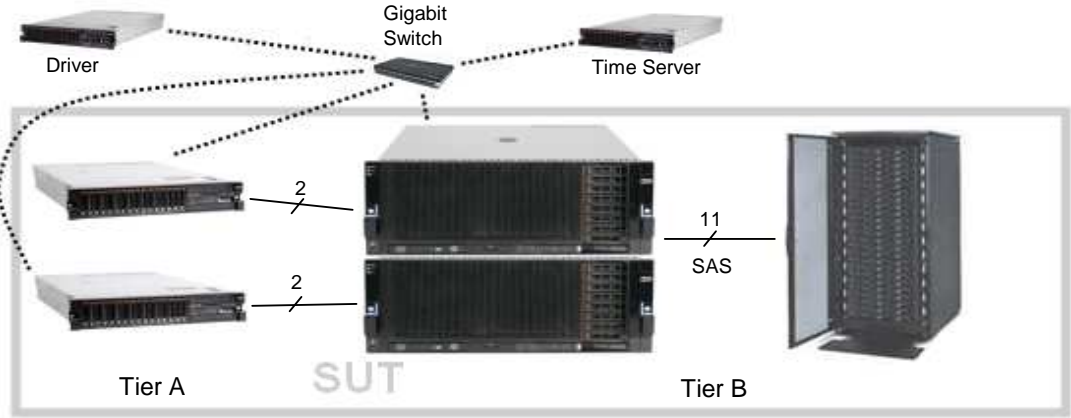
	IBM® System x® 3850 X5 Microsoft® SQL Server 2008 R2		TPC-E 1.12.0 TPC Pricing 1.6.0
			Report Date: August 26, 2011
			Revision Date: August 26, 2011
TPC-E Throughput 4593.17 tpsE	Price/Performance \$140.56 USD per tpsE	Availability Date August 26, 2011	Total System Cost \$645,605 USD
Database Server Configuration			
Operating System Microsoft Windows Server 2008 R2 Enterprise Edition SP1	Database Manager Microsoft SQL Server 2008 R2 Enterprise Edition	Processors/Cores/Threads 8/80/160	Memory 2048GB
			
2 x IBM x3650 M3, each with: - 2 x Intel Xeon Processor X5650 2.66GHz (2 Procs/12 Cores/24 Threads) - 8GB Memory - 2 x 250GB SFF SATA (RAID-1) - 1 x IBM ServeRAID M1015 - Onboard Quad Gb Ethernet	IBM System x3850 X5, with: - 8 x Intel Xeon Processor E7-8870 2.40GHz (8 Procs/80 Cores/160 Threads) - 2048GB Memory - 2 x 250GB SFF SATA (RAID-1) - 6 x 600GB 10K SAS (RAID-10) - 1 x IBM ServeRAID M5015 - 11 x IBM ServeRAID M5025 - Onboard Quad Gb Ethernet - NetXtreme Dual Gb Ethernet	11 x IBM EXP2524 JBOD Enclosures, with: - 143 x 200GB 2.5" SAS SSD (11 x 13-drive RAID-5 DB data) - 10 x 600GB 10K 2.5" SAS (RAID-5 60-Day space) 153 Total External Drives	
Initial Database Size 18,463 GB	Redundancy Level: 1 RAID-10 Log RAID-5 Data	Storage 2 x 250GB 2.5" 7.2K SATA 143 x 200GB 2.5" SAS SSD 16 x 600GB 2.5" 10K SAS	



IBM System x3850 X5 Microsoft SQL Server 2008 R2

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Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
IBM System x3850 X5 Configure-To-Order, includes:	7143AC1	1	37,643	2	75,286	
x3850 X5/x3950 X5 Base	7626	1		2		
x3850 X5/x3950 X5 System Planar	A14C	1		2		
IBM 1975W Power Supply	2111	1		4		
Intel Xeon Processor E7-8870 10C (2.40GHz 30MB L3 8S)	A14L, A14Y	1		8		
IBM UltraSlim Enhanced SATA DVD-ROM	4161	1		2		
IBM x3850 X5 and x3950 X5 Memory Expansion Card	A14D	1		16		
16GB (1x16GB) QuadRank PC3-8500 1066MHz LP RDIMM	46C7483	1	899	128	115,072	
IBM x3850 X5 QPI Scalability Kit	46M0072	1	1,795	1	1,795	
IBM ServeRAID-M5015 SAS/SATA Controller	46M0829	1		1	449	
IBM 250GB 7200 NL SATA 2.5" SFF HS HDD	81Y9722	1		2	578	
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	49Y2003	1		6	4,794	
IBM ServeRAID-M5025 SAS/SATA Controller	46M0830	1		11	7,139	
ServeRAID M5000 Series Performance Accelerator Key	81Y4426	1		11	4,389	
IBM Preferred Pro USB Keyboard	40K9584	1		1	29	
IBM 2-Button Optical Mouse - Black - USB	40K9200	1		1	19	
NetXtreme II 1000 Express Ethernet Adapter	39Y6066	1		1	139	
ServicePac for 3-Year 24x7x4 Support (x3850 X5)	84Y2233	1	1,250	2		2,500
Hanns-G 17" 5ms Widescreen LCD Monitor (2 spares)	HW-173ABB	3	120	3	360	
				Subtotal	210,049	2,500
Server Storage						
IBM S2 42U Standard Rack	93074RX	1	1,299	1	1,299	
IBM System Storage EXP2524 Storage Enclosure	174724X	1	3,999	11	43,989	
IBM System Storage EXP2524 Storage Enclosure (spares)	174724X	1	3,999	2		7,998
IBM 1M SAS cable	39R6529	1	119	11	1,309	
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	49Y2003	1		10	7,990	
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD (spares)	49Y2003	1		2		1,598
200GB, 2.5" XceedIOPS SAS Solid-State Drive, eMLC	SG9XCA2E200GE01	4	1,800	143	257,400	
200GB, 2.5" XceedIOPS SAS Solid-State Drive, eMLC (spares)	SG9XCA2E200GE01	4	1,800	15		27,000
				Subtotal	311,987	36,596
Server Software						
SQL Server 2008 R2 Enterprise Edition	810-08527	2	23,848	8	190,784	
Windows Server 2008 R2 Enterprise Edition	P72-04217	2	3,999	1	3,999	
Microsoft Problem Resolution Services	N/A	2a	259	1		259
				Subtotal	194,783	259
Client Hardware						
IBM System x3650 M3 Configure-To-Order, includes:	7945AC1	1	5,532	2	11,064	
System Common Planar for 1U/2U	5663			2		
IBM System x3650 M3 Base with 675W AC power supply	5694			2		
Intel Xeon Processor X5650 6C 2.66GHz 12MB 1333MHz 95w	4589, 7709			4		
IBM System x3650 M3 8 HDD Kit	1745			2		
2GB PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	8934			8		
PCI-Express (2 x8 slots) Riser Card	3734, 5086			4		
ServeRAID M1015 SAS/SATA Controller	0095			2		
IBM UltraSlim Enhanced SATA DVD-ROM	4161			2		
Dual port 1Gb Ethernet daughter card	3585			2		
IBM 250GB 7200 NL SATA 2.5" SFF HS HDD	81Y9722	1	289	4	1,156	
ServicePac for 3-Year 24x7x4 Support (x3650 M3)	21P2078	1	660	2		1,320
				Subtotal	12,220	1,320
Client Software						
Microsoft Windows Server 2008 R2 Standard Edition	P73-04980	2	1,029	2	2,058	
				Subtotal	2,058	0
Infrastructure						
Ethernet Cables (2 spares)	RCW-717	3		6	18	
				Subtotal	18	0
				Total	731,115	40,675
Dollar Volume Discount (See Note 1)	29.85%	1			86,550	
Microsoft Open Program Discount Schedule	20.11%	2			39,635	
Pricing: 1 - IBM - 1-800-656-0833, x35330; 2 - Microsoft; 3 - newegg.com; 4 - ClearComm				Three-Year Cost of Ownership USD:		\$645,605
Note 1: Discount applies to all line items where Pricing=1; pricing is for these or similar quantities.				TPC-E Throughput:		4,593.17
Discounts for similarly sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.				\$ USD/tpsE:		\$140.56
S: One or more components of the measured configuration have been substituted in the priced configuration. See the FDR for details.						
Benchmark results and test methodology audited by Doug Johnson for InfoSizing, Inc. (www.sizing.com)						
Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing section of the TPC benchmark specifications. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.						



**IBM System x3850 X5
Microsoft SQL Server 2008 R2**

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Numerical Quantities Summary				
Reported Throughput: 4593.17 tpsE		Configured Customers: 2,300,000		
Response Time (in seconds)	Minimum	Average	90 th Percentile	Maximum
Broker-Volume	0.01	0.03	0.06	0.86
Customer-Position	0.01	0.02	0.04	4.71
Market-Feed	0.01	0.02	0.04	4.68
Market-Watch	0.01	0.03	0.06	0.62
Security-Detail	0.01	0.01	0.02	5.21
Trade-Lookup	0.01	0.11	0.19	2.49
Trade-Order	0.01	0.05	0.08	4.92
Trade-Result	0.01	0.06	0.10	4.77
Trade-Status	0.01	0.01	0.03	1.46
Trade-Update	0.01	0.13	0.20	4.94
Data-Maintenance	0.01	0.03	N/A	0.45
Transaction Mix		Transaction Count	Mix %	
Broker-Volume		16,204,137	4.900%	
Customer-Position		42,991,371	13.000%	
Market-Feed		3,307,089	1.000%	
Market-Watch		59,526,259	18.000%	
Security-Detail		46,297,562	14.000%	
Trade-Lookup		26,455,841	8.000%	
Trade-Order		33,401,097	10.100%	
Trade-Result		33,070,834	10.000%	
Trade-Status		62,833,356	19.000%	
Trade-Update		6,613,983	2.000%	
Data-Maintenance		120	N/A	
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)				00:40:59
Measurement Interval (hh:mm:ss)				02:00:00
Business Recovery Time (hh:mm:ss)				02:02:23
Total Number of Transactions Completed in Measurement Interval				330,701,529