

## IBM System Storage Product Guide



### **Cost effective and reliable access to your information**

People need access to information so they can make knowledgeable decisions that lead to growth and increased profitability. Your challenge is making sure that information is always available, when and where it is needed, to fuel the cycle of creative thinking that leads to innovation.

IBM System Storage™ solutions help you more successfully support your business by creating IT environments that:

- Protect information assets and enable data sharing and collaboration across your enterprise in real time
- More easily handle changing business requirements
- Manage information effectively by matching the value of your information to how it is stored and accessed at each point in its life cycle

Only IBM delivers the depth and breadth of intelligent storage solutions and expertise to help you reliably bring information to people in a cost-effective way.

### **Empower your people to innovate and make more informed business decisions**

Innovate faster and help ensure that the information that fuels creative thinking and decision making is available in real time with IBM System Storage solutions.

- Automate and simplify IT operations with revolutionary IBM System Storage solutions—so you can focus on your business and spend less time managing your infrastructure
- Increase your return on people and create an environment for competitive advantage by capitalizing on data sharing and collaboration across the enterprise in real time with IBM System Storage offerings
- Fuel your innovation engine with complete solutions that leverage IBM's unmatched expertise, strong synergy between servers and storage, award-winning storage software and extensive partner network

### **Get the most value from your information**

Protect and fully leverage your information assets by using intelligent management solutions from IBM—solutions that enable your IT staff to implement the most cost-effective storage options based on the value and service level of the information at each point in its lifecycle.

- Align your storage investment with the value of your information using comprehensive tiered storage, policy-based automation and intelligent information management solutions from IBM
- Confidently protect your strategic information assets and efficiently comply with regulatory and security requirements with the unrivaled breadth of storage solutions from IBM

### **Make your business more responsive with an information-centric IT environment**

Manage and adapt to growing and changing business needs with an IT environment that makes critical information always available—without disruption.

- Keep your business running with continuous access to information through industry-leading business continuity solutions from IBM System Storage
- Rapidly adapt to evolving business needs by creating an open, flexible, on demand infrastructure that scales as you grow—without disrupting ongoing operations—using proven IBM System Storage solutions
- Optimize and protect your IT investment with marketplace-leading virtualization capabilities, superior multi-vendor interoperability and cost-effective storage solutions from IBM

## Entry SAN switches for easy-to-use SMB solutions

<b>IBM System Storage SAN100-2 switch (6918-10X)</b>	<ul style="list-style-type: none"> <li>Small and capable; an easy-to-use fabric switch that only consumes 1U and half rack width in a standard rack. This 4 Gbps switch has 10 auto-sensing, auto-configuring ports. It comes in a complete package with four SFPs and SANsurfer Express software, which enables easy switch installation, manageability and fabric scaling.</li> </ul>
<b>IBM TotalStorage® SAN16B-2 switch (2005-B16)</b> <b>IBM TotalStorage SAN16B-2 Express Model switch (2005-16B)</b>	<ul style="list-style-type: none"> <li>Provides high performance, scalable and simple-to-use fabric switch with 8, 12 or 16 port operating at 1, 2 and 4 Gigabits per second (Gbps) fabric for servers running Microsoft® Windows®, UNIX®, Linux®, NetWare® and IBM OS/400® operating systems, server clustering, infrastructure simplification and business continuity solutions. The SAN16B-2 includes Advanced Web Tools, an easy-to-use configuration wizard designed to simplify setup and ongoing maintenance for novice users.</li> </ul>
<b>IBM TotalStorage SAN16M-2 switch (2026-416)</b> <b>IBM TotalStorage SAN16M-2 Express Model switch (2026-16E)</b>	<ul style="list-style-type: none"> <li>Provides high performance, scalable and simple-to-use fabric with 8, 12 or 16 port operating at 1, 2 and 4 Gbps fabric for servers running Microsoft Windows, UNIX, Linux, NetWare and OS/400 operating systems, server clustering, infrastructure simplification and business continuity solutions. The base switch includes dual power, zoning, EFCM Basic management and an easy-to-use installation wizard designed to simplify setup and ongoing maintenance for novice users.</li> </ul>

## Midrange SAN switches for scalable SMB and enterprise solutions

<b>IBM TotalStorage SAN32B-2 switch (2005-B32)</b> <b>IBM TotalStorage SAN32B-2 Express Model switch (2005-32B)</b>	<ul style="list-style-type: none"> <li>Provides high performance, scalable and simple-to-use fabric switch with 16, 24 or 32 port operating at 1, 2 and 4 Gbps fabric for servers running Microsoft Windows, UNIX, Linux, NetWare and OS/400 operating systems, server clustering, infrastructure simplification and business continuity solutions. The SAN16B-2 includes dual replaceable power supplies, Advanced Zoning, Fabric Watch and Web Tools.</li> </ul>
<b>IBM TotalStorage SAN32M-2 switch (2026-432)</b> <b>IBM TotalStorage SAN32M-2 Express Model switch (2026-32E)</b>	<ul style="list-style-type: none"> <li>Provides high performance, scalable and simple-to-use fabric with 16, 24 or 32 port operating at 1, 2 and 4 Gbps fabric for servers running Microsoft Windows, UNIX, Linux, NetWare and OS/400 operating systems, server clustering, infrastructure simplification and business continuity solutions. The base switch includes dual power, zoning, EFCM Basic management and an easy-to-use installation wizard designed to simplify setup and ongoing maintenance for novice users.</li> </ul>
<b>IBM TotalStorage SAN64B-2 switch (2005-B64)</b>	<ul style="list-style-type: none"> <li>Provides high performance, scalable and simple-to-use fabric switch with 32, 48 or 64 port operating at 1, 2 and 4 Gbps fabric for servers running Microsoft Windows, UNIX, Linux, NetWare and OS/400 operating systems, server clustering, infrastructure simplification and business continuity solutions. The SAN64B-2 includes dual replaceable power supplies, Advanced Zoning, Fabric Watch and Web Tools.</li> </ul>
<b>Cisco® MDS 9124 for IBM System Storage (2053-424)</b>	<ul style="list-style-type: none"> <li>Provides high performance, scalable and simple-to-use fabric switch with 8, 16 or 24 ports operating at 1, 2 and 4 Gbps for servers running Microsoft Windows, UNIX, Linux, NetWare and 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.</li> </ul>
<b>Cisco MDS 9216i for IBM System Storage (2054-D1H)</b>	<ul style="list-style-type: none"> <li>Provides SAN switching for Intel processor-based servers, System i™, System p™ and IBM System z™. Midrange 14-port, 1 and 2 Gbps Fibre Channel and 2-port Gigabit Ethernet model with; one feature slot for 1, 2, 4 Gbps or 10 Gbps Fibre Channel line card and IBM FICON® switch for Windows, Linux, UNIX and IBM z/OS® server, includes one module slot, Virtual SAN and Cisco Fabric Manager.</li> </ul>
<b>Cisco MDS 9216A for IBM System Storage (2054-D1A)</b>	<ul style="list-style-type: none"> <li>Provides SAN switching for Intel processor-based servers, System i, System p and IBM System z. Midrange 16-port, 1 and 2 Gbps Fibre Channel model with; one feature slot for 1, 2, 4 Gbps or 10 Gbps Fibre Channel line card and IBM FICON switch for Windows, Linux, UNIX and IBM z/OS server, includes one module slot, Virtual SAN and Cisco Fabric Manager.</li> </ul>

## Enterprise SAN directors for high availability and scalability enterprise solutions

<b>IBM TotalStorage SAN256B director (2109-M48)</b>	<ul style="list-style-type: none"> <li>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 256 ports and contains two control processors for high availability and from one to eight blades, each of which contains either 16 or 32 ports. Each port can support 1, 2 or 4 Gbps link speeds. Standard features including Advanced Inter-Switch Link (ISL) Trunking, Web Tools, Advanced Zoning, Fabric Watch, Performance Monitoring and Fabric Access Layer (APL).</li> </ul>
<b>IBM TotalStorage SAN140M director (2027-140)</b>	<ul style="list-style-type: none"> <li>High availability enterprise SAN director for Intel processor-based servers, System i, System p and System z. Provides 16 to 140 port, scalable in 4-port increments, 1, 2 and 4 Gbps Fibre Channel and FICON switch for Windows, Linux, UNIX and z/OS servers.</li> <li>Provides 10 Gbps backbone links for high performance continuity solutions.</li> </ul>
<b>IBM TotalStorage SAN256M director (2027-256)</b>	<ul style="list-style-type: none"> <li>High availability enterprise SAN director for Intel processor-based servers, System i, System p, IBM System x™ and System z. Provides 64 to 256 port, scalable in 32-port increments, 1, 2 and 4 Gbps Fibre Channel and FICON director with 10 Gbps backbone links for Windows, Linux, UNIX and z/OS servers. Includes Director FlexPar capability for up to four logical partitions with separate fabric services.</li> </ul>
<b>Cisco MDS 9506 for IBM System Storage (2054-E04)</b>	<ul style="list-style-type: none"> <li>High availability enterprise SAN director for Intel processor-based servers, System i, System p and System z. Provides 12 to 96 port (12-, 24- and 48-port modules) 1, 2 and 4 Gbps Fibre Channel and FICON switch for Windows, Linux, UNIX and z/OS servers.</li> </ul>
<b>Cisco MDS 9509 for IBM System Storage (2054-E07)</b>	<ul style="list-style-type: none"> <li>High availability enterprise SAN director for Intel processor-based servers, System i, System p and System z. Provides 12 to 236 port (12-, 24- and 48-port modules) 1, 2 and 4 Gbps Fibre Channel and FICON switch for Windows, Linux, UNIX and z/OS servers.</li> </ul>
<b>Cisco MDS 9513 (2054-E11)</b>	<ul style="list-style-type: none"> <li>High availability enterprise SAN director for Intel processor-based servers, System i, System p and System z. Provides 12 to 528 ports with 12, 24 and/or 48 port 1, 2 and 4 Gbps switching modules with 10 Gbps backbone links for Windows, Linux, UNIX and z/OS servers.</li> </ul>
<b>IBM TotalStorage SAN16B-R SAN router (2109-R16)</b>	<ul style="list-style-type: none"> <li>Provides multiprotocol SAN routing for IBM System x, System i and System p. Router includes eight or sixteen 1 and 2 Gbps Fibre Channel and Gigabit Ethernet ports and iSCSI server connectivity. FC-FC Routing for SAN island consolidation and FCIP Tunneling Service for SAN extension of IP WAN infrastructures features.</li> </ul>
<b>IBM TotalStorage SAN18B-R SAN router (2005-R18)</b>	<ul style="list-style-type: none"> <li>Provides multiprotocol SAN routing for IBM System x, System i and System p. Router includes sixteen 1, 2 and 4 Gbps Fibre Channel and two Gigabit Ethernet ports. FC-FC Routing for SAN island consolidation and FCIP Tunneling Service for SAN extension of IP WAN infrastructures features.</li> </ul>
<b>IBM TotalStorage SAN04M-R SAN router (2027-R04)</b>	<ul style="list-style-type: none"> <li>Provides two Fibre Channel ports for attachment to existing SANs and two Gigabit Ethernet ports with Internet SCSI, iSCSI server connectivity for cost-effective infrastructure simplification solutions. Internet Fibre Channel Protocol (iFCP) features are offered for cost-effective high performance metro and global business continuity solutions.</li> </ul>
<b>IBM TotalStorage SAN16M-R SAN router (2027-R16)</b>	<ul style="list-style-type: none"> <li>Provides multiprotocol SAN routing with twelve 2 Gbps Fibre Channel ports for attachment to existing SANs and four Gigabit Ethernet ports with iSCSI server connectivity for enterprise infrastructure simplification solutions. SAN Routing features for SAN island consolidation and iFCP features for SAN extension over IP WAN infrastructures for enterprise business continuity solutions.</li> </ul>

## Entry-level/Midrange Tape Products



	Tape Drives		Tape Libraries	
	TS2230	3580	3573	3573
<b>Product Name</b>	3580	3580	TS3100	TS3200
<b>Machine model</b>	H3L	3580 L33 L23	3573 L2U L3S	3573 L4U
<b>Product strengths</b>	multiplatform support high performance high capacity	multiplatform support high performance high capacity	multiplatform support high performance high capacity	multiplatform support high performance high capacity
<b>Number of drives</b>	1	1	1	1-2
<b>Max number of cartridges</b>	1	1	24	44
<b>WORM/Encryption</b>	yes/no	yes/no	yes/no	yes/no
<b>Native capacity</b>	Gen 3: 400 GB	Gen 3: 400 GB Gen 2: 200 GB	up to 9.6 TB	up to 17.6 TB
<b>Typical capacity<sup>2</sup></b>	Gen 3: 400 GB	Gen 3: 400GB Gen 2: 200GB	up to 19.2 TB	up to 35.2 TB
<b>Native performance</b>	Gen 3: 60 MBps	Gen 3: 80 MBps Gen 2: 35 MBps	80 MBps	up to 160 MBps
<b>Interface</b>	160 MBps SCSI	4 Gbps FC 160 MBps SCSI	4 Gbps FC 160 MBps SCSI	4 Gbit FC 160 MBps SCSI
<b>Supported tape libraries</b>	NA	NA	NA	NA
<b>Platform support<sup>4</sup></b>	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
<b>Application support<sup>6</sup></b>	A, B, C, D, E, F, G, H, J, L, M, N <sup>7</sup>	A, B, C, D, E, F, G, H, J, L, M, N <sup>7</sup>	A, B, C, D, E, F, G, H, J, L, M, N <sup>7</sup>	A, B, C, D, E, F, G, H, J, L, M, N <sup>7</sup>
<b>Media</b>	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8
<b>Warranty period</b>	3 years <sup>5</sup>	3 years <sup>5</sup>	3 years <sup>5</sup>	3 years <sup>5</sup>
<b>Warranty type</b>	CRU	Onsite repair (24x7)	CRU	CRU



	Tape Drives		Tape Libraries	
	3588	3576	3576	3584
<b>Product Name</b>	TS1030	TS3310	TS3310	TS3500
<b>Machine model</b>	3588 F3B	3576 L5U E9U	3576 L5U E9U	3584 L53 D53
<b>Product strengths</b>	multiplatform support high performance high capacity	multiplatform support high performance high capacity	multiplatform support high performance high capacity	multiplatform support high performance high capacity
<b>Number of drives</b>	1	1-18	1-18	1-192
<b>Max number of cartridges</b>	NA	396	396	6,887 <sup>1</sup>
<b>WORM/Encryption</b>	yes/no	yes/no	yes/no	yes/no
<b>Native capacity</b>	400 GB 800 GB	up to 158.4 TB up to 316.8 TB	up to 158.4 TB up to 316.8 TB	up to 2.75 PB up to 5.5 PB
<b>Typical capacity<sup>2</sup></b>				
<b>Native performance</b>	80 MBps	14.4 GBps	14.4 GBps	up to 15.3 TBps
<b>Interface</b>	4 Gbit FC	4 Gbps FC SCSI-LVD	4 Gbps FC SCSI-LVD	4 Gbit FC SCSI-LVD
<b>Supported tape library</b>	TS3500	NA	NA	NA
<b>Platform support<sup>4</sup></b>	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
<b>Application support<sup>6</sup></b>	A, B, C, D, E, F, G, H, J, L <sup>7</sup>	A, B, C, D, E, F, G, H, J, L <sup>7</sup>	A, B, C, D, E, F, G, H, J, L <sup>7</sup>	A, B, C, D, E, F, G, H, J, L <sup>7</sup>
<b>Media</b>	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8
<b>Warranty period</b>	1 year	1 year	1 year	1 year
<b>Warranty type</b>	Onsite Repair (24x7)	Next Business Day (9x5)	Next Business Day (9x5)	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: 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®, Netfinity, IBM System i, IBM AS/400® and IBM System p servers. System z support for Linux only 5: Refer to [ibm.com/storage/tape/compatibility](http://ibm.com/storage/tape/compatibility) 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.

Enterprise Tape Products



	Tape Drive		Tape Controller		Tape Library		Tape Virtualization			
	3592		3592		3577		3584		Virtualization Engine	
Product Name	TS1120	TS1120	TS1120	TS1120	TS3400	TS3500	TS3500	TS3500	TS7510	TS7740
Machine model	3592 E05	3592 E05	3592 C06	3592 C06	3577 L5U	3584 L23	3584 D23	3584 D23	3954 CV5 (requires additional machine types and models)	3957 V06 (requires additional machine types and models)
Product strengths	multiplatform support high performance high capacity	multiplatform support high performance high capacity	System z attachment of TS1120 drives high performance	System z attachment of TS1120 drives high performance	compact format operates in library or autoloader mode	compact format operates in library or autoloader mode	multiplatform support advanced management scalable	multiplatform support advanced management scalable	reduces backup window reduces recovery time augments native tape	increases performance scalable reduces cost
Number of drives	1	1	1-12	1-12	1-2	1-2	1-192	1-192	up to 512 (1 node)* up to 1,024 (2 node)*	up to 128* up to 256* (GRID)
WORM/Encryption	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	yes/yes	no/yes**	no/no
Number of cartridges	NA	NA	NA	NA	18	18	6260*	6260*	up to 4,096 (1 node)* up to 8,192 (2 node)*	up to 500,000*
Native capacity	60/100 GB (JJ/JR media) 300/500 GB (JA/JW media) 700 GB (JB/JX media)	60/100 GB (JJ/JR media) 300/500 GB (JA/JW media) 700 GB (JB/JX media)	NA	NA	up to 1.8 TB up to 9 TB up to 12.6 TB	up to 1.8 TB up to 9 TB up to 12.6 TB	up to 626 TB up to 3.1 PB up to 4.3 PB	up to 626 TB up to 3.1 PB up to 4.3 PB	up to 23 TB (1 node) up to 46 TB (2 node)	up to 6 TB up to 12 TB (GRID)
Typical capacity <sup>1</sup>	180/300 GB with JJ/JR 900/1500 GB with JA/JW 2.1 TB with JB/JX	180/300 GB with JJ/JR 900/1500 GB with JA/JW 2.1 TB with JB/JX	NA	NA	up to 5.4 TB up to 27 TB up to 37.8 TB	up to 5.4 TB up to 27 TB up to 37.8 TB	up to 1.87 PB up to 9.3 PB up to 13.1 PB	up to 1.87 PB up to 9.3 PB up to 13.1 PB	up to 46 TB (1 node) up to 92 TB (2 node)	up to 18 TB up to 36 TB (GRID)
Native performance	up to 104 MBps	up to 104 MBps	Varies <sup>8</sup>	Varies <sup>8</sup>	up to 208 MBps	up to 208 MBps	up to 104 MBps	up to 104 MBps	up to 600 MBps	up to 600 MBps
Interface	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	4 Gbps FC	2 Gbps FC	4 Gbps FC
Supported tape library	TS3400, TS3500, 3494***	TS3400, TS3500, 3494***	TS3500, 3494***	TS3500, 3494***	NA	NA	NA	NA	TS3500, 3494***	TS3500
Platform support <sup>2</sup>	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 <sup>10</sup> ; Microsoft Windows; HP UX; Sun Solaris; Linux	System p, System i, System x, System z <sup>10</sup> ; 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 x, System z <sup>10</sup> , System i <sup>11</sup> ; Microsoft Windows; HP UX; Sun Solaris; Linux	System z
Application support <sup>3</sup>	A B C D E F G H J L'	A B C D E F G H J L'	A B C D E F G H J L'	A B C D E F G H J L'	A B C D E J	A B C D E J	See drive	See drive	A, B, D, E, F, H'	E
Media	Refer to Tape Media, page 8	Refer to Tape Media, page 8	NA	NA	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	Refer to Tape Media, page 8	NA	NA
Warranty period	1 year	1 year	1 year	1 year	1 year	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)	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

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 (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 [ibm.com/storage/tape/compatibility](http://ibm.com/storage/tape/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 RPO

Other Backup Tape Products



	Tape Drives				Optical	
	7206-336	7206-VXA	7207	7212	7210	3996
<b>Product Name</b>	DAT72 Tape Drive	VXA-2 Tape Drive	SLR60 Tape Drive	Device Enclosure*	DVD option	Library
<b>Machine model</b>	<b>7206</b> 336-DDS Gen 5	<b>7206</b> VX2, VX3	<b>7207</b> 330	<b>7212</b> 103	<b>7210</b> 030	<b>3996</b> 32, 80, 174
<b>Product strengths</b>	Cost-effective streaming tape drive	Low-cost, high-capacity VXA-2 technology	Backward read/write compatible with System i internal	Rack-mountable 2-drive enclosure utilizes only 1U (1.75") of space	External deskside	Large scale optical
<b>Number of drives</b>	1	1	1	1-2	1	up to 4
<b>Max number of cartridges</b>	1	1	1	2	1	up to 166
<b>Cartridge capacity</b> native/compressed	36/72 GB	VX2: 80/160 GB VX3: 160/320 GB	330: 30/60 GB	DVD: Variable (FC1103) VXA2: 80/160GB (FC 1104) DAT72:36/72GB (FC1105) SLR60:Variable (FC1107) SLR100:Variable (FC1108) HHLTO2:200/400GB (FC1109) XVA320 (FC1114)	4.9/9.4 GB	30 GB
<b>Max drive data rate</b> native/compressed	336: 3/6 MBps	VX2: 6/12 MBps VX3: 12/24 MBps	330: 4/8 MBps	DDS/DAT72: 3/6 MBps VXA: 12/24 MBps	NA	8 MBps
<b>Interface</b>	SCSI-2 F/W SE, LVD/SE	SCSI-3 ULTRA, LVD/SE, 160/320	SCSI-2 SE, ULTRA, LVD/SE, 160/320	SCSI-3 ULTRA, LVS/SE, 160/320	SCSI-3 ULTRA, LVD-SE, 160/320	LVD SCSI, 160/320
<b>Platform support</b> <sup>3</sup>	System p	System p, System i	System p, System i	System p, System i	System p, System i	System p, System i
<b>Media</b>	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
<b>Warranty period</b>	1 year	1 year	1 year	1 year	1 year	1 year
<b>Warranty type</b>	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	Onsite Repair (24x7)	CRU, Onsite Repair	Onsite Repair (24x7)

\* 7212-102 also offers DVD-ROM and DVD-RAM optical drives  
For most current information, visit: [ibm.com/servers/storage/tape/compatibility/index.html](http://ibm.com/servers/storage/tape/compatibility/index.html)

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: 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. 4: Also includes selected System x, System i and System p. System z support for Linux only 5: Refer to [ibm.com/storage/tape/contrib](http://ibm.com/storage/tape/contrib) for current application support 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	Native Capacity*	System z	System p	System i**	System x	Open Systems***
Entry tape products	3580 tape drive	80 MBps	800 GB	Yes	Yes	Yes	Yes	Yes
	TS3100 tape library	80 MBps	up to 17.6 TB	Yes	Yes	Yes	Yes	Yes
	TS3200 tape library	160 MBps	up to 35.2 TB	Yes	Yes	Yes	Yes	Yes
Midrange tape products	TS1030 tape drive	80 MBps	400 GB	Partial	Yes	Yes	Yes	Yes
	TS3310 tape library	up to 14.4 GBps	up to 316.8 TB	Partial	Yes	Yes	Yes	Yes
	TS3500 tape library	up to 15.5 TBps	up to 5.5 PB	Yes	Yes	Yes	Yes	Yes
Enterprise tape products	TS1120 tape drive	up to 104 MBps	2100 GB	Yes	Yes	Yes	Yes	Yes
	TS1120 tape controller	up to 230 MBps	NA	Yes	Yes	Yes	Yes	Yes
	TS3400 tape library	up to 208 MBps	up to 37.8 TB	Partial	Yes	Yes	Yes	Yes
	TS3500 tape library	up to 19.2 TBps	up to 13.1 PB	Yes	Yes	Yes	Yes	Yes
Tape Virtualization	TS7510	up to 600 MBps	up to 92 TB	Partial	Yes	Yes	Yes	Yes
	TS7740	up to 600 MBps	up to 36 TB	Yes	Yes	Yes	Yes	Yes
Other backup products	3996	up to 8 MBps	5.2 TB	Yes	Yes	Yes	Yes	Yes
	7206-336	up to 3 MBps	72 GB	Yes	Yes	Yes	Yes	Yes
	7206-VX2	up to 6 MBps	60 GB	Yes	Yes	Yes	Yes	Yes
	7206-VX3	up to 24 MBps	160 GB	Yes	Yes	Yes	Yes	Yes
	7207-330	up to 4 MBps	60 GB	Yes	Yes	Yes	Yes	Yes
	7212-103	up to 12 MBps	320 GB	Yes	Yes	Yes	Yes	Yes

\* Compressed; see [ibm.com/storage](http://ibm.com/storage) for specific capacities.

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

\*\*\* See [ibm.com/storage](http://ibm.com/storage) for specific open systems connectivity.



IBM Systems

Customer demand for lightning-fast communication and transactions has driven the need for universal commitment to e-business. No matter what industry, or what size company, success today hinges on building 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 System Storage Proven Program Helps Simplify Interoperability

Overview

The IBM System Storage Proven™ program has been designed on a simple premise: give customers the ability to select the best combination of interoperable storage technologies to help minimize their investment risk, increase business efficiency and expedite their infrastructure implementation.

The IBM System Storage Proven program is all about leveraging IBM storage with business applications, ISV and Business Partner software, and market leading hardware components which together deliver solutions that address today's client needs.

Customer Benefits

Pre-qualified configurations

Customers will be better able to identify a variety of pre-qualified, interoperable storage elements. By taking pre-qualified applications and hardware and combining them with IBM storage technology a client can have an easier time identifying solutions that address their storage needs.

IBM Business Partner Benefits

Potential for reduced sales cycle and integration issues

For IBM Business Partners, the IBM System Storage Proven program is intended to help reduce the sales cycle and integration issues, allowing more time for higher margin customization. Another added value for IBM Business Partners is the interoperability qualification program where companies work together with IBM, which can help supports their ability to develop and deliver products or solutions that interoperate with the broad portfolio of IBM System Storage products.

Please visit the System Storage Proven Web site at [ibm.com/storage/proven](http://ibm.com/storage/proven) to view more than five hundred available products and solutions from over three hundred participating companies to meet your storage needs.

IBM Business Partner Innovations Centers (BPIC)

More than 140 worldwide IBM TotalStorage 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](http://ibm.com/storage/tssc)



Media tape	Highlights	Technology	Length		Capacity		Part number	Related products	Part number
			(m/feet)	native	Compressed (typical)				
4 mm Tape	<ul style="list-style-type: none"> <li>Precision-matched tape reels and reel heights help support reliable operation</li> <li>Proprietary hub lock helps reduce positioning errors to improve data integrity</li> <li>Improved media coating helps reduce head friction and provide cleaner operation</li> </ul>	DDS-1	90/295	2 GB	4 GB	21F8754	Cleaning Cartridge—4 mm	21F8763	
		DDS-2	120/393	4 GB	8 GB	8191151			
		DDS-3	125/410	12 GB	24 GB	59H3465			
		DDS-4	150/492	20 GB	40 GB	59H4456			
		DAT72	170/557	36 GB	72 GB	18P7912			
8 mm Tape	<ul style="list-style-type: none"> <li>Special media formulation can help reduce drop-out to improve reliability</li> <li>Rigid magnetic stability specification helps increase coercivity to prolong shelf life and improve read reliability</li> <li>100 percent media enclosure can help lock out dirt and debris to protect the cartridge</li> <li>Built-in electrostatic discharge shield helps reduce risks to data and hardware</li> </ul>	Metal particle	112/367	2.5 GB	5.0 GB	21F8575	Cleaning Cartridge—AME	35L1409	
			160/524	3.5 GB	7 GB	87G1603	Cleaning Cartridge—Metal Particle	16G8467	
		AME	22/73	2.5 GB	5 GB	59H2671			
			170/557	20 GB	40 GB	59H2678			
		Mammoth-2 (w/ SmartClean)	225/738	60 GB	150 GB	18P6485			
			150/492	40 GB	100 GB	09L5323			
		75/246	20 GB	50 GB	35L1044				
SLR (QIC) cartridges	<ul style="list-style-type: none"> <li>Sophisticated mirror optics support BOT and EOT recognition</li> <li>Advanced media-binder process provides ultra-clean operation</li> <li>Stringent wheel-pin perpendicularity specification enables smoother operation and fewer re-reads</li> <li>Proprietary belt design provides steady tension</li> <li>Special stippled base-plate design helps provide rigidity and a stable tape path</li> <li>Cartridge cover shields against static discharge and airborne debris</li> <li>Durastat on drive rollers dissipates static</li> </ul>	5.25" DC9120/QIC-1000	290/950	1.2 GB	NA	21F8730	QIC 5.25" Wet Process Cleaning Cartridge	16G8572	
		5.25" DC9250/QIC-2GB-DC	366/1200	2.5 GB	5 GB	16G8436	QIC 5.25" MLR/SLR Cleaning Cartridge (50 uses)	35L0844	
		5.25" SLR5/QIC-4GB-DC	458/1500	4 GB	8 GB	59H3660			
		5.25" MLR1/QIC-5010-DC	458/1500	16 GB	32 GB	59H4175			
			60/200	2 GB	4 GB	35L0589			
		5.25" MLR3/QIC-5120-DC	462/1515	25 GB	50 GB	59H4128			
		5.25" SLR60/SLR100	47/156	5 GB	10 GB	35L0661	155' Data Cartridge		
			274/900	30 GB	60 GB	19P4209	900' Data Cartridge		
		5.25" SLR60	366/1200	37.5 GB	75 GB	24R0146			
		5.25" SLR100	457/1500	50 GB	100 GB	35L0968	1500' Data Cartridge		
		NS20	226/740	10 GB	20 GB	59H4364			
		Travan 40	228.7/750	20 GB	40 GB	19P4882	Travan Cleaning Cartridge	19P4881	

Entry-level Disk Systems



	System x and BladeCenter Direct Attach or SAN Solutions			System p Only Direct Attach Solutions	SATA SAN Solutions	System p Only Direct Attach Solutions
	EXP3000	DS3200	DS3400	EXP Plus 320	DS4100*	7204
<b>Product</b>	EXP3000	DS3200	DS3400	EXP Plus 320	DS4100 Disk System	External Disk Drive
<b>Machine/model</b>	1727-01X	1726-21X, 1726-22X	1726-41X, 1726-42X	2104/DS4, TS4	1724-100/1SC	7204-573, 7204-646
<b>Platform support<sup>1</sup></b>	Windows 2003, RedHat 3, RedHat 4, SUSE 9	Windows 2003, RedHat 3, RedHat 4, SUSE 9, SUSE 10, NetWare	Windows 2003, RedHat 3, RedHat 4, SUSE 9, SUSE 10, NetWare	System p, IBM AIX	Windows Server® 2003, Windows 2000 Server w/SP4 & Adv. Server, Novell® NetWare 6.0 w/SP4, NetWare 6.5 w/SP2, Red Hat Enterprise Linux 3.0, 4.0, SUSE Linux Enterprise Server 8, 9, VMware ESX 2.5.1, AIX 5.1/5.2, 5.3, HP UX 11/11i, Solaris 7/8/9	System p, AIX 7204 646 – also supports Linux version SLES 9
<b>Host connectivity</b>	SAS	SAS	4 Gbps Fibre Channel	Ultra 320 SCSI	Fibre Channel	Ultra SCSI - LVD
<b>SAN support</b>	N/A	N/A	Direct, Switched Fabric	N/A	Direct, FC-AL, Switched Fabric	N/A
<b>Copy services</b>	N/A	IBM FlashCopy®, IBM VolumeCopy	IBM FlashCopy, IBM VolumeCopy	N/A	FlashCopy option, Enhanced Remote Mirroring	N/A
<b>Availability features</b>	Fault Tolerant RAID, Redundant Hotswap Power, Hotswap drives, Dual pathing drives	Fault Tolerant, RAID, Redundant Hotswap Power, Hotswap drives, Dual controller, dual pathing drives	Fault Tolerant, RAID, Redundant Hotswap Power, Hotswap drives, Dual controller, dual pathing drives	RAID with server adapters, redundant power/cooling, hot-swap drives, enclosure services	Fault-tolerant, RAID, redundant power/cooling, hot-swap drives, dual controllers, concurrent microcode update capability, dual-pathing driver	
<b>Controller</b>	MegaRAID 8480	Dual active 3 Gbps SAS RAID Controllers	Dual Active 4 GB FC RAID Controllers	Adapters in server	Single/dual 2 GB RAID controller	
<b>Cache (min, max)</b>	256 MB Battery Back-up	512 MB, 2 GB Battery Back-up	512 MB, 2 GB Battery Back-up	N/A	256 MB, 512 MB	N/A
<b>RAID support</b>	0, 1, 5, 10, 50	0, 1, 3, 5, 10	0, 1, 3, 5, 10	0, 1, 5 (using server-based adapters)	0, 1, 3, 5, 10	N/A
<b>Capacity (min, max)</b>	114 GB, 14.4 TB with 4 EXP3000 Expansion Units behind single MegaRAID 8480	144 GB, 14.4 TB with 4 EXP3000 Expansion Units	144 GB, 14.4 TB with 4 EXP3000 Expansion Units	32 GB, 2 TB	250 GB, Dual controller supports 44.8 TB with seven Expansion Units Single controller supports 5.6 TB	7204-573; 73 GB 7204-646; 146 GB
<b>Drive interface</b>	3-Gbps SAS, 3-Gbps SATA II	3-Gbps SAS	3-Gbps SAS	Ultra 320 SCSI	2 GB FC-AL	Ultra SCSI
<b>Drive support</b>	73 GB, 146 GB, 300 GB 10,000 rpm disk drives; 36 GB, 73 GB, 146 GB, 300 GB 15,000 rpm disk drives; 500 GB, 750 GB SATA II	73 GB, 146 GB, 300 GB 10,000 rpm disk drives; 36 GB, 73 GB, 146 GB, 300 GB 15,000 rpm disk drives	73 GB, 146 GB, 300 GB 10,000 rpm disk drives; 36 GB, 73 GB, 146 GB, 300 GB 15,000 rpm disk drives	18.2 GB, 36.4 GB, 73.4 GB and 146.8 GB 10,000 rpm disk drives; 36.4 GB and 73.4 GB 15,000 rpm disk drives	250 GB, 400 GB 7,200 rpm SATA disk drives	Single Drive 7204-573; 73 GB 7204-646; 146 GB
<b>Clustering Support</b>	N/A	Microsoft Windows MSCS	Microsoft Windows MSCS	IBM HACMP™	Microsoft Clustering Services, IBM SAN Volume Controller 2.1.0	N/A

<sup>1</sup> In Europe, Middle East and Africa (EMEA)—New DS300, DS400 and DS4100 are not available.

## Midrange Disk Systems



	<b>DS4200 Express</b>	<b>DS4300*</b>	<b>DS4500*</b>	<b>DS4700 Express</b>	<b>DS4800</b>
<b>Product</b>	DS4200 Express Disk System	DS4300 Disk System	DS4500 Disk System	DS4700 Express Disk System	DS4800 Disk System
<b>Machine/model</b>	1814-7VA	1722-60U/6LU	1742-90U	1814-72A/70A	1815-80A/82A/84A/88A
<b>Platform support<sup>1</sup></b>	Windows Server 2003 w/SP1, Windows 2000 Server & Adv. Server w/SP4, Netware 6.5 w/SP2, 6.0 w/SP4, AIX 5.1, 5.2, 5.3, Linux/Intel, RedHat Enterprise Linux 3.0, RedHat Enterprise Linux 4.0 U1, VMWare ESX 2.5.1, Solaris 7, 8, 9 w/Veritas Cluster Svs and Veritas VM/DMP, HP-UX 11i & 11.0, Linux/IBM, System p, SUSE Linux Enterprise Svr (SLES) 8.0, 9.0	System p, System x, Windows 2000 Server w/SP4 & Adv. Server, Novell NetWare 6.0 w/SP4, NetWare 6.5 w/SP2, Red Hat Enterprise Linux 3.0, 4.0, SUSE Linux Enterprise Server 8, 9, VMware ESX 2.5.1, AIX 5.1/5.2, 5.3, HP UX 11/11i, Solaris 7/8/9	System p, System x, select Sun and HP UNIX servers and other Intel processor-based servers, Windows 2000 Server w/SP4 & Adv. Server, Novell NetWare 6.0 w/SP4, NetWare 6.5 w/SP2, Red Hat Enterprise Linux 3.0, 4.0, SUSE Linux Enterprise Server 8, 9, VMware ESX 2.5.1, AIX 5.1/5.2, 5.3, HP UX 11/11i, Solaris 7/8/9	System p, System x, Windows Server 2003 w/SP1, Windows 2000 Server & Adv.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 2.5.2 AIX 5.1, 5.2, 5.3, HP-UX 11i and 11.23, Solaris 8, 9, 10	System p, System x, Windows Server 2003, Windows 2000 Server & Adv.Server, Novell NetWare 6.0 w/SP4 and 6.5 w/SP2, Red Hat Enterprise Linux 3.0, SUSE Linux Enterprise Server 8/9, VMware ESX 2.5.1, AIX 5.1/5.2/5.3, HP UX 11/11i, Solaris 7/8/9
<b>Host connectivity</b>	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel
<b>SAN support</b>	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric
<b>Copy services</b>	FlashCopy option, Enhanced Remote Mirroring, VolumeCopy	Single: FlashCopy Dual base: FlashCopy, VolumeCopy Turbo option: FlashCopy, VolumeCopy, Enhanced Remote Mirroring	Enhanced Remote Mirroring, FlashCopy, VolumeCopy	Enhanced Remote Mirroring, FlashCopy, VolumeCopy	Enhanced Remote Mirroring, FlashCopy, VolumeCopy
<b>Availability features</b>	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, single/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
<b>Controller</b>	Dual 4 GB RAID controller	Single/dual active 2 Gbps RAID controllers; optional turbo feature	Dual active 2 Gbps RAID controllers	Dual active 4 Gbps RAID controllers	Dual active 4 Gbps RAID controllers
<b>Cache (min, max)</b>	2 GB	256 MB, 256 MB (single), 512 MB, 512 MB (base) 2 GB, 2 GB (turbo option)	2 GB, 2 GB	2 GB, 4 GB (70A/72A)	4 GB, 4 GB (80A/82A) 8 GB, 8 GB (84A) 16 GB, 16 GB (88A)
<b>RAID support</b>	0, 1, 3, 5, 10	0, 1, 3, 5, 10	0, 1, 3, 5, 10	0, 1, 3, 5, 10	0, 1, 3, 5, 10
<b>Capacity (min, max)</b>	500 GB EV-DDM, supports 56 TB with six EXP420 Expansion Units	36.4 GB, 33.6 TB via EXP810/EXP710 (FC) 400 GB, 44.8 TB via EXP100 (Serial ATA)	36.4 GB, 67.2 TB via EXP700/EXP710 (FC) 400 GB, 89.6 TB via EXP100 (Serial ATA)	36.4 GB, 33.6 TB via EXP810/EXP710 (FC)	36.4 GB, 67.2 TB via EXP810/EXP700/EXP710 (FC) 400 GB, 89.6 TB via EXP100 (Serial ATA)
<b>Drive interface</b>	4 GB FC-AL	2 Gbps FC-AL	2 Gbps FC-AL	4 Gbps Switched	4 Gbps Switched
<b>Drive support</b>	500 GB EV-DDM, SATA disk drives	2 Gbps, 36.4 GB, 73.4 GB, 146.8 GB and 300 GB 10,000 rpm; 36.4 GB, 73.4 GB and 146.8 GB 15,000 rpm; (Serial ATA) 250 GB, 400 GB 7,200 rpm	2 Gbps, 36.4 GB, 73.4 GB, 146.8 GB and 300 GB 10,000 rpm; 36.4 GB, 73.4 GB and 146.8 GB 15,000 rpm; (Serial ATA) 250 GB, 400 GB 7,200 rpm	2 Gbps 73.4 GB, 146.8 GB and 300 GB 10,000 rpm; 36.4 GB, 73.4 GB and 146.8 GB 15,000 rpm; 4 Gbps 36.4 GB, 73.4 GB, 146.8 GB 15,000 rpm	2 Gbps, 36.4 GB, 73.4 GB, 146.8 GB and 300 GB 10,000 rpm; 18.2 GB, 36.4 GB, 73.4 GB and 146.8 GB 15,000 rpm; (Serial ATA) 250 GB, 400 GB 7,200 rpm, 4 Gbps 36.4 GB, 73.4 GB, 146.8 GB 15,000 rpm
<b>Certifications</b>	Microsoft Cluster Services, Novell Cluster Services, HACMP, PSSP, GPFS/RVSD Support, SteelEye—Lifekeeper 5.2.0, GPFS for Linux v1.3, Veritas Cluster Server, HP MC/Service Guard 11.16	Microsoft RAID, Cluster and Data Center, HACMP, VERITAS Clustering	Microsoft RAID, Cluster, NetWare Cluster, HACMP, VERITAS Clustering <sup>4</sup>	Microsoft RAID, Cluster, NetWare Cluster, HACMP, VERITAS Clustering <sup>4</sup>	Microsoft RAID, Cluster, NetWare Cluster, HACMP, VERITAS Clustering <sup>4</sup>

\* In Europe, Middle East and Africa (EMEA)—New DS4300 and DS4500 are not available.

## Enterprise Disk Systems



	DS6800	DS8100	DS8300	ESS 800*
<b>Product</b>	IBM System Storage DS6800	IBM System Storage DS8000™ Turbo	IBM System Storage DS8000 Series Turbo	ESS Model 800 and ESS 800 Refurbished with Warranty
<b>Machine/model</b>	1750/522	2421, 2422, 2423, 2424/931	2421, 2422, 2423, 2424/932/9B2	2105/800
<b>Platform support<sup>1</sup></b>	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 NT, Windows 2000, Windows Server 2003, NetWare, Linux for System z, z/OS, z/VM, OS/390, VM/ESA, VSE/ESA, TPF, Linux for Intel systems, Dynix, OpenVMS, Tru64, VMWare, Fujitsu Primepower, SGI Origin IRIX
<b>Host connectivity</b>	1 Gb and 2 Gb Fibre Channel/FICON	2 Gb and 4 Gb Fibre Channel, FICON, ESCON	2 Gb and 4 Gb Fibre Channel, FICON, ESCON	1 Gb and 2 Gb Fibre Channel/FICON, ESCON, SCSI
<b>SAN support</b>	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric	Direct, FC-AL, Switched Fabric
<b>Copy services</b>	FlashCopy, Metro Mirror, Global Mirror, Global Copy, as target for z/OS Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror(RPQ)
<b>Availability features</b>	Fault Tolerant, dual redundant and hot-swap RAID Controller Cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, non-disruptive hardware and software code load updates, multi-pathing device driver	Fault Tolerant, dual redundant and hot-swap RAID Controller Cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, non-disruptive hardware and software code load updates, multi-pathing device driver	Fault Tolerant, dual redundant and hot-swap RAID Controller Cards, Battery Backup Units, Fibre Channel switch controllers, power supplies, non-disruptive hardware and software code load updates, multi-pathing device driver	Fault-tolerant, RAID, redundant power/cooling, hot-swap drives, dual controllers, concurrent microcode update capability, dual-pathing driver
<b>Controller</b>	Dual active/active	Dual active/active	Dual active/active	SMB dual active; optional turbo feature
<b>Cache (min, max)</b>	4 GB	16/128 GB	32/256 GB	8 GB, 64 GB
<b>RAID support</b>	5, 10	5, 10	5, 10	5, 10
<b>Capacity (min, max)</b>	292 GB, 64 TB	1.1 TB, 192 TB	1.1 TB, 320 TB (512 TB via RPQ on mod 932)	582 GB, 55.9 TB (physical capacity)
<b>Drive interface</b>	2 Gb Fibre Channel	2 Gb Fibre Channel	2 Gb Fibre Channel	SSA
<b>Drive support</b>	73 GB 15K, 146 GB 10K, 146 GB 15K, 300 GB 10K, 500 GB FATA, 7.2K	73 GB 15K, 146 GB 10K, 146 GB 15K, 300 GB 15K, 500 GB 7.2 FATA	73 GB 15K, 146 GB 10K, 146 GB 15K, 300 GB 15K, 500 GB 7.5K FATA	18.2 GB, 36.4 GB, 72.8 GB and 145.6 GB 10,000 rpm disk drives 18.2 GB, 36.4 GB and 72.8 GB 15,000 rpm disk drives
<b>Certifications</b>	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	Microsoft RAID, Cluster and Data Center, GDPS, HACMP, Solaris Ready

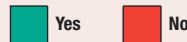
\* In Europe, Middle East and Africa (EMEA)—New ESS 800s and ESS 750s are not available. (Refurbished with Warranty ESS 800s are available in EMEA).

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.

Selecting a solution

	DS4700 Express	DS4800	DS6800	DS8100	DS8300	ESS
Local copy within controller	Yes	Yes	Yes	Yes	Yes	Yes
Remote Copy (>10 km)	Yes	Yes	Yes	Yes	Yes	Yes
Centralized management	Yes	Yes	Yes	Yes	Yes	Yes
Storage area network	Yes	Yes	Yes	Yes	Yes	Yes
Concurrent heterogeneous servers (UNIX and Intel)	Yes	Yes	Yes	Yes	Yes	Yes
Concurrent microcode install	Yes	Yes	Yes	Yes	Yes	Yes
Intermix disk capacities	Yes	Yes	Yes	Yes	Yes	Yes
Multiple RAID options	Yes	Yes	Yes	Yes	Yes	Yes
Controller-based call-home	Yes	Yes	Through DS Storage Manager Server	Through DS Storage Manager Server	Through DS Storage Manager Server	Yes
Rack mount	Yes	Yes	Yes	Yes	Yes	Yes
Virtualization	Yes	Yes	Yes	Yes	Yes	Yes
Virtualization through SAN Volume Controller	Yes	Yes	Yes	Yes	Yes	Yes

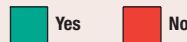
\* Remote Copy (>10 km) is via System Storage Proven vendors (CNT, Legato, NSI)



Selecting a solution (continued)

	EXP3000	DS3200	DS3400	DS4100	DS4200 Express	DS4300	DS4500	EXP Plus 320
Local copy within controller	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Remote Copy (>10 km)	Yes	Yes	Yes	Yes	Yes	Turbo option only	Yes	Yes
Centralized management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Storage area network	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Concurrent heterogeneous servers (UNIX and Intel)	Intel/AMD only	Intel/AMD only	Intel/AMD only	Yes	Yes	Yes	Yes	Yes
Concurrent microcode install	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Intermix disk capacities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multiple RAID options	Yes	Yes	Yes	Yes	Yes	Yes	Yes	requires adapter
Controller-based call-home	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rack mount	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtualization	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virtualization through SAN Volume Controller	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

\* Remote Copy (>10 km) is via System Storage Proven vendors (Legato, CNT, NSI)



Product

Highlights

<b>Enterprise Storage Server 800</b>	<ul style="list-style-type: none"> <li>Affordable enterprise strength reliability and function</li> <li>Great second tier storage option for backup, remote mirroring, test or archive needs</li> <li>Host connectivity via SCSI, FC/FICON, or ESCON interfaces to a wide variety of UNIX, Windows, System i and System z servers</li> <li>Features state-of-the-art copy services for rapid backup and disaster recovery</li> <li>Full 3 year warranty on Refurbished with Warranty systems available worldwide. New ESS 800s also still available in some countries</li> </ul>
<b>DS8300 Turbo</b>	<ul style="list-style-type: none"> <li>A new standard in enterprise class functionality with extraordinary performance and up to 320 TB (512 TB via RPQ) of physical capacity</li> <li>Host connectivity via 4 Gb FC/FICON or ESCON interfaces to a wide variety of UNIX, Windows, System i and System z servers</li> <li>Top notch storage consolidation system with Storage System LPAR capability</li> <li>Offers FlashCopy, Global and Metro Mirroring functions (2-site and 3-site)</li> <li>Call home and remote support as well as an Enterprise Choice 1-year, 2-year, 3-year or 4-year warranty</li> </ul>
<b>DS8100</b>	<ul style="list-style-type: none"> <li>A new standard in enterprise class functionality and performance with up to 192 TB of physical capacity</li> <li>Host connectivity via 4 Gb FC/FICON or ESCON interfaces to wide variety of UNIX, Windows, System p, System x, System i and System z servers</li> <li>Offers FlashCopy, Global and Metro Mirroring functions (2-site and 3-site)</li> <li>Call home and remote support as well as an Enterprise Choice 1-year, 2-year, 3-year or 4-year warranty</li> </ul>
<b>DS6800</b>	<ul style="list-style-type: none"> <li>Provides enterprise-class disk offering in a modular package at an affordable price</li> <li>Designed to provide host connectivity via FC/FICON to a wide variety of UNIX, Windows, System p, System x, System i and System z servers</li> <li>Features FlashCopy as well as Global and Metro Mirroring functions</li> <li>Enterprise-class warranty, 24x7, same day IBM on-site response</li> </ul>
<b>DS4800</b>	<ul style="list-style-type: none"> <li>Provides SAN-ready flexible disk storage system for UNIX and Intel processor-based environments</li> <li>Offers high-performance, full fibre solution with 4 Gbps Fibre Channel Connectivity</li> <li>Supports business continuance with its optional high-availability software and advanced Enhanced Remote Mirroring function</li> <li>Helps protect customer data with its multi-RAID capability and hot-swappable redundant components</li> </ul>
<b>DS4700 Express</b>	<ul style="list-style-type: none"> <li>Provides SAN-ready flexible disk storage system for UNIX and Intel processor-based environments</li> <li>Offers high-performance, full fibre solution with 4 Gbps Fibre Channel Connectivity</li> <li>Supports business continuance with its optional high-availability software and advanced Enhanced Remote Mirroring function</li> <li>Helps protect customer data with its multi-RAID capability and hot-swappable redundant components</li> </ul>
<b>DS4500</b>	<ul style="list-style-type: none"> <li>Provides SAN-ready flexible disk storage system for UNIX and Intel processor-based environments</li> <li>Offers high-performance, full fibre solution with 2 Gbps Fibre Channel Connectivity</li> <li>Supports business continuance with its optional high-availability software and advanced Enhanced Remote Mirroring function</li> <li>Helps protect customer data with its multi-RAID capability and hot-swappable redundant components</li> </ul>
<b>DS4300</b>	<ul style="list-style-type: none"> <li>Provides four 2 Gbps FC host ports to support multipath failover for directly attached UNIX and Intel processor-based servers</li> <li>Designed to deliver high performance of up to 768 MBps throughput with turbo option</li> <li>Supports up to 112 fibre disk drives or 33.6 TB capacity with Turbo option, 112 SATA disk drives or 44.8 TB capacity with dual base or Turbo option</li> <li>Can help improve service response time with automated alerts from the optional IBM DS4000™ Service Alert feature</li> </ul>
<b>DS4200 Express</b>	<ul style="list-style-type: none"> <li>An SATA only solution designed to provide an economical alternative storage solution that supports data archiving, reference data and near-line storage applications</li> <li>Offers high-performance, full fibre solution with 4 Gbps Fibre Channel Connectivity</li> <li>Supports business continuance with its optional high-availability software and advanced Enhanced Remote-Mirroring function</li> <li>Helps protect customer data with its multi-RAID capability and hot-swappable redundant components</li> </ul>
<b>DS4100</b>	<ul style="list-style-type: none"> <li>Features SAN ready, Fibre Channel attach, single or dual controller models, entry-level SATA solution to support general use, data archiving, reference data, and near-line storage applications</li> <li>Provides a low cost, entry level solution for UNIX and Intel servers</li> <li>Designed to provide scalability for easy growth (250 GB to 44.8 TB)</li> <li>Offers powerful, intuitive storage management tools</li> </ul>

## Disk Storage Systems (continued)

Product	Highlights
DS3400	<ul style="list-style-type: none"> <li>• 4 Gbps Fibre Channel (FC) interface technology</li> <li>• Easy to deploy and manage with the DS3000 Storage Manager</li> <li>• Scalable to 3.6 Terabytes (TB) of storage capacity with 300 GB hot-swappable Serial Attached SCSI (SAS) disks</li> <li>• Expandable by attaching up to three EXP3000s, a total of 14.4 TB of storage capacity</li> <li>• Flexible for use with IBM System x and BladeCenter servers</li> <li>• Affordable for the SMB budgets.</li> </ul>
DS3200	<ul style="list-style-type: none"> <li>• 3 Gbps Serial Attached SCSI (SAS) interface technology</li> <li>• Easy to deploy and manage with the DS3000 Storage Manager</li> <li>• Scalable to 3.6 TB of storage capacity with 300 GB hot-swappable Serial Attached SCSI (SAS) disks</li> <li>• Expandable by attaching up to three EXP3000s, a total of 14.4 TB of storage capacity</li> <li>• Affordable for the small and medium business budgets</li> </ul>
EXP3000	<ul style="list-style-type: none"> <li>• 3-Gbps SAS interface technology</li> <li>• Support for up to 3.6 TB of storage in a single enclosure</li> <li>• Support for up to 14.4 TB in a cascaded configuration with MegaRAID 8480 adapter</li> <li>• 3.5" SAS hard disk drives supported</li> <li>• Powerful and comprehensive management and configuration tools included</li> </ul>
EXP Plus 320	<ul style="list-style-type: none"> <li>• Provides flexible, scalable and cost-effective SCSI-attach disk storage for System p servers</li> <li>• Supports Internet-centric service providers</li> </ul>


Additional information on these IBM Disk Storage products is available on the Web at [ibm.com/storage/disk](http://ibm.com/storage/disk)

## Operating Systems and Copy Services Platform Coverage

	DS4800	DS6800	DS8100	DS8300	ESS 750/800
Windows NT	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror				FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Windows 2000	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Windows Server 2003	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
NetWare	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Linux <sup>1</sup>	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
AIX	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
VMWare	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Dynix					FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
HP-UX	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Solaris	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
IRIX	*	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Tru64 UNIX	*	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
OpenVMS		FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
z/OS, OS/390, TPF		FlashCopy, Metro Mirror, Global Mirror, Global Copy, as target for z/OS Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, z/OS Global Mirror, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ), z/OS Global Mirror (XRC)
i5/OS		FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror (RPQ)
Apple Macintosh OSX		FlashCopy, Metro Mirror, Global Mirror, Global Copy	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	FlashCopy, Metro Mirror, Global Mirror, Global Copy, Metro/Global Mirror	

\* 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 (continued)

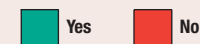
	EXP3000/MegaRAID	DS3200/DS3400	DS4100	DS4200 Express	DS4300 <sup>3</sup>	DS4500	DS4700 Express
Windows NT			FlashCopy, FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Windows 2000			FlashCopy, FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Windows Server 2003		FlashCopy, VolumeCopy	FlashCopy, FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
NetWare		FlashCopy, VolumeCopy	FlashCopy, FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Linux <sup>1</sup>		FlashCopy, VolumeCopy	FlashCopy, FlashCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
AIX			FlashCopy, FlashCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
VMWare				FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror			FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Dynix							
HP-UX			FlashCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
Solaris			FlashCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror	FlashCopy, VolumeCopy, Metro Mirror, Global Copy and Global Mirror
IRIX				*	*	*	*
Tru64 UNIX				*	*	*	*
OpenVMS							
z/OS, OS/390							
i5/OS							
DG/UX							

\* Request via RPO 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 requires turbo option



IBM System Storage N series



	N5000 series				N7000 series	
	N3700	N5200	N5500	N5600	N7600	N7800
<b>Model</b>	2863-A10 (single) 2863-A20 (clustered)	2864-A10 (single) 2864-A20 (clustered)	2865-A10 (single) 2865-A20 (clustered)	2868-A10 (single) 2868-A20 (clustered)	2866-A10 (single) 2866-A20 (clustered)	2867-A10 (single) 2867-A20 (clustered)
<b>Maximum raw capacity</b>	16 TB	84 TB	168 TB	252 TB	420 TB	504 TB
<b>Integrated Onboard I/O ports*</b>	Two optical FC ports for tape attachment Four 1 Gbps Ethernet	Eight 2 Gbps FC Eight 1 Gbps Ethernet	Eight 2 Gbps FC Eight 1 Gbps Ethernet	Eight 4 Gbps FC Eight 1 Gbps Ethernet	Sixteen 2 Gbps FC Twelve 1 Gbps Ethernet	Sixteen 2 Gbps FC Twelve 1 Gbps Ethernet
<b>PCI expansion slots for additional FC HBA's or Gbe NIC cards*</b>	NA	6	6	6	16	16
<b>Performance*</b>	13,620 IO/sec	34,089 IO/sec	47,927 IO/sec	85,615 IO/sec	100,295 IO/sec	136,048 IO/sec
<b>NVRAM *</b>	256 MB	1 GB	1 GB	1 GB	1 GB	1 GB
<b>Random Access Memory*</b>	2 GB	4 GB	8 GB	16 GB	32 GB	64 GB

All N series systems provide the following features:

<b>Storage controllers/filers</b>	Active/Active with automatic failover to secondary system
<b>Fibre channel (FC) disk drive support</b>	72 GB 10K, 72 GB 15K, 144 GB 10K, 300 GB 10K
<b>SATA disk drive support</b>	250 GB 7.2K, 320 GB 7.2K, 500 GB 7.2K
<b>Host connectivity &amp; platform support</b>	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.
<b>Network protocol support</b>	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
<b>Other protocol support</b>	SNMP, NDMP, LDAP, NIS, DNS
<b>Operating system</b>	Data ONTAP™
<b>Data protection</b>	Double Parity RAID, Snapshot™, SnapRestore™, SnapMirror®, SyncMirror®, SnapVault®, Open System Snap Vault
<b>Redundancy/high availability</b>	CompactFlash dual redundant hot plug integrated cooling fans, hot-swappable autoranging power supplies, clustered filers, hot-swappable disk days
<b>Backup</b>	External tape (SCSI or fibre channel)
<b>RAID levels</b>	RAID 4, RAID-DP (double parity)
<b>System management/Storage management</b>	FilerView®, SecureAdmin™, SNMP, Operations Manager /Industry standard NDMP protocols
<b>Standard software features</b>	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
<b>Optional software features</b>	CIFS Protocol, NFS Protocol, HTTP Protocol, FCP Protocol, Cluster Failover, FlexClone™, MultiStore®, SnapLock® Compliance, SnapLock Enterprise, SnapMirror®, SnapRestore®, SnapVault®, Open Systems SnapVault, LockVault™, SnapDrive® for Windows, SnapDrive for Unix: AIX, Solaris, HP-UX, Linux, SnapValidator™, SnapDrive for Windows, SnapManager® for SQL, SnapManager for Exchange, SnapManager for Oracle®, Single Mailbox Recovery for Exchange, Operations Manager, NearStore® feature, MetroCluster



	N5000 Gateway series		N7000 Gateway series	
	N5200	N5500	N7600	N7800
<b>Model</b>	2864-G10 (single) 2864-G20 (clustered)	2865-G10 (single) 2865-G20 (clustered)	2866-G10 (single) 2866-G20 (clustered)	2867-G10 (single) 2867-G20 (clustered)
<b>Maximum raw capacity</b>	50 TB	84 TB	420 TB	504 TB
<b>Onboard I/O ports*</b>	Eight 2 Gbps FC Eight 1 Gbps Ethernet	Eight 2 Gbps FC Eight 1 Gbps Ethernet	Sixteen 2 Gbps FC Twelve 1 Gbps Ethernet	Sixteen 2 Gbps FC Twelve 1 Gbps Ethernet
<b>PCI expansion slots for additional FC HBA's or Gbe NIC cards*</b>	6	6	16	16
<b>Performance*</b>	34,089 IO/sec	47,927 IO/sec	100,295 IO/sec	136,048 IO/sec
<b>NVRAM *</b>	1 GB	1 GB	1 GB	1 GB
<b>Random Access Memory*</b>	4 GB	8 GB	32 GB	64 GB

**All N series Gateway systems provide the following features:**

<b>Storage controllers/filers</b>	Active/Active with automatic failover to secondary system
<b>Host connectivity &amp; platform support</b>	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.
<b>Network protocol support</b>	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
<b>Other protocol support</b>	SNMP, NDMP, LDAP, NIS, DNS
<b>Operating system</b>	Data ONTAP
<b>Data protection</b>	Snapshot, SnapRestore, SnapMirror, SyncMirror, SnapVault, Open System Snap Vault
<b>Redundancy/high availability</b>	CompactFlash dual redundant hot plug integrated cooling fans, hot-swappable autoranging power supplies, clustered filers, hot-swappable disk days
<b>Backup</b>	External tape (SCSI or fibre channel)
<b>RAID levels</b>	RAID 4, RAID-DP (double parity)
<b>System management/Storage management</b>	FilerView®, SecureAdmin™, SNMP, Operations Manager /Industry standard NDMP protocols
<b>Standard software features</b>	Snapshot™, FlexVol™, FlexShare™, Integrated Automatic RAID Manager, Fast Boot, NIS, DNS, SNMP, FilerView, NDMP, LDAP, iSCSI, AutoSupport, SyncMirror®, SnapMover®, FTP protocol feature, SecureAdmin™
<b>Optional software features</b>	CIFS Protocol, NFS Protocol, HTTP Protocol, FCP Protocol, Cluster Failover, FlexClone™, MultiStore®, SnapLock® Enterprise, SnapMirror®, SnapRestore®, SnapVault®, Open Systems SnapVault, LockVault™, SnapDrive® for Windows, SnapDrive for Unix: AIX, Solaris, HP-UX, Linux, SnapValidator™, SnapDrive for Windows, SnapManager® for SQL, SnapManager for Exchange, SnapManager for Oracle®, Single Mailbox Recovery for Exchange, Operations Manager, NearStore® feature, MetroCluster

**N series Highlights**

- **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 total cost of ownership 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
- **Scalability**—supports non-disruptive 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
- **NearStore (near-line) Feature**—SATA drive technology enables on-line and quick access to archived and non-intensive transactional data
- **WORM data protection**—software and hardware features that offer non-erasable and non-rewritable data protection to meet the industry's highest regulatory requirements for retaining company data assets

**NOTES:**

\*Systems are based on dual clustered storage controllers. Divide all numbers by 1/2 if a single storage controller system is ordered.  
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 fallback capabilities.  
The N series Interoperability Matrix can be found at the following web site: [ibm.com/storage/nas](http://ibm.com/storage/nas)  
The following are trademarks or registered trademarks of Network Appliance, Inc.: Data ONTAP, FlexVol, FilerView, SecureAdmin, RAID-DP, SecureAdmin, FlexClone, MultiStore, SnapLock, LockVault, SnapShot, SnapMirror, SnapMover, SnapRestore, SnapVault, SnapManager, FlexShare, NearStore



### IBM System Storage DR550 and DR550 Express

<b>Model</b>	
<b>Highlights</b>	<ul style="list-style-type: none"> <li>Operational Efficiency—Designed to help businesses meet the growing challenge of archiving and securing retention managed data and other critical information assets over extended periods of time</li> <li>Integrated offering—Designed as a preconfigured, integrated offering to help store, retrieve, manage, share and secure regulated and non-regulated data in non-erasable and non-rewritable format</li> <li>Automation—Designed to offer automatic provisioning, migration, expiration and archiving capabilities</li> <li>Scalability—Supports non-disruptive enterprise scalability from 1.1 TB up to 112 TB physical capacity and supports petabytes of storage with attached tape and optical</li> <li>Policy-based—Offers a comprehensive suite of software tools for policy- and event-based data management</li> <li>High Availability—Option designed to avoid single points of failure</li> <li>Native support for LTO Gen 3 WORM Tape and 3996 optical libraries</li> <li>Flexibility—Application program interface (API) client program makes it easy to integrate ISV Content Management applications</li> <li>Disaster Recovery support—Synchronous or Asynchronous Replication—Supports Metro or Global Mirroring allowing two real-time synchronous or asynchronous copies of the data to be maintained on DR550s in separate locations. DR550 also protects customer data by allowing businesses to use tape libraries with advanced LTO Gen 3 tape drives with WORM capabilities to provide efficient and cost effective replication of data objects.</li> <li>Operating in conjunction with an enterprise content-management product like IBM CommonStore for SAP helps enable centralized management through a single interface to support storage allocation and address application demands.</li> </ul>
<b>Scalability</b>	DR550: Single engine: 8 TB and 16 TB, Dual engine: 8, 16, 32, 56, 112 TB of physical storage, up to petabytes with attached tape and optical storage. DR550 Express 1.1, 5.1 and 9.1 TB configurations.
<b>Nodes</b>	Single- or dual-server configurations Dual-server configuration offers failover protection
<b>Processors</b>	DR550: 2-way 1.9 GHz POWER5+™ Processor Card, 36 MB L3 Cache DR550 Express: 1-way 1.65 GHz POWER5+ Processor Card, no L3 Cache
<b>Network protocol support</b>	IBM System Storage Archive Manager (SSAM) application programming interface (API) v5.3
<b>Operating system</b>	IBM AIX, Version 5.3
<b>Performance</b>	Performance testing results: <a href="http://www-03.ibm.com/servers/storage/disk/dr/performance.html">www-03.ibm.com/servers/storage/disk/dr/performance.html</a>
<b>PCI slots available</b>	N/A
<b>Network connectivity</b>	2 port Gigabit Copper or Fibre Ethernet (upgrades available)
<b>ECC SDRAM memory (max)</b>	1 GB per node
<b>Data protection</b>	Mirrored OS, RAID-5 for user data Data Encryption for enhanced security for disk and tape via 128-bit AES or 56-bit DES encryption technology. Encryption keys can be managed by the application or by the DR550
<b>Redundancy/high availability</b>	IBM HACMP 5.3 (Dual-server configuration), redundant DS4100 controllers, RDAC driver to provide path failover, RAID
<b>Backup</b>	External tape (recommended IBM 3592 WORM tape)
<b>RAID levels</b>	RAID-5
<b>Systems management</b>	SMIT, DS4000 Storage Manager GUI, SNMP
<b>Storage management</b>	IBM Tivoli Storage Manager client and storage agent

\* Please visit [ibm.com/storage/nas](http://ibm.com/storage/nas) for additional N3700 performance information.

\*\* Please visit [ibm.com/storage/dr550](http://ibm.com/storage/dr550) for current DR550 performance results.

† For more information on third-party product support, please refer to "IBM NAS Interoperability" at [ibm.com/storage/nas](http://ibm.com/storage/nas).

### SAN Virtualization

Create a tiered storage environment and increase the flexibility within your storage infrastructure by introducing solutions based on IBM TotalStorage virtualization software.

Product	Function and Value	Highlights
<b>IBM System Storage SAN Volume Controller (SVC)</b>	Based on virtualization technology, the IBM System Storage SAN Volume Controller is designed to manage attached disk storage as a single resource from a single point to simplify administration. It is designed to allow a tiered storage environment to be deployed more easily than relying on physical disk arrays alone.	<ul style="list-style-type: none"> <li><b>Manage storage volumes from a central point:</b> The SVC is designed to enhance the flexibility of your storage environment. It can combine the storage capacity from multiple disk arrays from different suppliers into a single pool of storage that can be managed from a central point. In this way, fewer skills are required and storage administrators can become more productive.</li> <li><b>Create a tiered storage environment:</b> Using virtualization technology, the SVC enables customers to match the cost of the storage to the value of their data. For example, mission-critical data can be stored on high-performance, highly available Fibre-Channel disks while non-mission-critical data can be stored on serial-ATA disks. Data can easily be moved from one tier to another without application disruption.</li> <li><b>Virtually eliminate downtime related to storage:</b> The SVC enables data migrations, storage software upgrades and changes to the physical storage without impacting host applications.</li> <li><b>Improve storage resource utilization:</b> By combining the storage capacity from multiple disk arrays into a single pool, SVC uses existing storage capacity more efficiently, which can defer additional storage purchases to save costs.</li> <li><b>A single, cost-effective set of advanced copy services:</b> The SVC can apply copy services across all the managed storage, regardless of the disk array supplier. This capability helps simplify the environment, reduce the costs of implementing disaster recovery solutions, increases flexibility in using storage and increases personnel productivity.</li> </ul>

### IBM TotalStorage Expert Family

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

Product	Function and Value
<b>IBM TotalStorage ETL Expert</b>	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
<b>IBM TotalStorage XRC Performance Monitor</b>	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
<b>DFSMSdftp™</b>	Provides data access, program and device management functions that furnish effective management of active data
<b>DFSMSdss™</b>	Provides data movement, copy, backup and space management functions
<b>DFSMSShsm™</b>	Provides backup, recovery, migration and space management functions that furnish effective management of inactive data
<b>DFSMSRmm™</b>	Provides a policy-driven solution for the management of removable media, such as tape cartridges and reels
<b>DFSORT™</b>	Provides a solution for faster and easier data sorting, reporting and analysis
<b>DFSMSStvs</b>	Enables batch jobs and IBM CICS® (Customer Information Control Systems) online transactions to update shared VSAM data sets concurrently

### IBM Tivoli Storage Manager

Function and Value	Highlights
<p>IBM Tivoli Storage Manager is designed to provide protection of your 24x7 applications and key data in the event of hardware, software or network failures. It offers move-and-store techniques and policy-based automation, which are designed to work together to help increase data and application protection, decrease disaster recovery time and lower storage administration costs. It manages inactive data, helping you match the value of the data to the most cost-effective storage management practices. Tivoli Storage Manager is designed to scale easily to protect hundreds of computers running a dozen operating systems ranging from laptops to mainframes and connected together via the Internet, WANs, LANs or SANs. Tivoli Storage Manager also offers open, easy-to-use APIs designed to enable ISVs to more easily adapt their solutions to IBM software, helping to allow joint customers to customize, better secure and extend the functionality of their storage environment.</p>	<ul style="list-style-type: none"> <li>• Designed to protect valuable data in the most cost-effective manner</li> <li>• Designed to archive inactive data to help reduce costs</li> <li>• Designed to help ensure continuity and recovery</li> </ul>

### IBM Tivoli Storage Manager Extended Edition

### IBM Tivoli Storage Manager Express

### IBM TotalStorage Productivity Center

Product	Function and Value	Highlights
<b>IBM TotalStorage Productivity Center for Disk</b>	In a pooled or virtualized SAN environment, multiple devices work together to create a storage solution. IBM TotalStorage Productivity Center for Disk is designed to provide integrated administration, optimization and replication features for these environments.	<ul style="list-style-type: none"> <li>• Designed to help reduce the complexity and cost of storage management while improving data availability</li> <li>• Offers centralized, open standards-based management of storage devices</li> <li>• Designed to help enhance storage administrator productivity</li> <li>• Offers proactive management of storage devices</li> </ul>
<b>IBM TotalStorage Productivity Center for Replication</b>	TotalStorage Productivity Center For Replication is designed to simplify and automate the configuration of your replication environment allowing for more effective Metro Mirroring, Global Mirror and IBM FlashCopy management. It is also designed to monitor and automate copy operations across devices to support a replication environment.	<ul style="list-style-type: none"> <li>• Automates the configuration of your IBM DS8000 advanced copy services (FlashCopy and PPRC)</li> <li>• Monitors and manages the IBM DS8000 and SVC copy operations to ensure successful completion from your source volumes to your disaster recovery volumes</li> </ul>

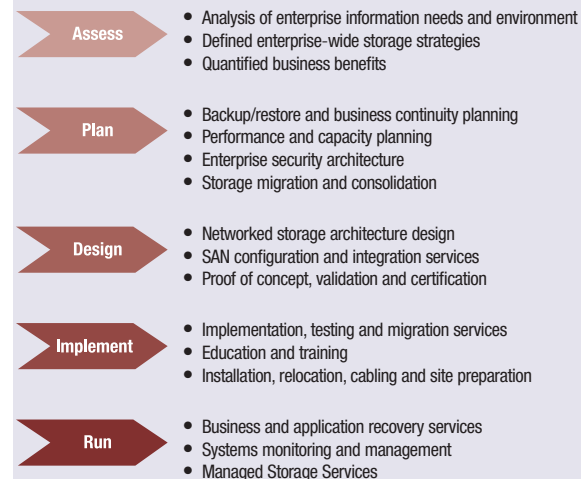
### IBM TotalStorage Productivity Center

<b>IBM TotalStorage Productivity Center for Replication Two Site Business Continuity</b>	<p>TPC for Replication Two Site Business Continuity provides disaster recovery management through planned and unplanned failover and failback automation for the IBM ESS Model 800, IBM DS6000™ and IBM DS8000.</p>	<ul style="list-style-type: none"> <li>• TPC for Replication Two Site Business Continuity helps you manage replication to a remote backup site through Metro Mirror or Global Mirror. The software is designed to allow 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. Automated failover is designed 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.</li> </ul>
<b>IBM TotalStorage Productivity Center for Data</b>	<p>IBM TotalStorage Productivity Center for Data is a Storage Resource Management (SRM) tool for storage environments that provide a set of policy-driven automated tools for managing storage capacity, availability, events, performance and assets, including DAS, NAS and SAN technologies.</p>	<ul style="list-style-type: none"> <li>• Designed to help leverage and optimize existing storage resources and perform storage management with a high level of control</li> <li>• Designed to help maximize storage utilization</li> <li>• Designed to be able to manage more storage with the same staff</li> </ul>
<b>IBM TotalStorage Productivity Center for Fabric</b>	<p>IBM TotalStorage Productivity Center for Fabric is designed to help automate the management of heterogeneous storage networks and works with a broad range of devices, so businesses can leverage and better use existing technology investments. It is designed to provide comprehensive management of physical and logical configurations for multi-vendor SANs with automatic resource discovery, event monitoring and alerting, zone control and SAN error-prediction capabilities.</p>	<ul style="list-style-type: none"> <li>• Designed to help predict storage network failures before they happen, enabling preventative maintenance</li> <li>• Designed to help accelerate problem isolation when failures occur</li> <li>• Designed to create a single point of control, administration and security for the management of heterogeneous storage networks</li> </ul>
<b>IBM TotalStorage Productivity Center Standard Edition</b>	<p>Combines Disk, Data and Fabric components together as one orderable product.</p>	<ul style="list-style-type: none"> <li>• 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)</li> </ul>

### IBM Global Services for System Storage and Storage Networking

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

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



IBM Global Services has a track record in offering services for open and mainframe storage, data migration, installation and support services for IBM and non-IBM environments.

Some examples are:

- IBM Storage Strategy Assessment assists with the vision and strategy, assessment, architecture and conceptual designs to help customers optimize their storage infrastructure to new architectures.
- IBM Planning Services for 3494 Automated Tape Library and Virtual Tape Server can help improve tape storage management and gain control of an often expanding library of tapes.
- IBM Operational Support Services for Tivoli Storage Manager assists customers in the planning and implementation of storage management software.
- IBM Managed Storage Services offer scalable, cost-effective storage capacity, management and backup/restore services on a usage basis.

More information about IBM storage services can be found at [ibm.com/services/storage](http://ibm.com/services/storage).

### IBM Global Financing

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

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