yes	yes/yes	yes/yes	no/no
Number of cartridges	Up to 500,000	Up to 64,000 (1 node)* Up to 256,000 (4 node)*	Up to 1,000,000*	Up to 1,000,000*	Up to 500,000 (1 node)* Up to 1,000,000 (clustered)*
Native capacity	Up to 36 TB	Up to 1.7 PB	Up to 70 TB Up to 280 TB (4 site GRID****)	Up to 14 TB Up to 56 TB (4 site GRID****)	Up to 1 PB
Typical capacity[1]	Up to 900 TB (nominal capacity based on a deduplication ration of 25:1)	Up to 1.7 PB Up to 2.6 PB	Up to 210 TB Up to 840 TB (4 site GRID****)	Up to 42 TB Up to 168 TB (4 site GRID****)	Up to 1 PB
Native performance	Up to 500 MBps	Up to 4.8 GBps	Up to 600 MBps	Up to 600 MBps	Up to 500 MBps, 1000 MBps clustered
Interface	4 GBps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 GBps FC
Supported tape library	N/A	TS3500, TS3310, TS3200, TS3100, 3494***	TS3500, when in a grid with TS7740	TS3500, 3494***	N/A
Platform support[5]	System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux	System p, System x, System z[10], System i[11]; Microsoft Windows; HP-UX; Sun Solaris; Linux	System z	System z	TS7650 for System p, System i, System x, Microsoft Windows; HP-UX; Sun Solaris; Linux TS7680 for System z
Application support[6]	A, B	A, B	A	A	A, B
Media	N/A	N/A	N/A	N/A	N/A
Warranty period	1 year	1 year	1 year	1 year	1 year
Warranty type	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)

F/W = Fast/Wide, **Diff** = Differential, **N/A** = Not Applicable, **FC** = Fibre Channel, **X** = Extended length cartridge, **IOE** = IBM Onsite Exchange, **CRU** = Customer Replaceable Unit
NOTES 1: Typical compression for mainframe environments is 3:1; 2:1 for open systems (user results may vary) **2:** Max number of 3592 cartridges decreases as tape drives are added **3:** IBM AIX 4.1.5 or later. **4:** Load and search only **5:** Server platforms with SAN-ready attachability, model- and feature-dependent. **6:** The latest ISV support can be found in the connectivity section at http://www-03.ibm.com/systems/storage/tape/library.html#compatibility. **7:** The following vendors provide application support to the platforms defined above: **A** = IBM Tivoli Storage Manager, **B** = Symantec Veritas NetBackup, **C** = Symantec Veritas Backup Exec, **D** = EMC Legato NetWorker, **E** = CA BrightStor ARCserve Backup, **F** = HP OpenView Storage Data Protector, **G** = CommVault Galaxy, **H** = BakBone NetVault, **I** = LSC, **J** = IBM BRMS, **K** = IBM OnDemand, **L** = Help/Systems Robot/Save, **M** = LXI Media Management. **8:** Performance varies by environment **10:** Applies to Linux on System z using FCP **11:** Requires RPQ **12:** EE = Enterprise Edition LE = Limited Edition

Other Backup Tape Products



	Tape Drives			
	7206-336	**7207**	**7212**	**7214**
Product	DAT72 Tape Drive	SLR60 Tape Drive	Device Enclosure*	Device Enclosure*
Machine Type model	**7206** 336-DDS Gen 5	**7207** 330	**7212** 103	**7214** 1U2
Product strengths	Cost-effective streaming tape drive	Backward read/write compatible with System i internal	Rack-mountable 2-drive enclosure utilizes only 1U (1.75") of space	Rack-mountable 2-drive enclosure utilizes only 1U (1.75") of space
Number of drives	1	1	1–2	1–2
Max number of cartridges	1	1	2	2
Cartridge capacity native/ compressed	36/72 GB	330: 30/60 GB	DVD: Variable (FC1103) DAT72: 36/72GB (FC1105) SLR60: Variable (FC1107) SLR100: Variable (FC1108) HHLTO2: 200/400 GB (FC1109)	DVDRAM: Variable (FC1420) DVDROM: Variable (FC1421) DAT72: 36/72 GB (FC1400) DAT160 80/160 GB (FC1401) HHLTO4 800 GB/1.6 TB (FC1404)
Max drive data rate[1] native/ compressed	336: 3/6 MBps	330: 4/8 MBps	DDS/DAT72: 3/6 MBps HHLTO2: 30/60 MBps	DAT72 3/6 MBps DAT160 6.9/13.8 MBps HHLTO4 120/40 MBps
Interface	SCSI-2 F/W SE, LVD/SE	SCSI-2 SE, ULTRA, LVD/SE, 160/320	SCSI-3 ULTRA, LVS, 160/320	3 Gbps SAS
Platform support[3]	System p	System p, System i	System p, System i, IBM Power Systems™	IBM Power Systems
Media	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8
Warranty period	1 year	1 year	1 year	1 year
Warranty type	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)

* 7212-103 and 7214-1U2 also offer DVD-ROM and DVD-RAM optical drives
For most current information, visit: **ibm.com**/servers/storage/tape/compatibility/index.html

Diff = Differential, **N/A** = Not Applicable, **FC** = Fibre Channel, **X** = Extended length cartridge, **IOE** = IBM Onsite Exchange, **CRU** = Customer Replaceable Unit
NOTES 1: Compressed data rates are estimates and are data-, application- and processor-dependent. User results may vary. **3:** Server platforms with SAN-ready attachability, model- and feature-dependent. **6:** The following vendors provide application support to the platforms defined above: **A** = IBM Tivoli Storage Manager, **B** = Symantec Veritas NetBackup, **C** = Symantec Veritas Backup Exec, **D** = EMC Legato NetWorker, **E** = CA BrightStor ARCserve Backup, **F** = HP OpenView Storage Data Protector, **G** = CommVault Galaxy, **H** = BakBone NetVault, **I** = LSC, **J** = IBM BRMS, **K** = IBM OnDemand, **L** = Help/Systems Robot/Save, **M** = LXI Media Management, **N** = Dantz.

Selecting a Solution

	Solution	Native Performance	Capacity*	System z	System p	System i**	System x	Open Systems***
Entry tape products	TS2230 tape drive	60 MBps	800 GB					
	TS2240 tape drive	120 MBps	1600 GB					
	TS2340 tape drive	120 MBps	1600 GB					
	TS2900 tape autoloader	120 MBps	Up to 14.4 TB					
	TS3100 tape library	120 MBps	Up to 38.4 TB					
	TS3100 tape library with HH drives	240 MBps	Up to 38.4 TB					
	TS3200 tape library	240 MBps	Up to 76.8 TB					
	TS3200 tape library with HH drives	480 MBps	Up to 76.8 TB					
Midrange tape products	TS1050 tape drive	140 MBps	3000 GB					
	TS3310 tape library	Up to 2.16 GBps	Up to 654.4 TB					
	TS3500 tape library	Up to 23 GBps	Up to 60 PB					
Enterprise tape products	TS1130 tape drive	Up to 160 MBps	3000 GB					
	TS1120 tape drive	Up to 104 MBps	2100 GB					
	TS1120 tape controller	Up to 230 MBps	N/A					
	TS3400 tape library	Up to 320 MBps	Up to 54 TB					
	TS3500 tape library	Up to 30.7 GBps	Up to 45 PB					
Tape Virtualization	TS7530**	Up to 4.8 GBps	Up to 2.6 TB					
	TS7650	Up to 1000 MBps	Up to 1 PB		System p System i** System x Open Systems***			
	TS7680	Up to 1000 MBps	Up to 1 PB		System z			
	TS7720	Up to 600 MBps	Up to 210 TB					
	TS7740	Up to 600 MBps	Up to 42 TB					
Other backup products	7206-336	Up to 3 MBps	72 GB					
	7206-VX2	Up to 6 MBps	60 GB					
	7206-VX3	Up to 24 MBps	160 GB					
	7207-330	Up to 4 MBps	60 GB					
	7212-103	Up to 12 MBps	320 GB					

* Compressed; see **ibm.com**/storage for specific capacities.

** Available on System i through AIX/Linux partitioning.

*** See **ibm.com**/storage for specific open systems connectivity.

Yes **No** **Partial**

IBM Systems

Demand for lightning-fast communication and transactions has driven the need for a high-performance, responsive infrastructure that embraces open standards—exactly what you will find in the IBM Systems product portfolio. Investments in servers often result in demands on disk and tape storage systems. IBM has a family of storage offerings that complements the IBM Systems product portfolio. There is no better storage offering for IBM Systems than an IBM System Storage product. These offerings are tested and supported by IBM and are backed by outstanding IBM service and support.

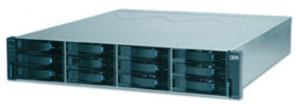
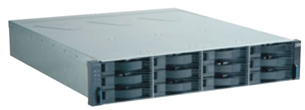
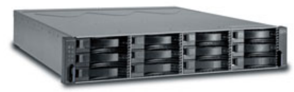
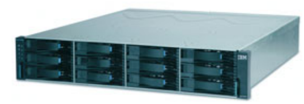
IBM Business Partner Innovation Centers (BPIC)

More than 140 worldwide IBM Solution Centers can deliver one-stop shopping for storage hardware, software and consulting services. The Solution Centers offer you both a local venue for hands-on testing of IBM storage solutions and a platform for proof-of-concept and benchmarking activities. These centers also work with the leading storage software providers to support a wide variety of choices for interoperability. IBM Business Partners will help you select and implement a solution to help your business succeed in today's dynamic marketplace. Visit: **ibm.com**/storage/tssc

Media tape	Highlights	Technology	Length (m/feet)	Capacity native	Capacity Compressed (typical)	Part number	Related products	Part number
Enterprise tape	• Custom labeling and initialization services are available • Server tracks help improve data integrity • Cartridge intermix within libraries supports smooth migration, legacy systems • Write Once Read Many (WORM) functionality • Machine type/model: 3599	3592 Tape Cartridge	825/2706 825/2706 610/2001 610/2001 246/810 246/810	700 GB/1 TB 700 GB/1 TB 300/500/640 GB 300/500/640 GB 60/100/128 GB 60/100/128 GB	2.1/3 TB 2.1/3 TB 900 GB, 1.5/1.9 TB 900 GB, 1.5/1.9 TB 180/300/384 GB 180/300/384 GB	23R9830 23R9831* 18P7534 18P7538* 24R0316 24R0317*	3592 Cleaning Cartridge	18P7535
		3590 Tape Cartridge	320/1050	10/20/30 GB	30/60/90 GB	05H4434 05H3302-J-less	3590 Cleaning Cartridge	05H4435
		3590E Tape Cartridge	634/2070	20/40/60 GB	60/120/180 GB	05H3188 08L6091-K-less		
.31" MP tape	• Unique midpoint load mechanism enables the system to locate data fast • Durable cartridge case helps protect the tape • Self-contained tape path helps improve reliability and extend tape life • Almost instantaneous head/tape contact at load time speeds processing	IBM Magstar® MP Fast Access Linear Tape Cartridge	167/54	5 GB	15 GB	05H2462—B 08L6187—C	Cleaning Cartridge	05H2463
LTO tape	• Media uses industry-leading, interchangeable LTO format • Cartridge is highest-capacity open standard tape cartridge available • Custom labeling is available • IBM-exclusive Statistical Analysis and Reporting System (SARS) statistics are stored in cartridge memory • High durability helps support automation environments • Machine type/model: 3589	Ultrium 4 Ultrium 4 Ultrium 3 Ultrium 3 Ultrium 2 Ultrium 1	820/2690 820/2690 680/2231 680/2231 609/1998 609/1998	800 GB 800 GB 400 GB 400 GB 200 GB 100 GB	1600 GB 1600 GB 800 GB 800 GB 400 GB 200 GB	95P4436 95P4450* 24R1922 96P1203* 08L9870 08L9120	Ultrium Cleaning Cartridge (all) Leader Pin Attachment Kit 5-pack LTO Ultrium 4 tapes 5-pack LTO Ultrium 3 tapes	35L2086 08L9129 95P4278 95P2020
Optical cartridge	• Suitable for storing data that can be overwritten and has a finite life span • WORM media helps safeguard against data being erased or changed	3996 Ultra Density Optical (UDO)	N/A	30 GB 30 GB* 60 GB 60 GB*		23R2568 23R2567 59H5629 59H5628		
DLTtape	• Cartridge labelling area and labels are included • VS1 Data Cartridge	VS1	563/1850	80 GB	160 GB	18P8923	Cleaning Cartridge - VS160	18P8924
VXA-2/3	• Durable coating can resist oxidation and moisture • Advanced archival and capacity properties are included • Wide selection of compatible cartridge capacities support daily or full backups • Media enclosure shutter locks out dirt and debris	VXA 8 mm—X6 VXA 8 mm—X10 VXA 8 mm—X23	62/203 124/406 230/754	40 GB 80 GB 160 GB	80 GB 160 GB 320 GB	24R2134 24R2136 24R2137	Cleaning Cartridge—X-MEDIA	24R2138
4 mm Tape	• Precision-matched tape reels and reel heights help support reliable operation • Proprietary hub lock helps reduce positioning errors to improve data integrity • Improved media coating helps reduce head friction and provide cleaner operation	DDS-3	125/410	12 GB	24 GB	59H3465	Cleaning Cartridge—4 mm DAT 160 Cleaning Cartridge only	21F8763 23R5638
		DDS-4	150/492	20 GB	40 GB	59H4456		
		DAT72 DAT160	170/557 190/700	36 GB 80 GB	72 GB 160 GB	18P7912 23R5635		
8 mm Tape	• Special media formulation can help reduce drop-out to improve reliability • Rigid magnetic stability specification helps increase coercivity to prolong shelf life and improve read reliability	AME	22/73	2.5 GB	5 GB	59H2671	Cleaning Cartridge—AME	35L1409
			170/557	20 GB	40 GB	59H2678		
SLR (QIC) cartridges	• Sophisticated mirror optics support BOT and EOT recognition • Advanced media-binder process provides ultra-clean operation • Stringent wheel-pin perpendicularity specification enables smoother operation and fewer re-reads • Proprietary belt design provides steady tension • Special stippled base-plate design helps provide rigidity and a stable tape path • Cartridge cover shields against static discharge and airborne debris • Durastat on drive rollers dissipates static	5.25" SLR5/QIC-4GB-DC	458/1500	4 GB	8 GB	59H3660	QIC 5.25" MLR/SLR Cleaning Cartridge (50 uses)	35L0844
		5.25" MLR1/QIC-5010-DC	458/1500	16 GB	32 GB	59H4175		
		5.25" MLR3/QIC-5120-DC	462/1515	25 GB	50 GB	59H4128		
		5.25" SLR60	274/900	30 GB	60 GB	19P4209		
		5.25" SLR100	47/156	5 GB	10 GB	35L0661		
	1-888-IBM-MEDIA **ibm.com**/storage/media	5.25" SLR100	457/1500	50 GB	100 GB	35L0968		

* WORM version

Entry-level Disk Systems

	System x and IBM BladeCenter® Direct Attach or SAN Solutions				System p Only Direct Attach Solutions
	EXP3000 Expansion Unit	**DS3200 SAS Storage Controller**	**DS3300 iSCSI Storage Controller**	**DS3400 FC Storage Controller**	**EXP24**
Product	EXP3000	DS3200	DS3300	DS3400	EXP24
Machine/model	1727-01X, 1727-02T Telco DC Power Model	1726-21X, 1726-22X, 1726-22T Telco DC Power Model	1726-31X, 1726-32X, 1726-32T Telco DC Power Model	1726-41X, 1726-42X, 1726-42T Telco DC Power Model	7031-D24—Rack version 7021-T24—Tower version
Platform support[1]	Windows 2003, RedHat 3, RedHat 4, SUSE 9	Windows 2003, Windows 2008, RedHat 4, RedHat 5, SUSE 9, SUSE 10, NetWare, VMware 3.5/3i, AIX 5.3, AIX 6.1	Windows 2003, Windows 2008, RedHat 4, RedHat 5, SUSE 9, SUSE 10	Windows 2003, Windows 2008, RedHat 4, RedHat 5, SUSE 9, SUSE 10, NetWare, VMware 2.5.4, VMware 3.0.1, VMware 3.0.2, VMware 3.5/3i, AIX 5.2, AIX 5.3, AIX 6.1	AIX 5L 5.2 AIX 5L 5.3 RedHat 3 RedHat 4 RedHat 5 SUSE 9 SUSE 10
Host connectivity	SAS	SAS	iSCSI	4 Gbps Fibre Channel	SCSI
SAN support	N/A	SAS SAN with BladeCenter	Switched, IP SAN	Direct, Switched Fabric	N/A
Copy services	N/A	IBM FlashCopy®, IBM VolumeCopy	IBM FlashCopy, IBM VolumeCopy	IBM FlashCopy, IBM VolumeCopy	N/A
Availability features	Fault-tolerant RAID, Redundant Hot-swap power, Hot-swap drives, Dual pathing drives	Fault-tolerant, RAID, Redundant Hot-swap power, Hot-swap drives, Dual controller, dual pathing drivers	Fault-tolerant, RAID, Redundant Hot-swap power, Hot-swap drives, Dual controller, dual pathing drivers	Fault-tolerant, RAID, Redundant Hot-swap power, Hot-swap drives, Dual controller, dual pathing drivers	Fault-tolerant RAID, Redundant Hot-swap power, Hot-swap drives
Controller	MegaRAID 8480	Dual active 3 Gbps SAS RAID Controllers	Dual active 1 Gbps iSCSI RAID Controllers	Dual Active 4 Gbps FC RAID Controllers	System p FC 5741 & 5742 SCSI Repeaters
Cache (min, max)	256 MB battery backup	512 MB, 2 GB battery backup	512 MB, 2 GB battery backup	512 MB, 2 GB battery backup	N/A
RAID support	0, 1, 3, 5, 6,10	0, 1, 3, 5, 6, 10	0, 1, 3, 5, 6, 10	0, 1, 3, 5, 6, 10	0, 1, 3, 5, 10
Capacity (min, max)	146 GB, 24 TB in a single EXP3000 Expansion Units	146 GB, 96 TB with 3 EXP3000 Expansion Units	146 GB, 96 TB with 3 EXP3000 Expansion Units	146 GB, 96 TB with 3 EXP3000 Expansion Units	73 GB, 7.2 TB
Drive interface	3 Gbps SAS, 3 Gbps SATA II	3 Gbps SAS	3 Gbps SAS	3 Gbps SAS	Ultra320 SCSI
Drive support	SAS: 146 GB, 300 GB, 450 GB, 15,000 rpm disk drives, 6 Gbps SAS: 300 GB, 450 GB, 600 GB SAS drives at 15,000 rpm SATA: 500 GB, 750 GB, 1 TB, 2 TB SATA II 7,200 rpm	SAS: 146 GB, 300 GB, 450 GB, 15,000 rpm disk drives, 6 Gbps SAS: 300 GB, 450 GB, 600 GB SAS drives at 15,000 rpm SATA: 500 GB, 750 GB, 1 TB, 2 TB SATA II 7,200 rpm	SAS: 146 GB, 300 GB, 450 GB, 15,000 rpm disk drives, 6 Gbps SAS: 300 GB, 450 GB, 600 GB SAS drives at 15,000 rpm SATA: 500 GB, 750 GB, 1 TB, 2 TB SATA II 7,200 rpm	SAS: 146 GB, 300 GB, 450 GB, 15,000 rpm disk drives, 6 Gbps SAS: 300 GB, 450 GB, 600 GB SAS drives at 15,000 rpm SATA: 500 GB, 750 GB, 1 TB, 2 TB SATA II 7,200 rpm	73 GB, 146 GB, 300 GB 10,000 rpm disk drives; 36 GB, 73 GB, 146 GB, 300 GB 15,000 rpm disk drives
Clustering Support	N/A	Microsoft Windows MSCS	Microsoft Windows MSCS	Microsoft Windows MSCS	HACMP™

[1] Please check the SSIC site for the most up to date platform support.

Midrange Disk Systems

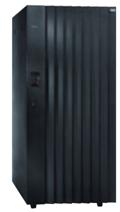


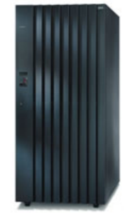


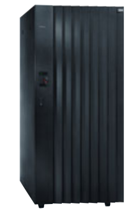
	DS4700 Express	DS5020 Express	DS3950 Express	DS5000 series	EXP395/EXP520
Product	DS4700 Express Disk System	DS5020 Express	DS3950 Express*	DS5100 and DS5300	EXP395* and EXP520
Machine/model	1814-72A/70A	1814-20A	Models 94/98 Part Numbers 68Y7530/68Y7533	1818-51A,1818-53A	1814-92H
Platform support[1]	System p, System x, System i w/VIOS, Windows Server 2003 w/SP1, Windows 2000 Server & Advanced Server w/SP4, Novell NetWare 6.0 w/SP5 & 6.5 w/SP5, Red Hat Enterprise Linux 3.0 U7, Red Hat Enterprise Linux 4.0 U3 SUSE Linux Enterprise Server 8 SP4, SUSE Linux Enterprise Server 9 SP3, VMware ESX 3.0/3.5/3i, VMware ESX 2.5.2 AIX 5.1, 5.2, 5.3, 6.1 HP-UX 11i and 11.23, Solaris 8, 9, 10	System p, System x, Windows 2003, Windows 2008 w/Hyper-V, AIX 5.3 and 6.1, VMware 3.5, 4, SLES 9 and 10, RHEL 4 and 5, HP-UX IBM i w/VIOS RHEL, SLES	System p, System x, Windows 2003, Windows 2008 w/Hyper-V, AIX 5.3 and 6.1, VMware 3.5, 4, SLES 9 and 10, RHEL 4 and 5, HP-UX IBM i w/VIOS RHEL, SLES	System p, System x, Windows 2003, Windows 2008 w/Hyper-V, AIX 5.2,5.3 and 6.1, VMware 3.5, SLES 9 and 10, RHEL 4 and 5, HP-UX	N/A
Host connectivity	Fibre Channel	Fibre Channel/iSCSI	Fibre Channel/iSCSI	Fibre Channel/iSCSI	N/A
SAN support	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	N/A
Copy services	Enhanced Remote Mirroring, FlashCopy, VolumeCopy	Enhanced Remote Mirroring, FlashCopy, VolumeCopy	Enhanced Remote Mirroring, FlashCopy, VolumeCopy	Enhanced Remote Mirroring, FlashCopy, VolumeCopy	N/A
Availability features	Fault-tolerant RAID, redundant power/cooling, hot-swap drives, dual controllers, concurrent microcode update capability, dual-pathing driver	Fault-tolerant RAID, redundant power/cooling, hot-swap drives, dual controllers, concurrent microcode update capability, dual-pathing driver	Fault-tolerant RAID, redundant power/cooling, hot-swap drives, dual controllers, concurrent microcode update capability, dual-pathing driver	Fault-tolerant RAID, redundant power/cooling, hot-swap drives, dual controllers, concurrent microcode update capability, dual-pathing driver	ESM-imbedded "loop switch", Redundant 4 Gb/s FC drive loops ensure complete accessibility to all drives in the event of a loop or cable failure, Redundant power supplies, cooling fans and ESMs, All primary components are hot-swappable
Controller	Dual active 4 Gbps RAID controllers	Dual active 8 Gbps RAID controllers and/or 1 Gbps iSCSI	Dual active 8 Gbps RAID controllers and/or 1 Gbps iSCSI	Dual active 4 Gbps RAID controllers	N/A
Cache (min, max)	2 GB, 4 GB (70A/72A)	2/4 GB	2/4 GB	8/16/32/64 GB	N/A
RAID support	0, 1, 3, 5, 6, 10	0, 1, 3, 5, 6, 10	0, 1, 3, 5, 6, 10	0, 1, 3, 5, 6, 10	N/A
Capacity (min, max)	36.4 GB, 50.4 TB via EXP810, EXP710 (FC), 224 TB via EXP810 (SATA), 44.8 TB via EXP100	Legacy support for EXP810 587 GB min, up to 67.2 TB's with 6 EXP520's w/FC drives or 224 TB's with SATA	Legacy support for EXP810 587 GB min, up to 67.2 TB's with 6 EXP395's w/FC drives or 224 TB's with SATA	Legacy support for EXP810 587 GB min, up to 896 TB (DS5100 and DS5300) 896 TB (DS5300 w/16 EXP5000 w/SATA and 268.8 TB FC)	Up to 16 FC or SATA disk drives.
Drive interface	4 Gbps Switched	4 Gbps Switched	4 Gbps Switched	4 Gbps Switched	4 Gb/s FC for high-speed connectivity
Drive support	Supports 4 Gbps FC: 15k – 600 GB, 450 GB, 300 GB, 146.8 GB, 73.4 GB, E-DDM Supports 4 Gbps SATA: 7.2K 500 GB/750 GB and 1 TB, 2 TB E-DDM Disk drives	Supports 4 Gbps FC: 15k – 600 GB, 450 GB, 300 GB, 146.8 GB, E-DDM Supports 4 Gbps SATA: 7.2K 500 GB/750 GB and 1 TB, 2 TB E-DDM Disk drives	Supports 4 Gbps FC: 15k – 600 GB, 450 GB, 300 GB, 146.8 GB, E-DDM Supports 4 Gbps SATA: 7.2K 500 GB/750 GB and 1 TB E-DDM Disk drives	Supports 4 Gbps FC: 15k – 600 GB, 450 GB, 300 GB, 146.8 GB, 73.4 GB, E-DDM Supports 4 Gbps SATA: 7.2K 500 GB, 750 GB, 1 TB, 2 TB E-DDM Disk drives Supports SSD drive: 300 GB	N/A
Certifications	Microsoft RAID, Cluster, NetWare Cluster, HACMP, Veritas Clustering[4]	Microsoft Clustering Services, IBM SAN Volume Controller, HACMP	Microsoft Clustering Services, IBM SAN Volume Controller, HACMP	Microsoft Clustering Services, IBM SAN Volume Controller 4.3, HACMP	N/A

* Product not available in the U.S. and Canada

High-end and Enterprise Disk Systems







	XIV	DS6800	DS8100	DS8300	DS8700
Product	IBM XIV Storage System	IBM System Storage DS6800	IBM System Storage DS8000	IBM System Storage DS8000	IBM System Storage DS8000
Machine/model	2810/A14, 2812/A14	1750/522	2421, 2422, 2423, 2424/931	2421, 2422, 2423, 2424/932/9B2	2421, 2422, 2423, 2424/941/94E
Platform support[1]	System x, System p, AIX, Solaris, HP-UX, Windows 2000, Windows Server 2003, Linux for Intel systems, Linux for System p, Linux for System z, VMware, Apple Macintosh OSX	System x, System i, System p, System z, IBM i5/OS®, OS/400, AIX, Solaris, HP-UX, Windows 2000, Windows Server 2003, Linux for IBM System z, z/OS, IBM z/VM®, IBM VSE/ESA, TPF, Linux for System i, Linux for System p, Linux for Intel systems, OpenVMS, TRU64, NetWare, VMware, Apple Macintosh OS X, Fujitsu PRIMEPOWER, SGI IRIX	System x, System i, System p, System z, i5/OS, OS/400, AIX, Solaris, HP-UX, Windows 2000, Windows Server 2003, Linux for System z, z/OS, z/VM, VSE/ESA, TPF, Linux for System i, Linux for System p, Linux for Intel systems, OpenVMS, TRU64, NetWare, VMware, Apple Macintosh OS X, Fujitsu PRIMEPOWER, SGI IRIX	System x, System i, System p, System z, i5/OS, OS/400, AIX, Solaris, HP-UX, Windows 2000, Windows Server 2003, Linux for System z, z/OS, z/VM, VSE/ESA, TPF, Linux for System i, Linux for System p, Linux for Intel systems, OpenVMS, TRU64, NetWare, VMware, Apple Macintosh OS X, Fujitsu PRIMEPOWER, SGI IRIX	System x, System i, System p, System z, i5/OS, OS/400, AIX, Solaris, HP-UX, Windows 2000, Windows Server 2003, Linux for System z, z/OS, z/VM, VSE/ESA, TPF, Linux for System i, Linux for System p, Linux for Intel systems, OpenVMS, TRU64, NetWare, VMware, Apple Macintosh OS X, Fujitsu PRIMEPOWER, SGI IRIX
Host connectivity	4 Gbps Fibre Channel, iSCSI	1 Gbps and 2 Gbps Fibre Channel/FICON	2 Gbps and 4 Gbps Fibre Channel, FICON, IBM ESCON®	2 Gbps and 4 Gbps Fibre Channel, FICON, ESCON	4 Gbps Fibre Channel, FICON
SAN support	Direct, FC-AL, Switched Fabric, Ethernet	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric
Copy services	synchronous mirror, asynchronous mirror, snap-shot, thin provisioning	FlashCopy, Metro Mirror, Global Mirror, Global Copy, as target for z/OS Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror
Availability features	Fault tolerant, N+1 redundancy, hot-swappable parts, 3 Universal Power Supplies, nondisruptive hardware changes, nondisruptive code load multipathing device drivers as supported through OSs	Fault tolerant, dual redundant and hot-swap RAID controller cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, nondisruptive hardware and software code load updates, multipathing device driver	Fault tolerant, dual redundant and hot-swap RAID controller cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, nondisruptive hardware and software code load updates, multipathing device driver	Fault tolerant, dual redundant and hot-swap RAID controller cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, nondisruptive hardware and software code load updates, multipathing device driver	Fault tolerant, dual redundant and hot-swap RAID controller cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, nondisruptive hardware and software code load updates, multipathing device driver
Controller	Multiple active-active	Dual active/active	Dual active/active	Dual active/active	Dual active/active
Cache (min, max)	48/120 GB	4 GB	16/128 GB	32/256 GB	32/384 GB
RAID support	Data mirroring	5, 10	5, 6, 10	5, 6, 10	5, 6, 10
Capacity – raw (min, max)	72 TB 360 TB	292 GB, 57 TB	1.1 TB, 384 TB	1.1 TB, 1024 TB	584 GB, 2048 TB
Drive interface	SATA	2 Gbps Fibre Channel	2 Gbps Fibre Channel	2 Gbps Fibre Channel	2 Gbps Fibre Channel
Drive support	1000 GB, 2000 GB	73 GB 15K, 146 GB 15K, 300 GB 15K	73 GB SSD, 146 GB SSD, 146 GB 15K, 300 GB 15K, 450 GB 15K, 1 TB 7.2K SATA	73 GB SSD, 146 GB SSD, 146 GB 15K, 300 GB 15K, 450 GB 15K, 1 TB 7.2K SATA	73 GB SSD, 146 GB SSD, 146 GB 15K, 300 GB 15K, 450 GB 15K, 1 TB SATA, 2 TB SATA
Certifications	Oracle RAC, IBM PowerHA™ for AIX, HP MC/ServiceGuard Microsoft Cluster Server, NetWare Cluster Services, Sun Solaris Cluster, SVC	Oracle OSCP Validation of Compatibility, HACMP, Solaris Ready, Veritas Cluster	Oracle OSCP Validation of Compatibility, HACMP, GDPS, Solaris Ready, Veritas Cluster	Oracle OSCP Validation of Compatibility, HACMP, GDPS, Solaris Ready, Veritas Cluster	Oracle OSCP Validation of Compatibility, HACMP, GDPS, Solaris Ready, Veritas Cluster

1: Consult product information for details. **2:** RedHat, SUSE Linux and TurboLinux. Please verify specific product information for details. **3:** Via IBM TotalStorage SAN Controller 160; no cluster or HACMP support. **4:** Also, verification will be completed for HP Service Guard. **5:** Metro Mirror is synchronous replication; Global Mirror is asynchronous replication; Metro/Global Mirror is three-site cascading asynchronous replication; Global Copy is extended distance copying.

Product	Highlights
DS8700	• Availability and Resiliency: Greater than five-nines availability[1] and a 10-year lineage of incremental hardware and microcode improvements built on the IBM POWER® server architecture. • Performance: Designed for the highest levels of performance for your mission-critical applications • Flexibility and Scalability: Systems can scale up from the smallest configuration to the largest configuration nondisruptively by upgrading drive capacity, host adapters, drive adapters, memory, and even the system's processor complexes. New drive options double raw capacity to over 2 petabytes. • Optimized Storage Tiering: New IBM System Storage Easy Tier feature optimizes solid-state storage deployments simply and automatically
DS8300	• Support continuous operations for cross-platform, mission-critical workloads with leading performance, flexibility, high availability, security, and cost effectiveness • Manage growth and reduce operational complexity through consolidation with multitiered storage, advanced management capabilities, support for advanced IBM deduplication technology, and thin provisioning • Realize greater efficiencies for IBM server environments through unique support for innovative IBM server platforms, such as High Performance FICON for System z, z/OS Metro/Global Mirror Incremental Resync, Extended Address Volumes, HyperPAV, Extended Distance FICON, and Cooperative Caching • Exceptional acquisition costs and total cost of ownership (TCO) with enterprise choice warranties of one, two, three or four years on both hardware and advanced functions
DS8100	• Platform, mission-critical workloads with leading performance, flexibility, high availability, security, and cost effectiveness • Manage growth and reduce operational complexity through consolidation with multitiered storage, advanced management capabilities, support for advanced IBM deduplication technology, and thin provisioning • Realize greater efficiencies for IBM server environments through unique support for innovative IBM server platforms, such as High Performance FICON for System z, z/OS Metro/Global Mirror Incremental Resync, Extended Address Volumes, HyperPAV, Extended Distance FICON, and Cooperative Caching • Exceptional acquisition costs and TCO with enterprise choice warranties of one, two, three or four years on both hardware and advanced functions
XIV Storage System	• A revolutionary high-end disk system for UNIX and Intel processor-based environments designed to eliminate the complexity of storage management • Scales up to 360 TB of physical capacity, 161 TB of usable capacity • Up to 16,000 instantaneous and highly space-efficient snapshots enable point-in-time copies of data • Built-in thin provisioning that can help reduce direct and indirect costs • Synchronous remote mirroring provides protection against primary site outages, disasters and site failures • Offers FC and iSCSI attach for flexibility in server connectivity.
DS6800	• Provides enterprise-class disk offering in a modular package at an affordable price • Designed to provide host connectivity via FC/FICON to a wide variety of UNIX, Windows, Linux, System p servers, System x servers, System i systems and System z mainframes • Features FlashCopy as well as Global and Metro Mirroring functions • Enterprise-class warranty, 24x7, same day IBM onsite response

Product	Highlights
DS5000 (DS5100/DS5300)	• Provides SAN-ready flexible, efficient, scalable disk storage system for UNIX and Intel processor-based environments • Offers high-performance, full fibre solution with up to 16 – 4 Gbps Fibre Channel host port connectivity and 8 Gbps FC and/or 1 Gbps iSCSI • Supports business continuance with its optional high-availability software and advanced Enhanced Remote Mirroring function • Helps protect customer data with its multi-RAID capability, including RAID 6, and hot-swappable redundant components
DS5020 Express	• Mixed host interfaces support (FC/iSCSI) enables SAN tiering • Balanced performance well-suited for virtualization/consolidation • Self-encrypting drives secure data throughout your drive's lifecycle • Support for intermixing FC/FDE/SATA drives enables tiered storage • Feature-rich management software that maximizes utilization and minimizes storage TCO
DS3950 Express	• Mixed host interfaces support (FC/iSCSI) enables SAN tiering • Balanced performance well-suited for virtualization/consolidation • Support for intermixing FC/SATA drives enables tiered storage • Feature-rich management software that maximizes utilization and minimizes storage TCO
DS4700 Express	• Provides SAN-ready flexible disk storage system for UNIX and Intel processor-based environments • Offers high-performance, full fibre solution with 4 Gbps Fibre Channel connectivity • Supports business continuance with its optional high-availability software and advanced Enhanced Remote Mirroring function • Helps protect customer data with its multi-RAID capability and hot-swappable redundant components
EXP395/EXP520	• 4 Gb/s FC interfaces for high-speed connectivity • Up to 16 FC or SATA disk drives • ESM-embedded "loop switch" • Redundant 4 Gb/s FC drive loops ensure complete accessibility to all drives in the event of a loop or cable failure. • Redundant power supplies, cooling fans and ESMs.
DS3400	• Scalable to 24 terabytes (TB) of storage capacity with 2 TB hot-swappable Serial ATA (SATA) disks • Expandable by attaching up to three EXP3000s, a total of 96 TB of storage capacity • Flexible for use with IBM System x and BladeCenter servers
DS3300	• 1 Gbps iSCSI interface technology • Easy to deploy and manage with the DS3000 Storage Manager • Scalable to 24 TB of storage capacity with 2 TB hot-swappable Serial ATA (SATA) disks • Expandable by attaching up to three EXP3000s, a total of 96 TB of storage capacity
DS3200	• 3 Gbps Serial Attached SCSI (SAS) interface technology • Easy to deploy and manage with the DS3000 Storage Manager • Scalable to 24 TB of storage capacity with 2 TB hot-swappable Serial ATA (SATA) disks
EXP3000	• 3 Gbps SAS interface technology • Support for up to 24 TB of storage in a single enclosure • Support for up to 96 TB in a cascaded configuration with MegaRAID 8480 adapter • Powerful and comprehensive management and configuration tools included
EXP24	• Supports up to 7.2 TB of data • Supports up to 24 U320 SCSI drives in four groups of six drives or two groups of 12 drives

Operating Systems and Copy Services Platform Coverage

	DS3950/DS5020/DS5100/DS5300	DS6800	DS8100	DS8300	DS8700	XIV
Windows NT®	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror					
Windows 2000	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
Windows Server 2003	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
NetWare	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	
Linux[1]	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
AIX	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
VMware	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
Dynix						
HP-UX	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
Solaris	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and synchronous mirroring, thin provisioning, data migration
IRIX	*	FlashCopy, Metro Mirror, Global Mirror, Global Copy				
Tru64 UNIX	*	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	
OpenVMS		FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	
z/OS, OS/390, TPF		FlashCopy, Metro Mirror, Global Mirror, Global Copy, as target for z/OS Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Copy	
i5/OS		FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	
Apple Macintosh OSX		FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, FlashCopy SE, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	snapshot, asynchronous and nsynchronous mirroring, thin provisioning, data migration

* Request via RPQ process

1: Linux distribution support varies per product. Refer to product-specific information for current support. This chart reflects IBM's current intentions. Changes may occur without notice. Consult the appropriate Web pages for support details.

Yes **No**

Operating Systems and Copy Services Platform Coverage

	EXP3000/MegaRAID	DS3200/DS3300/DS3400	DS4700 Express
Windows NT			FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Windows 2000			FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Windows Server 2003		FlashCopy, VolumeCopy	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
NetWare		FlashCopy, VolumeCopy	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Linux[1]		FlashCopy, VolumeCopy	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
AIX		FlashCopy, VolumeCopy	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
VMware			FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Dynix			
HP-UX			FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Solaris			FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
IRIX			*
Tru64 UNIX			*
OpenVMS			
z/OS, OS/390			
i5/OS			
DG/UX			

* Request via RPQ process

1: Linux distribution support varies per product. Refer to product-specific information for current support. This chart reflects IBM's current intentions. Changes may occur without notice. Consult the appropriate Web pages for support details.

2: Metro Mirror is synchronous replication; Global Mirror is asynchronous replication; Metro/Global Mirror is two- or three-site cascading asynchronous replication; Global Copy is extended distance copying.

3: VolumeCopy, Metro Mirror, Global Copy and Global Mirror require turbo option.

Yes **No**

Data Archiving and Retention Systems

	DR550
Product	IBM System Storage DR550
Machine/model	2233 DR1
Platform support	All IBM systems platforms and other vendor platforms
Host connectivity	2 port Gigabit Copper or Fibre Ethernet (upgrades available)
Software	IBM System Storage Archive Manager (SSAM)
Archiving application interface	SSAM application programming interface (API) v5.5.0 or DR550 File System Gateway
Controller	Single System p5® POWER5+™
Operating system	IBM AIX, Version 5.3
Management interface	IBM Director 5.20.2
Systems supported	External Tape and Optical
Backup sw	Included in SSAM
Backup hw	External tape
Copy services	N/A
Encryption	Disk or tape, 128-bit AES or 56-bit DES encryption technology
RAID support	5 and 6
Capacity (min, max)	.88 TB, 48.8 TB
Drive support	1 TB 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 nonerasable, nonrewritable archival storage; prevents deletion or alteration of information stored on the system
- Support multiple storage tiers for long-term archiving (disk and tape) 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
- Supports 48.8 TB raw physical capacity and petabytes of storage with tape attached
- Offer chronological and event-based data retention
- 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

IBM Information Archive: The Next-generation Information Retention Solution

Highlights

- Universal storage repository for all types of content, structured and unstructured, compliant and noncompliant
- Provides up to three customizable information collections per IBM Information Archive
- Provides up to three information protection levels offering maximum flexibility
- Stores information via multiple access methods
- Scales up to 304 TB (raw capacity)
- Maintains data integrity until deletion is permitted by retention policy and information protection level
- Enhanced security and protection with data encryption option
- Helps optimize storage consumption with data deduplication and compression features
- Offers low TCO by allowing use of mixed media (disk and tape)
- Increases data security through patent-pending enhanced tamper protection feature

Secure, scalable, cost-effective information retention solution.

IBM Information Archive is the next-generation information retention solution designed as a universal archiving repository for all types of content to help midsize and enterprise clients reduce cost, manage risk and address clients complete information retention needs—business, legal, or regulatory.

This highly versatile, Smart Business System can help minimize your business risk and support regulatory compliance by providing a secure and protected storage repository.

The IBM Information Archive can help reduce the need and expense for primary storage by enabling archiving applications to move less-active but business vital information off the primary storage tier to cost-effective and scalable “archive” storage tier, to help reduce information infrastructure costs immediately.

In addition, the IBM Information Archive enforces policies across a single repository that may combine both disk and multiple tape systems that scale to petabytes in size. This combination can provide exceptionally low overall cost of ownership.

IBM System Storage N series

All N series systems provide the following features:	
Storage controllers/filers	Active/Active with automatic failover to secondary system
Fibre channel (FC) external disk drive support	4-Gbps Fibre Channel: 300 GB, 450 GB, 600 GB, 15,000 rpm 2-Gbps Fibre Channel: 300 GB, 450 GB, 600 GB, 15,000 rpm
SATA external disk drive support	SATA: 500 GB, 7,200 rpm, 1 TB, 2 TB SAS external drive support for N3400, N3600, N6000 and N7000; SAS: 300 GB, 450 GB, 600 GB, 15,000 rpm
SAS disk drive support (N3300, N3400, N3600)	300 GB 15K, 450 GB 15K, 600 GB
Host connectivity and platform support	The N series systems support a multitude of host attachment capabilities via FCP, CIFS, NFS and iSCSI protocols. See product "N series Interoperability Matrix" for more information
Network protocol support	NFS V2/V3/V4 over UDP or TCP, PCNFSD V1/V2 for (PC) NFS client authentication, Microsoft CIFS, iSCSI, FCP, VLD, HTTP 1.0, HTTP 1.1 Virtual Host
Other protocol support	SNMP, NDMP, LDAP, NIS, DNS
Operating system	Data ONTAP
Data protection	Double Parity RAID, Snapshot, SnapRestore, SnapMirror, SyncMirror, SnapVault, Open System Snap Vault, MetroCluster, Protection Manager

All N series systems provide the following features:	
Redundancy/ high availability	CompactFlash dual redundant hot-plug integrated cooling fans, hot-swappable auto-ranging power supplies, clustered filers, hot-swappable disk bays
Backup	External tape (SCSI or Fibre Channel)
RAID levels	RAID 4, RAID-DP (double parity)
System management/ Storage management	FilerView, SecureAdmin, SNMP, Operations Manager, Protection Manager, Industry-standard NDMP protocols
Standard software features	Snapshot, FlexVol, FlexShare, Integrated Automatic RAID Manager, Fast Boot, NIS, DNS, SNMP, FilerView, NDMP, LDAP, iSCSI, AutoSupport, SyncMirror, SnapMover, FTP protocol feature, SecureAdmin, Disk Sanitization, System Manager
Optional software features	CIFS protocol, Clustered Failover, Data ONTAP, Disk Sanitization. FCP protocol, FlexCache, FlexClone, FlexShare, FlexScale, FlexVol, FTP protocol, HTTP protocol, iSCSI protocol, MetroCluster, MultiStore, NDMP protocol, NearStore® (near-line), NFS protocol, Open Systems SnapVault (OSSV), Operations Manager Core and SRM License, Protection Manager, Provisioning Manager, System Manager, RAID 4, RAID-DP, SecureAdmin, Single Mailbox Recovery for Exchange (SMBR), SnapDrive, SnapLock Enterprise, SnapManager for Exchange, SnapManager for Oracle, SnapManager for SAP SnapManager for SQL Server, SnapManager for Microsoft Office SharePoint Server, SnapManager for Hyper-V, SnapMirror, SnapMover, SnapRestore, Snapshot, SnapValidator, SnapVault, SyncMirror, Performance Acceleration Module, N3000 Software Packs, N6000 Software Bundles and N7000 High Performance Bundle

	N3000 Express series			N6000 series*			N7000 series*
	N3300 Express	**N3400 Express**	**N3600 Express**	**N6040**	**N6060**	**N6070**	**N7900**
Model	2859-A10 (single) 2859-A20 (clustered)	2859-A11 (single) 2859-A21 (clustered)	2862-A20 (clustered)	2858-A10 (single) 2858-A20 (clustered)	2858-A22 (clustered)	2858-A21 (clustered)	2867-A21 (clustered)
Maximum raw capacity	68 TB	136 TB	104 TB	420 TB	672 TB	840 TB	1176 TB
Integrated Onboard I/O ports**	Up to four (4) 4 Gbps Fibre Channel ports Up to four (4) 1 GbE ports	Up to four (4) 4 Gbps Fibre Channel ports Up to eight (8) 1 GbE ports Up to two (2) SAS ports	Up to four (4) 4 Gbps Fibre Channel ports Up to four (4) 1 GbE ports	Eight 4 Gbps FC Four 1 Gbps Ethernet	Eight 4 Gbps FC Four 1 Gbps Ethernet	Eight 4 Gbps FC Four1 Gbps Ethernet	Sixteen 4 Gbps FC Twelve 1 Gbps Ethernet
PCI expansion slots for additional FC HBAs or GbE NIC cards**	0	0	2	8	8	8	16
NVRAM**	256 MB	256 MB	512 MB	1 GB	4 GB	4 GB	1 GB
Random Access Memory**	2 GB	2 GB	4 GB	8 GB	16 GB	32 GB	64 GB

* N6000 and N7000 series Gateways are available ordered through a gateway feature code (9551).
**Systems are based on dual clustered storage controllers. Divide all numbers by one-half if a single storage controller system is ordered.

N series Highlights

- **Unified storage architecture**—provides a single storage platform to support heterogeneous, multiprotocol storage requirements with the capability of simultaneously handling both Block I/O (with FCP or iSCSI protocol) and File I/O (with CIFS, NFS, HTTP, FTP, FCoE) application needs
- **Application-aware software**—SnapManager software provides host-based data management of N series storage for databases and business applications. Simplifies application-consistent policy-based automation for data protection and disaster recover. Snapshot copies and automates error-free data restores and enables application-aware disaster recovery
- **Thin Provisioning**—allows applications and users to get more space dynamically and nondisruptively without IT staff intervention
- **Ease of installation**—offers installation tools designed to help simplify installation and setup
- **Increased access**—allows heterogeneous access to IP attached storage and Fibre Channel attached storage subsystems
- **Operating system**—optimized and finely tuned for storing and sharing data assets, designing to enable greater efficiency within your organization and help lower TCO through improved efficiency and productivity
- **Flexibility**—enables cross-platform data access for Microsoft Windows, UNIX and Linux environments that can help reduce network complexity and expense, and allow data to be shared across the organization
- **Network Attached Storage (NAS)**—supports Network File System (NFS), Common Internet File System (CIFS) protocols for attachment to Microsoft Windows, UNIX and Linux systems
- **IP SAN**—supports Internet Small Computer System Interface (iSCSI) protocols for IP SAN attached to a multitude of host servers including Microsoft Windows, Linux, and UNIX systems
- **FC SAN**—supports Fibre Channel protocols (FCP) for accommodating attachment and participation in fibre channel SAN environments
- **FCoE**—supports Fibre Channel flow over Ethernet networks
- **Scalability**—supports nondisruptive capacity increases as well as thin-provisioning (dynamically allow the increase and decrease of user capacity assignments). Allows you to scale your storage infrastructure to keep pace with company growth
- **Designed to maintain availability** and productivity during upgrades
- **Manageability**—includes integrated system diagnostics and management tools, which are designed to help minimize downtime
- **Redundancy**—several redundancy and hot-swappable features provide the highest system availability characteristics
- **Copy Services**—provides extensive outboard services that help recover data in disaster recovery environments. SnapMirror provides one-to-one, one-to-many and many-to-one mirroring over Fibre Channel or IP infrastructures
- **NearStore (near-line) feature**—SATA drive technology enables online and quick access to archived and nonintensive transactional data
- **Advanced Single Instance Storage (A-SIS)**—provides block-level deduplication of data stored in NearStore volumes
- **Compliance and data retention**—software and hardware features that offer non-erasable and nonrewritable data protection to meet the industry's highest regulatory requirements for retaining company data assets

NOTES:
A single controller can be easily upgraded to a dual controller system as your computing needs increase. The dual controller is a fully redundant system and is designed to provide failover and failback capabilities.
The N series Interoperability Matrix can be found at the following Web site:
ibm.com/storage/network/interophome.html

IBM System Storage Multilevel Grid Access Manager Software (Grid Access Manager Software)

Function and Value	Highlights
Grid Access Manager Software is built on an open, high-performance grid architecture that delivers data protection, information lifecycle management, simplified storage management and multisite data access based on open standards. Grid Access Manager Software enables customers with single or multiple sites and with fixed content/reference data storage requirements to improve storage utilization and investment across sites by way of an enterprise-wide, fault-tolerant storage grid with real-time failover capabilities. Grid Access Manager Software can help protect enterprise data through automated replication, lifecycle management and digital signature functionality.	• The potential benefits derived from these features can help deliver important cost savings and operational efficiencies, including: Simplified management and improved storage utilization, with excellent performance; Data protection and improved business continuity; Support for global access, multisite operation.

Disk Storage Virtualization

Reduce storage complexity and lower costs through virtualization. IBM System Storage SAN Volume Controller keeps it simple.

Product	Function and Value	Highlights
IBM System Storage SAN Volume Controller (SVC) and IBM System Storage SAN Volume Controller Entry Edition (SVC EE)	SAN Volume Controller is a disk storage virtualization system that is designed to help businesses improve storage utilization and reduce the costs associated with disk storage. SAN Volume Controller is designed to pool storage volumes from IBM and non-IBM storage systems into a reservoir of capacity for centralized management. SAN Volume Controller is also designed to hide the boundaries among disk systems, which helps simplify management and enables customers to focus on managing storage as a resource to meet business requirements and not as a set of boxes.	• **IBM System Storage SAN Volume Controller Entry Edition:** SVC EE has all the functional richness of the full SVC product but is packaged and priced to meet the requirements of small and midsize business (SMB) customers. SVC Entry Edition supports storage configurations containing up to 250 disk drives and is designed to grow smoothly with your business. • **Innovative Solid-State Device (SSD) support:** The SVC scalable architecture is designed to deliver outstanding performance with SSDs for critical applications, up to 800,000 read I/Os per second. SVC helps move critical data to and from SSDs as needed without application disruption. • **iSCSI server attachment support:** iSCSI attachment avoids the cost of fibre channel host bus adapters (HBAs) in servers and reduces the need for fibre channel switches. This capability may be particularly attractive for IBM BladeCenter server configurations. • **Improved storage utilization:** By pooling capacity, storage administrators can make better use of the storage capacity. Improvements of up to 30 percent in storage utilization have been seen in SVC customers. SVC's Space-Efficient Virtual Disks function helps to improve storage utilization even more because it is designed to use physical storage capacity only when data is written to virtual disks instead of dedicating physical capacity to the entire defined virtual capacity. This capability is also referred to as "thin provisioning." • **Reduced storage growth:** SVC helps reduce storage growth; customers have seen reductions in growth of up to 20 percent. • **Simplified management:** SVC provides a single interface for managing all types of supported storage. As a result, storage administration is made simpler and storage administrators can become more productive. Productivity improvements of up to two times have been seen in SVC customers. • **Storage virtualization support:** Storage virtualization with SVC enables customers to obtain maximum benefit from virtualized infrastructures. • **Tiered storage:** SVC makes it much easier to implement tiered storage, which enables a mix of different types of storage to be used, including lower cost storage helping to reduce overall costs. Because SVC also has cache, it can improve the performance of data stored on lower cost storage, enabling such storage to be used more widely in a data center, further reducing costs. • **Replication functions:** SVC implements a common set of replication functions (IBM FlashCopy, Metro Mirror and Global Mirror) that can be applied to all supported storage. This ability can help enhance the value of lower cost storage that may have more basic functionality and helps improve choice when selecting storage, which can be limited by proprietary replication functions. The Space-Efficient FlashCopy function helps to dramatically reduce the amount of storage needed for FlashCopy replicas. Savings of 75 percent or more can be expected. • **Improved availability:** SVC makes it possible to move data among supported disk systems without disrupting applications. As a result, common data center events such as moving data at lease expiration or rebalancing loads across disk systems no longer require costly outages. The Virtual Disk Mirroring function helps to protect against failure of disk systems or disruptive maintenance activities to disk systems.

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 FlashCopy Manager

IBM Tivoli Storage FlashCopy Manager software enables organizations to perform and manage frequent, near-instant, nondisruptive, application-aware backups and restores, leveraging advanced FlashCopy snapshot technologies in IBM storage systems. IBM Tivoli Storage FlashCopy Manager helps deliver the highest levels of protection for mission-critical IBM DB2® UDB, SAP, Oracle, Microsoft Exchange and Microsoft SQL Server applications. IBM Tivoli Storage FlashCopy Manager is an easy-to-install package that seamlessly integrates with: IBM System Storage DS8000, SAN Volume Controller and XIV on AIX and Windows; and DS5000, DS4000® and DS3000, as well as other VSS-capable storage systems on Windows. IBM Tivoli Storage FlashCopy Manager also integrates with IBM Tivoli Storage Manager to provide the full range of long-term data management and availability capabilities.

IBM Tivoli Storage Manager 6

Function and Value

IBM Tivoli Storage Manager 6 is a family of products that helps businesses manage and control the "information tidal wave" by delivering a single point of control and administration for storage management needs. This advanced, highly scalable product helps increase the efficiency of your IT operations and helps cut costs related to storage management by providing a wide range of data protection, recovery management, movement, reporting and monitoring capabilities using policy-based automation. 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.

Highlights

- 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
- Designed to consolidate the servers and storage needed to protect and retain data; reduce administration time; perform backup and restore tasks faster and more often; and improve application availability and disaster recovery planning
- Designed to help reduce storage capacity and bandwidth requirements using built-in source and target-side data deduplication

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 FastBack

IBM Tivoli Storage Manager FastBack is an advanced continuous data protection and near-instant recovery software solution for business-critical Windows and Linux servers, remote offices and small- to midsized enterprises. Tivoli Storage Manager FastBack helps clients reduce the amount of data at risk between backups to almost zero, and reduces the time to recover from almost any data loss to just seconds. The base Tivoli Storage Manager FastBack product includes nondisruptive block-level local backup and near-instant recovery; built-in data deduplication to help reduce storage and bandwidth costs; plus highly efficient replication for off-site disaster recovery and business resilience.

IBM Tivoli Storage Manager FastBack for Microsoft Exchange

Fast and easy recovery of individual e-mail objects from a Microsoft Exchange Database (EDB), including messages, attachments, contacts, calendar entries, tasks, notes and journal entries. Works with either Tivoli Storage Manager FastBack or Tivoli Storage Manager for Mail.

IBM Tivoli Storage Manager FastBack for Bare Machine Recovery

Restores the operating system volume of Microsoft Windows servers, within an hour, to similar, dissimilar or Virtual server platforms. Used in conjunction with the near-instant data volume restore capabilities of Tivoli Storage Manager FastBack, an entire server workload can be moved and operational, anywhere in the organization, to recover from almost any type of disaster, in about an hour.

IBM Tivoli Storage Manager FastBack Center

IBM Tivoli Storage Manager FastBack Center is a convenient, cost-effective, easy-to-order and deploy combination of Tivoli Storage Manager FastBack, Tivoli Storage Manager FastBack for Microsoft Exchange and Tivoli Storage Manager FastBack for Bare Machine Recovery.

IBM Tivoli Storage Manager FastBack for Workstations

IBM Tivoli Storage Manager FastBack for Workstations is an automated, continuous data protection and recovery software solution for desktop and laptop computers, with central management for thousands of systems, and integration with other Tivoli Storage Management offerings.

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. New in version 6 is the ability to restore individual e-mail objects and mailboxes in Microsoft Exchange environments.

IBM Tivoli Storage Manager for Microsoft SharePoint

Tivoli Storage Manager 6 for Microsoft SharePoint can offer you the peace of mind that your SharePoint content can be protected and quickly restored, with granularity. Tivoli Storage Manager for Microsoft SharePoint V6.1 extends that level of protection with new features that can help you automatically classify and prioritize your SharePoint content based on its business importance.

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 including Bare Machine Recovery, and can be executed from either the AIX command line or by using the SMIT menu interface.

Tivoli Storage Manager HSM for Windows

Tivoli Storage Manager HSM for Windows helps you get control of, and efficiently manage, data growth and its associated storage costs by providing space management for Microsoft Windows NTFS file systems. Tivoli Storage Manager HSM for Windows has the capability to automatically migrate selected files, based on established policy, to less expensive storage devices. It accomplishes this while still preserving file accessibility to the end user.

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. Cristie also offers TBMR, which enables the bare machine recovery of protected systems directly from the Tivoli Storage Manager data repository, without the need for a separate backup solution.

IBM Tivoli Storage Productivity Center 4

Product	Function and Value	Highlights
IBM Tivoli Storage Productivity Center Basic Edition	IBM Tivoli Storage 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 Tivoli Storage Productivity Center for Disk	In a pooled or virtualized SAN environment, multiple devices work together to create a storage solution. IBM Tivoli Storage 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 Tivoli Storage Productivity Center for Data	IBM Tivoli Storage 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 Tivoli Storage Productivity Center 4

Product	Function and Value	Highlights
IBM Tivoli Storage Productivity Center for Replication	Tivoli Storage 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. Tivoli Storage 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 Tivoli Storage 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 System Storage Productivity Center	An integrated offering that provides a consolidated focal point for managing IBM storage products as well as managing mixed-vendor storage environments. SSPC provides enhancements to daily storage administration by making available a broader set of configuration functions.	• Combines the power of a customized IBM System x server with preinstalled storage software that represents a significant point of centralized management. SSPC enhances several rudimentary device utilities for easier, more intuitive, context-based administration and, on the whole, lowers resource overhead.

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 while reducing management costs.

IBM Global Services, as the leading data storage services provider, brings best practices from its thousands of customer engagements to work for your organization, implementing and integrating new solutions and technologies that meet 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 of offering successful services for open and mainframe storage, data migration, installation and support services for IBM and non-IBM environments, including these examples:
- IBM Storage Strategy Assessment assists with the vision and strategy, assessment, architecture and conceptual designs to help customers optimize their storage infrastructure.
- 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

Financing that supports the entire technology life cycle

IBM Global Financing can help you accelerate your acquisitions of the latest technology and services, and help make your IT and information infrastructure projects more affordable by providing competitive, customized financing of your storage, server, PC, software and services investments. In addition, IBM Global Financing can enable you to reduce the risk of technology obsolescence risk and handle planning for disposal and replacement of your IT hardware assets. With single-source, customized, competitive financing of the entire life cycle of your IT equipment, IBM Global Financing makes it easier to manage both the up-front investment and the ongoing operating costs.

From acquisition through daily use, buyback and disposal, our end-to-end offerings form the foundation of a cohesive technology management strategy, improving asset management and increasing your flexibility for both small and large IT projects.

Offerings, rates, terms and availability may vary by country. Contact your local IBM representative or visit the Web at **ibm.com**/financing

IBM STG Lab Services

IBM STG Lab Services offers 3 updated Information Infrastructure services:

Storage Energy Analysis

Information Infrastructure Storage Optimization Workshop

Information Infrastructure Storage Optimization Study

Storage Energy Analysis

The Storage Energy Analysis review provides a financial business case for moving forward with IBM products that address the typical issues facing the CIO including controlling storage growth and reducing infrastructure costs.

The review requires that the client gather and return data to an IBM STG Lab Services staff member. Once the data is submitted, it will be analyzed and used as input into a business model that will predict future storage, power, cooling and facility space requirements. IBM consultants work remotely, and the engagement takes about a week.

http://stgls01.rchland.ibm.com:81/toasted.nsf/services/AGSYS019

Information Infrastructure Storage Optimization Workshop

This offering from STG Lab Services assesses the current state of a client's IT storage infrastructure and identifies alternative approaches for optimizing the storage environment using best practices and "green" principles for reducing the storage footprint.

The workshop begins with the client gathering data and continues with a one or two day onsite workshop (depending on scope) with client participants who are integral to storage use and management. The workshop team discusses storage related issues and concerns and develops recommendations to address them. The IBM team then creates a report captures the issues and concerns, offers recommendations, and provides a high level business case that compares business as usual storage growth and management against an optimized storage infrastructure using the recommendations developed in the workshop. This engagement takes 2 to 4 weeks.

http://stgls01.rchland.ibm.com:81/toasted.nsf/services/AGSYS018

Information Infrastructure Storage Optimization Study

The Storage Optimization Study is more detailed than the Workshop. Like the Workshop, the Optimization Study assesses the current state of a client's IT storage infrastructure and identifies alternative approaches for optimizing the storage environment using best practices and "green" principles for reducing the storage footprint.

The assessment begins with onsite client interviews to develop a deeper understanding of the issues and concerns regarding storage. Initial findings are reviewed with the client executive sponsor and then the team goes offsite to analyze data, develop recommendations and create a report that contains the following elements: a review of the current storage infrastructure, current storage environment issues and concerns, recommendations to address the issues, and a business case that compares business-as-usual with an optimized storage infrastructure. This engagement takes 6 to 8 weeks.

http://stgls01.rchland.ibm.com:81/toasted.nsf/services/AGSYS017

ibm.com/storage

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