Winning with System x and Storage Sales Guide
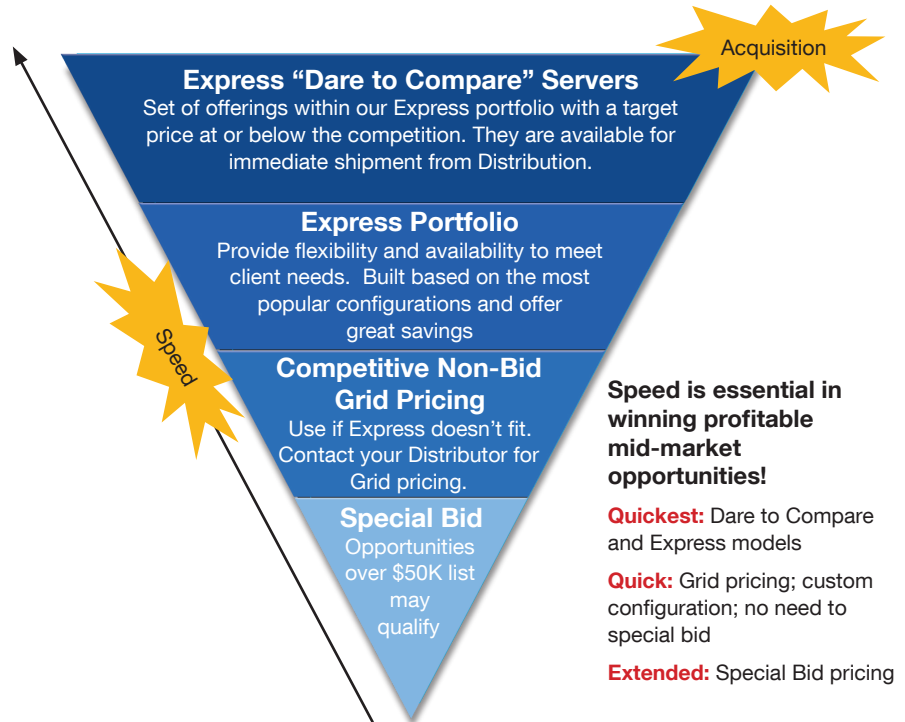
System x3650 M3

IBM

Win with IBM's Sales Strategy!

Steps to maximize server value for your customer:

1. Lead with Express "Dare to Compare" servers for the most competitive price
   - Add options as needed
2. Offer expanded Express Portfolio of servers
   - Add options as needed
3. Offer custom configurations from Grid 1 for opportunities < $50K
4. For orders > $50K
   - Register the opportunity and
   - Use grid pricing for quick, low price quotes
   - Optionally, Special Bid
5. Leverage IBM promotions and incentives on every deal

Acquisition

Speed

Express "Dare to Compare" Servers
Set of offerings within our Express portfolio with a target price at or below the competition. They are available for immediate shipment from Distribution.

Express Portfolio
Provide flexibility and availability to meet client needs. Built based on the most popular configurations and offer great savings

Competitive Non-Bid Grid Pricing
Use if Express doesn't fit. Contact your Distributor for Grid pricing.

Special Bid
Opportunities over $50K list may qualify

Speed is essential in winning profitable mid-market opportunities!

Quickest: Dare to Compare and Express models

Quick: Grid pricing; custom configuration; no need to special bid

Extended: Special Bid pricing

Conversation Starters — Servers and Blades

x86 Server Questions

- What kind of computer system are you using to manage your business critical processes (desktop pc or server)?
- What is the current infrastructure and standard (servers, storage, apps)?
- How many x86 servers do you have? How old are they they?
- What is your server strategy?
- Do you plan to grow your IT infrastructure? If so, how many servers are planned? When? Is there budget appropriated?
- How many clients do these servers need to support? (i.e.) 10, 50, 100, 200, 500, 1000+ users.
- Are any servers deemed 'mission critical'?
- Do you have multiple locations and need a server in each?

Blade Questions

- Are there challenges currently in your IT infrastructure with respect to density, power, heat, or cabling?
- Is there a server 'sprawl' issue (many servers doing only one task – under utilized environment)?
- Is there a need for centralized server management?
- Does your business need to deploy servers rapidly?
- Do you need to lower IT infrastructure costs and complexity?
- Is there a need to consolidate your servers?

System x Servers – Did you know?

- System x servers are extremely scalable and can grow as your business grows.
- IBM has Express offerings in all 1 & 2-way servers.
- IBM System x servers start under $1000.
- Replacing older servers with IBM System x servers can significantly reduce total cost of ownership.
- Dare to Compare models are priced to beat the competition.
- IBM System x servers feature mainframe inspired technology and smart management tools delivering leadership RAS (Reliability, Availability, Serviceability) capabilities.
- x3650 and x3550 M3 rack servers offer an annual power savings of $100 per server with new energy efficient designs, compared to legacy servers.
- IBM System x servers can reduce administration costs up to 35% when running Windows and up to 44% when running Linux.

Blade Servers– Did you know?

- Deploying blades may be an optimal server strategy for IT infrastructure with 5+ servers.
- IBM's BladeCenter chassis has the longest lifecycle in the industry (2002 to present), offering you maximum investment protection.
- IBM blade technology can dramatically reduce power consumption and heat output.
- BladeCenter industry partnerships give you the option of purchasing switch modules from IBM BNT, Cisco, and Brocade
- BladeCenter offers exceptional flexibility when combined with IBM support for many I/O options.

Conversation Starters — Server Consolidation, Virtualization

Server Consolidation Questions

- Is there a need to reduce the number of servers?
- Are there too many servers deployed all doing the same task? (running the same application)
- Can your IT infrastructure grow 'on-demand' as your business grows ?
- Do you need to cut costs and improve TCO?
- Are there servers in the environment that are under utilized?
- How are space constraints affecting your business?

Server Virtualization Questions

- Is there a need to reduce the physical number of servers in the environment?
- Do you have a sense for your average server utilization?
- Do you have a need to rapidly deploy servers?
- Is there a test / dev area that can make use of 'temporary' servers for certain projects?
- Do you need to improve the redundancy or introduce workload balancing into your applications?
- Do you have cycles in your environment where additional servers are required for processing capacity?
- Are there servers in your area that are under utilized?
- Do you have many 1u servers that need to be consolidated?

Server Consolidation – Did you know?

- By consolidating your older servers on the x3650 M3 or x3550 M3, you can reduce your servers 20:1.
- IBM has a variety of industry leading tools, programs and services to maximize utilization of servers and assist in consolidation opportunities.
- IBM is the premier one-stop vendor for hardware, software, services and financing.

Server Virtualization – Did you know?

- Virtualization is a growing trend with customers and can pay huge dividends vs. maintaining separate test & development servers.
- Virtualizing on System x servers and blades allows you to do more work with fewer servers, thereby significantly reducing overall operational costs.
- Some of the workloads benefiting from IBM virtualization capabilities include CRM, Financials, Order Entry & Processing, OLTP (On-line Transaction Processing), Batch Processing, Remote System Support/Admin.
- IBM and VMware (the leading Virtualization software provider) have a joint development agreement.
- You can purchase VMware directly from IBM.

IBM System x and BladeCenter Express Portfolio Guide

Express Server	Processor	Memory	HDD	RAID	Power Supply	Optical Media	Express List Price [1]	IBM Standard Model Comparison	Express Savings	HP ProLiant Server	Dell Power Edge Server	Last Order Date
System x3100 M4 New												
2582EBU	Core i3 2100 -2C 3.1Ghz	1X2GB UDIMMs	4x3.5" SS SATA	C100 (SW)	1 x 350W	DVD-RW	$585	258242U	$173	ML110 G7	T110	6/30/2012
2582EDU	Xeon E3 1220 -4C 3.1Ghz	1X2GB UDIMMs	4x3.5" SS SATA	C100 (SW)	1 x 350W	DVD-RW	$709	258262U	$199	ML110 G7	T110	6/30/2012
2582EEU	Xeon E3 1230 -4C 3.2Ghz	1X4GB UDIMMs	4x3.5" SS SATA	C100 (SW)	1 x 350W	DVD-RW	$819	258262U	$357	ML110 G7	T110	6/30/2012
System x3200 M3												
7328E3U ●	Xeon X3430 4C 2.4GHz	2X4GB RDIMMs	4x3.5" HS SAS/SATA	BR10il	1 x 430W	DVD-ROM	$1,609	7328C1U	$138	ML110 G6	T310	8/31/2012
7328E6U	Xeon X3430 4C 2.4GHz	2x2GB RDIMMs	4x3.5" HS SATA	BR10i	1 x 430W	DVD-ROM	$1,375	7328C2U	$740	ML110 G6	T310	8/31/2012
System x3400 M3												
7380E5U	Xeon E5607 4C 2.26GHz	3x2GB RDIMMs	8x3.5" HS SAS/SATA	M1015	1 x 920W	DVD-ROM	$1,685	7380B2U	$1,128	ML370 G6	T710	9/30/2012
7379E5U	Xeon E5620 4C 2.4GHz	1x2GB RDIMMs	8x3.5" HS SAS/SATA	M1015	1 x 920W	DVD-ROM	$1,699	737956U	$1,124	ML350 G6	T610	9/30/2012
7379E6U	Xeon E5620 4C 2.4GHz	1x2GB RDIMMs	8x2.5" HS SAS/SATA	M1015	1 x 920W	DVD-ROM	$1,805	737958U	$279	ML350 G6	T610	9/30/2012
System x3500 M3												
7380E5U	Xeon E5607 4C 2.26GHz	3x2GB RDIMMs	8x3.5" HS SAS/SATA	M1015	1 x 920W	DVD-ROM	$1,685	7380B2U	$1,128	ML370 G6	T710	9/30/2012
7380E6U	Xeon E5645 6C 2.4GHz	3x4GB RDIMMs	8x3.5" HS SAS/SATA	M1015	1 x 920W	DVD-ROM	$1,959	7380D2U	$809	ML370 G6	T710	9/30/2012
7380E8U	Xeon E5645 6C 2.4GHz	3x4GB RDIMMs	8x2.5" HS SAS/SATA	M5015 + battery	2 x 920W	DVD-ROM	$2,849	7380D2U	$965	ML370 G6	T710	9/30/2012
System x3250 M3												
4252E1U ●	Xeon X3450 4C 2.67GHz	2x2GB UDIMMs	2x3.5" HS SATA	BR10i	1 x 351W	DVD-RW	$1,395	425252U	$537	DL120 G6	R310	8/31/2012
4252E3U ●	Xeon X3440 2.53GHz	2x4GB UDIMMs	2x3.5" HS SATA	BR10i	1 x 351W	DVD-RW	$1,585	425242U	$527	DL120 G6	R310	8/31/2012
System x3250 M4 New												
2583EAU ●	Xeon E3 1220 -4C 3.1Ghz	1X2GB UDIMMs	2x3.5" SS SATA	C100 (SW)	1 x 300W	DVD-RW	$1,089	258362U	$149	DL120 G7	R210	6/30/2012
2583EBU ●	Xeon E3 1230 -4C 3.2Ghz	1X4GB UDIMMs	2x2.5" HS SAS/SATA	C100 (SW)	1 x 460 HS (Optional Redundant)	DVD-RW	$1,759	258372U	$498	DL120 G7	R210	6/30/2012
System x3550 M3												
7944E4U ●	Xeon E5607 4C 2.26GHz	3x2GB RDIMMs	4x2.5" HS SAS/SATA	M1015	1 x 460W	DVD-RW	$1,835	794432U	$916	DL360 G7	R610	9/30/2012
7944E5U ●	Xeon E5649 6C 2.53GHz	3x2GB RDIMMs	4x2.5" HS SAS/SATA	M1015	1 x 460W	DVD-RW	$2,469	794462U	$1,505	DL360 G7	R610	9/30/2012
7944E6U ●	Xeon X5650 6C 2.66GHz	3x4GB RDIMMs	4x2.5" HS SAS/SATA	M1015	2 x 675W	DVD-RW	$3,255	7944J4U	$1,519	DL360 G7	R610	9/30/2012
System x3620 M3												
7944E4U ●	Xeon E5607 4C 2.26GHz	3x2GB RDIMMs	4x2.5" HS SAS/SATA	M1015	1 x 460W	DVD-RW	$1,835	794432U	$916	DL360 G7	R610	9/30/2012
7944E5U ●	Xeon E5649 6C 2.53GHz	3x2GB RDIMMs	4x2.5" HS SAS/SATA	M1015	1 x 460W	DVD-RW	$2,469	794462U	$1,505	DL360 G7	R610	9/30/2012
7944E6U ●	Xeon X5650 6C 2.66GHz	3x4GB RDIMMs	4x2.5" HS SAS/SATA	M1015	2 x 675W	DVD-RW	$3,255	7944J4U	$1,519	DL360 G7	R610	9/30/2012

● — Dare to Compare Model
(1) List price reflects October 3, 2011 Price File

IBM System x and BladeCenter Express Portfolio Guide (cont'd)

Express Server	Processor	Memory	HDD	RAID	Power Supply	Optical Media	Express List Price [1]	IBM Standard Model Comparison	Express Savings	HP ProLiant Server	Dell Power Edge Server	Last Order Date
System x3630 M3												
7377E1U ●	2x Xeon E5620 4C 2.4GHz	6x2GB RDIMMs	4x1TB 3.5" HS SAS/SATA	M5015	2 x 675W	None	$4,465	737742U	$2,190	DL180 G6	R510	8/31/2012
7377E2U ●	2x Xeon E5620 4C 2.4GHz	6x2GB RDIMMs	6x1TB 3.5" HS SAS/SATA	M5015	2 x 675W	None	$5,389	737742U	$2,155	DL180 G6	R510	8/31/2012
System x3650 M3												
7945E4U ●	Xeon E5607 4C 2.26GHz	3x2GB RDIMMs	8x2.5" HS SAS/SATA	M1015	1 x460W	DVD-RW	$1,915	794532U	$940	DL380 G7	R710	9/30/2012
7945E5U ●	Xeon E5620 4C 2.4GHz	3x2GB RDIMMs	8x2.5" HS SAS/SATA	M1015	1 x460W	DVD-RW	$2,099	7945D4U	$936	DL380 G7	R710	9/30/2012
7945E6U ●	Xeon E5649 6C 2.53GHz	3x4GB RDIMMs	8x2.5" HS SAS/SATA	M1015	2 x460W	DVD-RW	$2,799	794562U	$1,635	DL380 G7	R710	9/30/2012
7945E7U ●	2x Xeon X5675 6C 3.06GHz	6x4GB RDIMMs	8x2.5" HS SAS/SATA	M5015 + battery	2 x675W	DVD-RW	$6,469	794572U	$1,344	DL380 G7	R710	9/30/2012
7945E8U ●	Xeon E5649 6C 2.53GHz	3x4GB RDIMMs	8x2.5" HS SAS/SATA	M5015 + battery	2 x460W	DVD-RW	$3,279	794562U	$1,334	DL380 G7	R710	9/30/2012
System x3690 X5												
7148E3U	2x Xeon X7550 8C 2.0GHz	4x4GB RDIMMs	4x2.5" HS SAS/SATA	M5015 + battery	2 x675W	None	$11,745	79483SU	$12,637	NA	R810	11/30/2011
IBM Blade Center S												
8886EVU	Blade Chassis	See Blade	6x3.5" HS SAS/SATA (1 Enclosure)	See Blade	4 x 950/1450W	DVD-RW	$10,779	88861TU	$1,236	NA	NA	6/30/2014
8886ETU	Blade Chassis	See Blade	6x3.5" HS SAS/SATA (1 Enclosure)	See Blade	4 x 950/1450W	DVD-RW	$4,449	88861MU	$1,987	NA	NA	6/30/2014
IBM Blade Center HS22												
7870E1U	Xeon E5607 4C 2.26GHz	3x4GB RDIMMs	2x2.5" HS SAS/SATA	M1015	NA	None	$1,429	7870A7U	$804	BL460 G7	M710	6/30/2012
7870E2U ●	2x Xeon E5649 6C 2.53GHz	6x4GB RDIMMs	2x2.5" HS SAS/SATA	M1015	NA	None	$3,255	7870B6U	$1,326	BL460 G7	M710	6/30/2012
7870E3U	2x Xeon X5675 6C 3.06GHz	3x8GB RDIMMs	2x2.5" HS SAS/SATA	M1015	NA	None	$6,269	7870C6U	$1,212	BL460 G7	M710	6/30/2012
IBM Blade Center HS22V												
7871E2U	2x Xeon E5649 6C 2.53GHz	6x8GB RDIMMs	2x1.8" SSD	M1015	NA	None	$4,445	7871B6U	$1,200	BL490 G7	M710	6/30/2012
7871E3U	2x Xeon X5675 6C 3.06GHz	12x8GB RDIMMs	2x1.8" SSD	M1015	NA	None	$7,999	7871C6U	$1,580	BL490 G7	M710	6/30/2012
IBM Blade Center x3850 X5												
7145E4U	2x Xeon X7550 8C 2.0GHz	8x4GB RDIMMs	8x2.5" HS SAS/SATA	M5015	1 x1975W	None	$14,759	71454RU	$1,490	DL580 G6	R910	11/30/2011

● — Dare to Compare Model

(1) List price reflects October 3, 2011 Price File

IBM System x Servers optimized for Midmarket

Model	Positioning	Form Factor	Processor Sockets/ Maximum Cores	Processor Type (Maximum Cores)	HDD Type	Maximum # of HDDs	Maximum Memory	Maximum I/O Slots	Sample Applications
Tower Servers: Distributed environments, need for large HDD capacity, expandable, high quality, desk-side server									
New x3100 M4	Entry Value	Tower (Mini 4U)	Intel Xeon (4 core)	1/4	SS SATA	(4) 3.5"	4 UDIMMs / 16GB	(4) PCIe	File & Print, Email, Point of Sale
x3200 M3	Reliable Entry Server	Tower (rackable 5U)	Intel Xeon (4 core)	1/4	SAS and SATA (SS and HS)	(4) 3.5" (8) 2.5"	4 UDIMMss / 16GB 6 RDIMMs / 32GB	(4) PCie and (2) PCI	File & Print, Email, Point-of-sales
x3400 M3	Value Entry Server	Tower (rackable 5U via CTO)	Intel Xeon (6 core)	2/12	SAS and SATA (SS and HS)	(8) 2.5" or (4) 3.5" (16) 2.5" or (8) 3.5"	16 RDIMMs / 128GB 12 UDIMMss / 48GB	(5) PCie and (1) PCt; opt. (1) PCie or (2) PCI-X	File & Print, Email, Branch Office
x3500 M3	Business-Critical All-in-one Server	Tower (rackable 5U via CTO)	Intel Xeon (6 core)	2/12	SAS and SATA (HS)	(8) 2.5" or (16) 2.5" (24) 2.5" or (8) 3.5"	16 RDIMMs / 192GB 12 UDIMMss / 48GB	(6) PCie and (1) PCt; or (5) PCie, (2) PCI-X and (1)PCI	Virtualization, ERP/CRM, Branch Office
Rack Optimized Servers: Ideal platform for existing investment in a rack IT infrastructure, best design for business productivity workloads									
x3250 M3	Entry Infrastructure Servers	1U Rack	Intel Xeon (4-core)	1/4	SAS and SATA (SS and HS)	(2) 3.5" (4) 2.5"	4 UDIMMs/16 GB 6 RDIMMs/32 GB	(2) PCie	Security, Collaboration, Web Serving
New x3250 M4	Entry Value	1U Rack	Intel Xeon (4 core)	1/4	SAS & SATA (SS & HS)	(2) 3.5" (4) 2.5"	4 UDIMMs / 16GB	(2) PCie	File & Print, Email, Branch Office, Web Serving
x3550 M3	Business Critical Compact Application Servers	1U Rack	Intel Xeon (6-core)	2/12	SAS, SATA, SSD (HS): or SSD (SS)	(8) 2.5"	18 RDIMMs/288 GB	(2) PCie; or (1) PCie and (1) PCI-x or (2) PCI-X	Database, Collaboration, Web Serving
x3620 M3	Cost-effective 2U storage server	2U Rack	Intel Xeon (6-core)	2/12	SAS, SATA, (HS): or SSD (SS)	(4) 2.5" (8) 3.5"	12 RDIMMs/192 GB	(3) PCie	File/print sharing, Video/ photo sharing, Email
x3630 M3	2U storage-rich server	2U Rack	Intel Xeon (6-core)	2/12	SAS or SATA (HS)	(12/14) 3.5"; (24/28) 2.5"	12 RDIMMs/192 GB	(2) PCie	Online gaming, File/print sharing, Video/ photo sharing, Email
x3650 M3	Flagship Business-Critical Expandable Server	2U Rack	Intel Xeon (6-core)	2/12	SAS, SATA, SSD (HS)	(12/14) 3.5" (24/28) 2.5"	18 RDIMMs/288 GB	(4) PCie; or (2) PCie and (1) or (2) PCI-X	Database, Virtual Desktop, Virtualization
x3690 X5	High-Performance, High Density Scalable 2-Socket Server	2U-3U Rack	Intel Xeon (10-core)	2/12	SAS, SATA, SSD (HS)	(16) 2.5 SAS (24) 1.8" SSD	32 DIMMs/1T / 64 DIMMs/2TB (with MAX5)	(4) x8 PCie or (2) x8 PCie (1) x16PCie	Database, Collaboration, Web Serving, ERP/ CRM
x3850 X5 and x3950 X5	Scalable 4-Socket System with Maximum Memory for Enterprise Applications	4U-10U Rack	Intel Xeon (10-core)	4/40 (1 chassis) or 8/80 (2 chassis)	SAS, SATA, SSD (HS)	(8) 2.5" SAS/SATA (16) 1.8" SSD 1 chassis); (16) 2.5" SAS/SATA (32) 1.8" SSD (2 chassis)	64 DIMMs/2TB (1 chassis); 128 DIMMs/4TB (2 chassis); 192 DIMMs/6TB (2 chassis +2 MAX5)	(7) PCie (1 chassis); (14) PCie (2 chassis)	ERP, Database, Virtualization
Blade Servers: Manage servers, networking, storage and applications from a single point, highly efficient and flexible scale out IT infrastructure									
HS22	Mainstream Virtualization Blade Server with Expanded Memory Capacity	1 bay (30 mm)	Intel Xeon (6 core)	2/12	SAS, SATA, SSD (HS)	(2) 2.5"	12 DIMMs 192 GB	(2) PCie	Virtualization, Collaboration/Email, Hosted Client, Clusters, SAP
HS22V	Mainstream Virtualization Blade Server with Huge Memory Capacity	1 bay (30 mm)	Intel Xeon (6 core)	2/12	SSD (Fixed)	(2) 1.5"	18 DIMMs 288 GB	(2) PCie	Virtualization, Collaboration/Email, Hosted Client, Web Serving, SAP/Database

November 2011

Select the Right System x Server for the Right Workload

Legend: 🟥 - Important   🟦 - Nice to Have   ⬜ - Can do Without   ● -Best   ◐ -Better   I -Good

Theme	Key Workloads	Scalability	Floating Point Performance	Memory Throughput	Integer Performance	I/O and Storage	Density	High Availability	Systems Management	Security	Distributed Deployment	x3100 M4 (New)	x3200 M3	x3400 M3	x3500 M3	x3250 M3 (New)	x3250 M4	x3550 M3	x3620 M3	x3630 M3	x3650 X5	x3690 X5	x3830 X5	x3950 X5	HS22	HS22V
HPC	Cluster/HPC		🟥	🟥	🟦	🟦	🟥									◐	◐	●	●	I	●	I	I	I	●	●
	Modeling & Simulation	🟦	🟥	🟥	🟥		🟥									◐	◐	●	◐	●	◐	◐	◐	◐	◐	◐
	High performance DB	🟦	🟦	🟥	🟥	🟥		🟦	🟦							I	I	◐	●	◐	●	◐	●	◐	◐	◐
	Business Intelligence	🟦	🟥	🟥	🟦	🟦	🟥		🟥	🟦						I	I	◐	◐	◐	◐	◐	●	●	◐	◐
Web 2.0/ Web 3D	Search		🟥	🟥			🟥			🟥	🟦					I	I	●	●	●	●	I	I	I	●	●
	Content	🟦		🟥	🟦		🟥									●	●	◐	●	●	●	I	◐	I	◐	◐
	Communities	🟦	🟥	🟥		🟦	🟦									I	I	●	●	●	●	●	I	◐	◐	◐
	Commerce	🟦	🟥	🟥		🟦	🟦		🟦							I	I	●	●	●	●	●	I	◐	◐	◐
	Collaboration	🟦		🟦			🟦	🟦	🟦							●	●	●	●	●	●	I	I	I	◐	◐
Business Applications	ERP/SCM	🟥	🟦		🟥		🟥	🟥	🟥	🟥	🟦	I	I	◐	●	I	I	●	●	●	●	●	●	●		
	CRM	🟥	🟥	🟥	🟥		🟥	🟥	🟥	🟥	🟦	I	◐	◐	●	I	I	●	●	●	●	●	●	●		
	Hosted Client	🟦	🟥	🟥	🟥		🟥	🟥	🟦			I	I	◐	◐	I	I	I	I	I	I	●	I	◐		
	Point of Sale				🟥	🟦						●	●	◐	I											
	Branch Office	🟥				🟥	🟥		🟥	🟦	🟦	●	●	●	●	●	●	●	●	●	I	I	I	●	◐	
Infrastructure Applications	Virtualization	🟥	🟦	🟥		🟦		🟥	🟥			I	I	I	●	I	I	◐	●	●	●	●	●	●	●	
	Business Continuity	🟦				🟥		🟥	🟦			I	I	I	◐	I	I	◐	◐	◐	◐	●	◐	◐		
	Database	🟦	🟥	🟦	🟦		🟥	🟦	🟥			I	I	I	●	I	I	◐	●	●	●	●	●	●		
	Email/Collaboration	🟦		🟦		🟥		🟦	🟥			●	●	●	◐	◐	◐	●	◐	●	●	◐	I	I	●	
	Security	🟦	🟦	🟦	🟦		🟥		🟥	🟥		●	●	◐	●	●	●	◐	◐	◐	◐	I	I	●	●	
	Web Serving		🟦		🟦							◐	◐	◐	●	◐	◐	●	●	●	◐	◐	I	I	◐	
	File & Print	🟦		🟦		🟥	🟦		🟥			●	●	●	◐	●	●	◐	●	●	●	◐	I	I	●	◐

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Quick Reference Guide IBM System Storage™ DS3500 Express

Offers substantial performance and functionality starting at entry-level prices designed with key features and benefits for implementing storage consolidation and virtualization projects

START with the DS3500 // Four native 6 Gbps SAS host ports in a dual controller configuration. Ideal for shared direct-attached storage (up to two highly available servers) and IBM BladeCenter®

- Enables high performance shared storage to improve efficiencies
- Provides booting and shared storage for IBM BladeCenter
- As business needs change, choose from one of the four field installable network interfaces

Note: With dual controllers, if a daughter card is added, an identical daughter card must be added to the second controller. iSCSI and FC host port intermix not supported.

1. **Add 6Gbs SAS daughter cards** (two additional 6Gbs host ports per daughter card)
   - Can support up to eight SAS host ports (dual controller)
   - Further expands shared DAS capabilities – connects up to four highly available servers
   - Suited for customers without extended distance requirements

2. **Or add 8Gbs FC daughter cards** (four additional 8Gbs host ports per daughter card)
   - Can support up to eight FC host ports and four SAS host ports (dual controller)
   - Great for demanding implementations in SMB environments, remote sites or departments
   - Suited for new SANs or addition to an existing SAN

3. **Or add 10Gbs iSCSI daughter cards** (two additional 10Gbs host ports per daughter card)
   - Can support up to four 10Gbs iSCSI host ports and four SAS host ports (dual controller)
   - Great for demanding SAN implementations in SMB environments, remote sites, or departments
   - Suited for new SANs or addition to an existing SAN

4. **Or add 1Gbs iSCSI daughter cards** (four additional 1Gbs host ports per daughter card)
   - Can support up to eight 1Gbs iSCSI host ports and four SAS host ports (dual controller)
   - Simple and straightforward IP SAN solution
   - Well suited for low-cost storage networking environments to consolidate storage

Mention DS3500 when your customer:

- Purchases any System x, BladeCenter or Power Systems servers
- Implements new applications
- Finds servers are running out of internal capacity
- Implements a server or storage consolidation project
- Looks to increase reliability and security (legal compliance)
- Installs VMware vSphere or MS HyperV solutions
- Requires backup and recovery

Key Value Propositions:

- Affordable storage with midrange performance and scalability
- Simple and powerful storage management
- Concurrent host connectivity (SAS + FC or iSCSI)
- Support for mixed drive types enables tiered storage
- Relentless security and data protection
- NEBs and ETSI support for ruggedized environments
- Balanced performance suited for virtualization
- Turbo performance premium feature provides increased throughput for more bandwidth demanding applications

Server-led Elevator Pitch:

Ask these questions to start the discussion:

1. What application(s) will you be running with your server?
   - Do you require continuous access to this application?
   - Can internal disks support capacity requirements in 2-4 years?
   - Does data need to be shared with other applications or servers?
2. Do you need a storage system to support the performance and consolidation demands of server virtualization?
3. Do you have a disaster recovery plan? Have you tested it and were you satisfied with the recovery time?

IBM System Storage™ DS3500 Express Fully Configured in Five Easy Steps

1. Select the DS3500 controller based on HDD type,
   (a) 3.5" drives or (b) 2.5" drives and power requirements.
2. Add optional Network Interface Cards.
3. Add optional Controller Options.
4. Add HDD Expansion Units to add capacity (192 Drive Support).
5. Select additional features per customer requirements.

1 a	12 x 3.5" HDD Controller	2	Network Interface Options	5	Upgrades (cont'd)
1746A2S	DS3512 Single Controller	68Y8433	1Gbs iSCSI 4 Port Daughter Card	68Y8458	AIX/VIOS Host Kit
1746A2D	**DS3512 Dual Controller**	68Y8431	6Gbs SAS 2 Port Daughter Card	68Y8459	Linux on Power Host Kit
49Y1876	1TB 3.5" 7.2K 6Gb NL SAS HDD	68Y8432	8Gbs FC 4 Port Daughter Card	68Y8461	HP-UX Host Kit
49Y1871	2TB 3.5" 7.2K 6Gb NL SAS HDD	81Y9613	10Gbs iSCSI 2 Port Card Daughter Card	94Y8434	Mac OS Host Kit
81Y9886	3TB 3.5" 7.2K 6Gb NL SAS HDD	**3**	**Controller Options**	68Y8436	4 to 8 Partition Upgrade
49Y1856	300GB 3.5" 15K 6Gb SAS HDD	68Y8434	2GB Cache Upgrade	68Y8437	4 to 16 Partition Upgrade
49Y1861	450GB 3.5" 15K 6Gb SAS HDD	69Y2871	Turbo Performance	68Y8438	4 to 32 Partition Upgrade
49Y1866	600GB 3.5" 15K 6Gb SAS HDD	68Y8490	Full Disk Encryption (FDE)	68Y8439	4 to 64 Partition Upgrade
49Y1947	600GB 3.5" 15K 6Gb SAS HDD SED	68Y8479	DS3500 Second Controller	68Y8441	8 to 16 Partition Upgrade
1 b	**24 x 2.5" HDD Controller**	**4**	**Expansion Options**	68Y8442	8 to 32 Partition Upgrade
1746A4S	DS3524 Single Controller	1746A2E	EXP3512 Storage Expansion (12 x 3.5")	68Y8443	8 to 64 Partition Upgrade
1746A4D	**DS3524 Dual Controller**	1746A4E	EXP3524 Storage Expansion (24 x 2.5")	68Y8445	16 to 32 Partition Upgrade
1746T4D	DS3524 DC Power Dual Controller	1746T4E	EXP3524 DC Power Storage Exp (24 x 2.5")	68Y8446	16 to 64 Partition Upgrade
49Y1851	500GB 2.5" 7.2K 6Gb NL SAS HDD	69Y0245	EXP3500 Environmental Services Module (ESM)	68Y8448	32 to 64 Partition Upgrade
81Y9872	1TB 2.5" 7.2K 6Gb NL SAS HDD	**5**	**Upgrades**	68Y8440	4 to 128 Partition Upgrade
49Y1841	146GB 2.5" 15K 6Gb SAS HDD	81Y9620	96 to 192 Drive Expansion	68Y8444	8 to 128 Partition Upgrade
49Y1836	300GB 2.5" 10K 6Gb SAS HDD	68Y8451	FlashCopy: Base	68Y8447	16 to 128 Partition Upgrade
49Y1952	300GB 2.5" 10K 6Gb SAS HDD SED	68Y8452	FlashCopy: Upgrade to 8/volume & 64/system	68Y8449	32 to 128 Partition Upgrade
49Y2048	600GB 2.5" 10K 6Gb SAS HDD	68Y8453	Volume Copy: Base	68Y8450	64 to 128 Partition Upgrade
81Y9915	900GB 2.5" 10K 6Gb SAS HDD	68Y8454	FlashCopy Base / Volume Copy Base		**Out-of-the-box includes:**
81Y9903	200GB 2.5" SAS SSD	68Y8455	Remote Mirroring: Base		4 partitions, 2 FlashCopy images, Windows, Linux (on Intel), and VMware host attachment
81Y9907	400GB 2.5" SAS SSD	81Y9622	Remote Mirroring: 16 Upgrade		

Quick Reference Guide IBM System Storage™ EXP2500 Express

IBM has combined best-of-breed development with leading 6 Gbps host interface and drive technology in the EXP2500, a cost effective, fully integrated complement to System x and BladeCenter servers

Easy to manage, flexible and extendable, the EXP2500 is a disk expansion unit designed to work for exclusive direct-attach to System x servers via ServeRAID M5025 controller and BladeCenter via the IBM BladeCenter SAS Connectivity Module and IBM ServeRAID MR10ie (CIOv) Controller

EXP2512 supports 12 x 3.5" HDDs

- M5025 is capable of supporting 18 x EXP2512 enclosures

EXP2524 supports 24 x 2.5" HDDs

- M5025 is capable of supporting 9 x EXP2524 enclosures

RAID Part Numbers for System x Connectivity

- 46M0830 ServeRAID M5025 SAS/SATA Controller
- 46M0930 ServeRAID M5000 Series Advanced Feature Key

RAID Part Numbers for BladeCenter Connectivity

- 46C7167   ServeRAID MR10ie (CIOv) with Battery (BladeCenter)
- 39Y9195   SAS Connectivity Module

Mention EXP2500 when your customers:

- Are running out of space with their current servers
- Are implementing a storage-demanding application
- Need an affordable solution to support growth
- Have or are planning to buy System x servers
- Need a solution with great capacity expansion
- Plan on leveraging Virtualization with Direct Attach Storage

Key Value Propositions:

- Support data growth in a cost-effective way
- Excellent ease-of-use and price per performance
- Scalability, M5025 RAID adapter supports 200+ HDDs
- Capacity, 36TB in one EXP3512 with 3TB NL SAS HDD
- Performance, 15k SAS and SSD support
- Hard drive intermixing supports multiple storage tiers
- Enclosure-based intermixing supports 2.5" and 3.5" HDDs
- High availability and reliability, dual power supplies and fans
- M5025 Supports RAID levels 0, 1, 5, 10, and 50
- RAID 6 and 60 support withM5000 Advanced Feature Key

3.5" EXP2512 Part Numbers

- 174712X EXP2512 Express Storage Enclosure
- 69Y0243 EXP2500 Environmental Services Module (ESM)
- 49Y1899 300GB 3.5" 15K 6Gb SAS HDD
- 49Y1900 450GB 3.5" 15K 6Gb SAS HDD
- 49Y1901 600GB 3.5" 15K 6Gb SAS HDD
- 49Y1903 1TB 3.5" 7.2k 6Gb NL SAS HDD
- 49Y1902 2TB 3.5" 7.2k 6Gb NL SAS HDD
- 90Y8720 3TB 3.5" 7.2K 6Gb NL SAS HDD

2.5" EXP2524 Part Numbers

- 174724X EXP2524 Express Storage Enclosure
- 69Y0243 EXP2500 Environmental Services Module (ESM)
- 49Y1895 300GB 2.5" 10K 6Gb SAS HDD
- 81Y9596 600GB 2.5" 10K 6Gb SAS HDD
- 81Y9948 900GB 2.5" 10K 6Gb SAS HDD
- 49Y1896 146GB 2.5" 15K 6Gb SAS HDD
- 81Y9944 300GB 2.5" 15K 6Gb SAS HDD
- 49Y1898 500GB 2.5" 7.2k 6Gb NL SAS HDD
- 81Y9952 1TB 2.5" 7.2K 6Gb NL SAS HDD
- 81Y9956 200GB 2.5" SAS SSD
- 81Y9960 400GB 2.5" SAS SSD

Quick Reference Guide IBM System Storage™ LTO Tape Express

IBM System Storage TS2250 and TS2350 Tape Drive Express, TS2900 Tape Autoloader Express and TS3100 & TS3200 Tape Library Express support the newest generation of LTO 5 technology to help cost-effectively handle growing storage requirements

Key questions:

- Do you require archiving of your digital content?
- Are you looking for a cost-effective solution for long-term archival?
- Do you have increasing regulatory requirements driving the need for security of data for audit and compliance?
- Do you need better accessibility, durability and longevity for your increased data?
- Are you looking for architecture with a defined roadmap that will cover future growth capacity needs?

Key Value Propositions:

- Helps significantly lower overall backup recovery costs with lower acquisition costs & savings in energy & space vs. Disk
- Data encryption simplifies regulatory compliance and risk management by securing information on tape at no additional cost
- IBM Patented technologies help enhance performance and reliability when used with IBM branded Media
- Nearly four LTO 3 cartridges will fit on one LTO 5 cartridge

Top reasons why IBM is better:

- IBM offers a full line of LTO 5 tape drive with its Full-Height and Half-Height form factors
- IBM technology helps enhance performance, operation & reliability of the drives while extending media life
- IBM is the developer of the unique Long Term File System that enables LTO 5 Tape Media with greater capabilities
- IBM offers a completely integrated Data Protection & Retention solution

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Standalone LTO 5 Tape Drive
- 3580S5X TS2350 Full Height 6 Gbps SAS Drive (LTO 5)
- 3580S5E TS2250 Half Height 6 Gbps SAS Drive (LTO 5)

LTO 5 Tape Autoloader
- 3572S5R TS2900 LTO 5 Half Height 6 Gbps SAS Drive (1U)

LTO 5 Tape Media
- 46C2084 LTO 5 Data Cartridge (5-pack)

Tape Library
- 35732UL TS3100 (2U Driveless)
- 35734UL TS3200 (4U Driveless)
- 46X2682 LTO 5 Full Height 8Gbps FC Drive
- 46X2684 LTO 5 Half Height 8Gbps FC Drive
- 46X2683 LTO 5 Full Height 6Gbps SAS Drive
- 46X2685 LTO 5 Half Height 6Gbps SAS Drive

Online Resources

External Web Pages

IBM Express Servers and Storage **www.ibm.com/systems/express**
IBM Express Servers and Storage Mobile Site **www.ibm.com/systems/expressmobile**

System x

PartnerWorld:

Express Portfolio **www.ibm.com/partnerworld/wps/servlet/ContentHandler/ExpressPortfolio**
Dare to Compare **www.ibm.com/partnerworld/wps/servlet/ContentHandler/SGDC173540J19705Z78**
High Volume Master Resource Kit **www.ibm.com/partnerworld/wps/servlet/mem/ContentHandler/sxHVmk.skit**
Programs, Promotions & Incentives: **http://www.ibm.com/partnerworld/wps/servlet/ContentHandler/SGDE099626B61123O49**
System x Web Navigation CheatSheet: **https://www.ibm.com/partnerworld/wps/servlet/mem/ContentHandler/xcheatsheet**

At-A-Glance:

IBM System x3100 M4 - **www.redbooks.ibm.com/abstracts/tips0811.html?Open**   IBM System x3250 M4 - **www.redbooks.ibm.com/abstracts/tips0812.html?Open**
IBM System x3200 M3 - **www.redbooks.ibm.com/abstracts/tips0802.html?Open**   IBM System x3550 M3 - **www.redbooks.ibm.com/abstracts/tips0804.html?Open**
IBM System x3400 M3 - **www.redbooks.ibm.com/abstracts/tips0808.html?Open**   IBM System x3620 M3 - **www.redbooks.ibm.com/abstracts/tips0806.html?Open**
IBM System x3500 M3 - **www.redbooks.ibm.com/abstracts/tips0809.html?Open**   IBM System x3630 M3 - **www.redbooks.ibm.com/abstracts/tips0807.html?Open**
IBM System x3250 M3 - **www.redbooks.ibm.com/abstracts/tips0803.html?Open**   IBM System x3650 M3 - **www.redbooks.ibm.com/abstracts/tips0805.html?Open**

Storage

PartnerWorld:

DS3500 Express: **www.ibm.com/partnerworld/wps/servlet/mem/ContentHandler/CF_7757USEN/lc=en_US**
Partner Community DS Series Portal: **ibmdsseries.com**

At-A-Glance:

DS3500 Express **http://www.redbooks.ibm.com/abstracts/TIPS0836.html**
TS2900 Tape Autoloader **http://www.redbooks.ibm.com/abstracts/TIPS0833.html**
TS3100 and TS3200 Tape Libraries **http://www.redbooks.ibm.com/abstracts/TIPS0832.html**