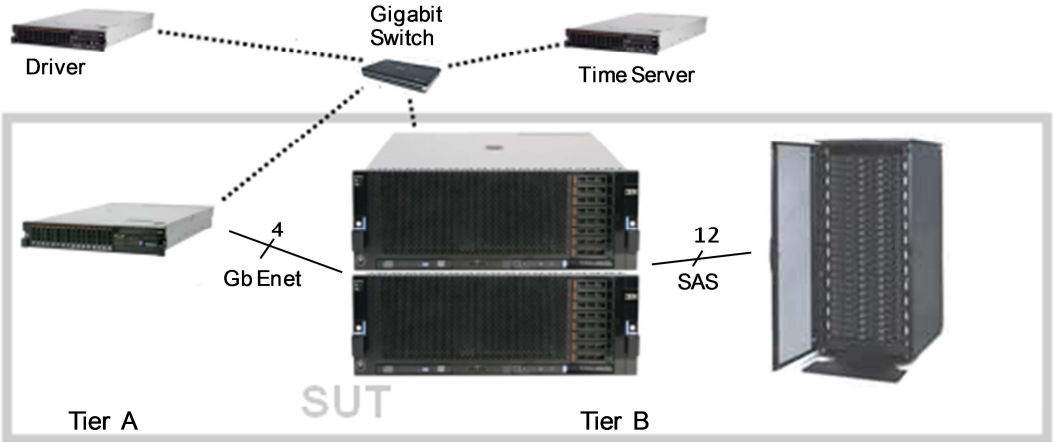
	<b>IBM® System x® 3850 X5 Microsoft® SQL Server 2012</b>		<b>TPC-E 1.12.0 TPC Pricing 1.7.0</b>
			Report Date: March 8, 2013
			Revision Date: March 8, 2013
TPC-E Throughput <b>5457.20 tpsE</b>	Price/Performance <b>\$249.58 USD per tpsE</b>	Availability Date <b>March 8, 2013</b>	Total System Cost <b>\$1,362,006 USD</b>
<b>Database Server Configuration</b>			
Operating System <b>Microsoft Windows Server 2012 Standard Edition</b>	Database Manager <b>Microsoft SQL Server 2012 Enterprise Edition</b>	Processors/Cores/ Threads <b>8/80/160</b>	Memory <b>4096GB</b>
			
IBM x3650 M4, with: - 2 x Intel Xeon Processor E5-2690 2.90GHz (2 Procs/16 Cores/32 Threads) - 16GB Memory - 2 x 250GB SFF SATA (RAID-1) - 1 x IBM ServeRAID M5110e - Onboard Quad Gb Ethernet - NetXtreme Dual Gb Ethernet	IBM System x3850 X5, with: - 8 x Intel Xeon Processor E7-8870 2.40GHz (8 Procs/80 Cores/160 Threads) - 4096GB Memory - 2 x 250GB SFF SATA (RAID-1) - 1 x IBM ServeRAID M5015 - 11 x IBM ServeRAID M5025 - Onboard Quad Gb Ethernet - NetXtreme Dual Gb Ethernet	12 x IBM EXP2524 JBOD Enclosures, with: - 220 x 200GB 2.5" SAS SSD (11 x 20-drive RAID-5 DB data) - 2 x 600GB 2.5" SAS HDD (1 x 2-drive RAID-1 temp space) - 16 x 200GB 2.5" SAS SSD (1 x 16-drive RAID-10 DB log)	<b>238 Total External Drives</b>
Initial Database Size <b>22,572 GB</b>	Redundancy Level: <b>1</b> <b>RAID-10 Log</b> <b>RAID-5 Data</b>	Storage <b>2 x 250GB 2.5" 7.2K SATA</b> <b>236 x 200GB 2.5" SAS SSD</b> <b>2 x 600GB 2.5" 10K SAS</b>	



# IBM System x3850 X5 Microsoft SQL Server 2012

**TPC-E 1.12.0**  
**TPC Pricing 1.7.0**

Report Date:  
March 8, 2013

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Availability Date:  
March 8, 2013

Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>						
IBM System x3850 X5 Configure-To-Order, includes:	7143AC1	1	250,700	1	250,700	
x3850 X5/x3950 X5 Base + Planar	7626, A14C			2		
Intel Xeon Processor E7-8870	A14L, A14Y			8		
32GB PC3L-8500 1066MHz LP RDIMM	A1CP			128		
IBM 1975W Power Supply	2111			4		
IBM x3850 X5 MB2 Memory Expansion Card	A14D			16		
IBM x3850 X5 QPI Scalability Kit	5103			1		
IBM Hot Swap SAS Hard Disk Drive Backplane	3873			2		
IBM UltraSlim Enhanced SATA DVD-ROM	4161			1		
IBM ServeRAID-M5015 SAS/SATA Controller	0093			1		
IBM 250GB 7200 NL SATA 2.5" SFF HS HDD	A1NX			2		
NetXtreme II 1000 Express Ethernet Adapter	2995			1		
Power Cable	6311			4		
IBM ServeRAID-M5025 SAS/SATA Controller	46M0830	1	649	11	7,139	
ServeRAID M5000 Series Performance Accelerator Key	81Y4426	1	399	11	4,389	
IBM Preferred Pro Keyboard USB - US English 103P RoHS	94Y6138	1	29	1	29	
IBM 2-Button Optical Mouse - Black - USB	40K9200	1	19	1	19	
ServicePac for 3-Year 24x7x4 Support (x3850 X5)	67567CG	1	1,250	2		2,500
Hanns-G 18.5" 5ms LED LCD Monitor (2 spares)	HL193ABB	3	130	3	390	
				<b>Subtotal</b>	<b>262,666</b>	<b>2,500</b>
<b>Server Storage</b>						
IBM S2 42U Standard Rack	93074RX	1	1,459	1	1,459	
IBM System Storage EXP2524 Storage Enclosure	174724X	1	3,999	12	47,988	
IBM 1M SAS cable	39R6529	1	119	12	1,428	
200GB 2.5" SAS SSD	81Y9956	1	4,099	236	967,364	
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	49Y2003	1	559	2	1,118	
ServicePac for 3-Year 24x7x4 Support (EXP2524)	91Y5785	1	1,200	12		14,400
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	1	315	1	315	
				<b>Subtotal</b>	<b>1,019,357</b>	<b>14,715</b>
<b>Server Software</b>						
SQL Server 2012 Enterprise Edition	7JQ-00256	2a	13,473	40	538,900	
Windows Server 2012 Standard Edition	P73-05762	2	1,216	4	4,864	
Microsoft Problem Resolution Services	N/A	2a	259	1		259
				<b>Subtotal</b>	<b>543,764</b>	<b>259</b>
<b>Client Hardware</b>						
IBM System x3650 M4 Configure-To-Order, includes:	7915AC1	1	10,623	1	10,623	
x3650 M4 Base + Planar	A1KF, A1KH			1		
900W High Efficiency Platinum AC Power Supply	A2EB			2		
Intel Xeon Processor E5-2690 8C 2.9GHz 20MB 135W	A2VN, A2QL			2		
IBM UltraSlim Enhanced SATA DVD-ROM + cable	4161, A22N			1		
x3650 M4 PCIe Riser Card 1 (1 x8 FH/FL + 2 x8 FH/HL Slots)	A1JT			1		
IBM System x Gen-III Slides Kit + CMA	A228, A229			1		
IBM 250GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	A1NX			2		
IBM System x Lightpath Kit	A1LF			1		
x3650 M4 8x 2.5" HS HDD Assembly Kit	A1JX			1		
4GB PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM	8941			4		
Power Cable	6263			2		
ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade	A1J3			1		
NetXtreme II 1000 Express Ethernet Adapter	2995			1		
ServicePac for 3-Year 24x7x4 Support (x3650 M4)	67567XR	1	790	1		790
				<b>Subtotal</b>	<b>10,623</b>	<b>790</b>
<b>Client Software</b>						
Windows Server 2012 Standard Edition	P73-05761	2	1,216	1	1,216	
				<b>Subtotal</b>	<b>1,216</b>	<b>0</b>
<b>Infrastructure</b>						
Ethernet Cables (2 spares)	RCW-720	3		3	18	
				<b>Subtotal</b>	<b>18</b>	<b>0</b>
				<b>Total</b>	<b>1,837,644</b>	<b>18,264</b>
Dollar Volume Discount (See Note 1)	37.51%	1			491,497	
Microsoft Open Program Discount Schedule	39.56%	2			2,405	
Pricing: 1 - IBM - 1-800-656-0833, x35330; 2 - Microsoft; 3 - newegg.com				<b>Three-Year Cost of Ownership USD:</b>		\$1,362,006
Note 1: Discount applies to all line items where Pricing=1; pricing is for these or similar quantities.				<b>TPC-E Throughput:</b>		5,457.20
Discounts for similarly sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.				<b>\$ USD/tpsE:</b>		\$249.58
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 2012**

**TPC-E 1.12.0  
TPC Pricing 1.7.0**

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Numerical Quantities Summary				
<b>Reported Throughput: 5457.20 tpsE</b>		<b>Configured Customers: 2,750,000</b>		
Response Time (in seconds)	Minimum	Average	90 <sup>th</sup> Percentile	Maximum
Broker-Volume	0.00	0.02	0.03	0.22
Customer-Position	0.00	0.01	0.02	0.72
Market-Feed	0.00	0.01	0.02	1.11
Market-Watch	0.00	0.01	0.02	0.36
Security-Detail	0.00	0.00	0.01	5.21
Trade-Lookup	0.00	0.07	0.12	0.53
Trade-Order	0.00	0.04	0.12	1.11
Trade-Result	0.00	0.02	0.04	1.53
Trade-Status	0.00	0.01	0.02	0.64
Trade-Update	0.01	0.08	0.12	0.83
Data-Maintenance	0.00	0.01	N/A	0.07
Transaction Mix		Transaction Count	Mix %	
Broker-Volume		19,251,698	4.900%	
Customer-Position		51,076,427	13.000%	
Market-Feed		3,929,197	1.000%	
Market-Watch		70,721,416	18.000%	
Security-Detail		55,005,582	14.000%	
Trade-Lookup		31,431,313	8.000%	
Trade-Order		39,682,225	10.100%	
Trade-Result		39,291,900	10.001%	
Trade-Status		74,650,360	19.000%	
Trade-Update		7,857,898	2.000%	
Data-Maintenance		120	N/A	
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)			00:27:10	
Measurement Interval (hh:mm:ss)			02:00:00	
Business Recovery Time (hh:mm:ss)			00:34:56	
Total Number of Transactions Completed in Measurement Interval			392,898,016	