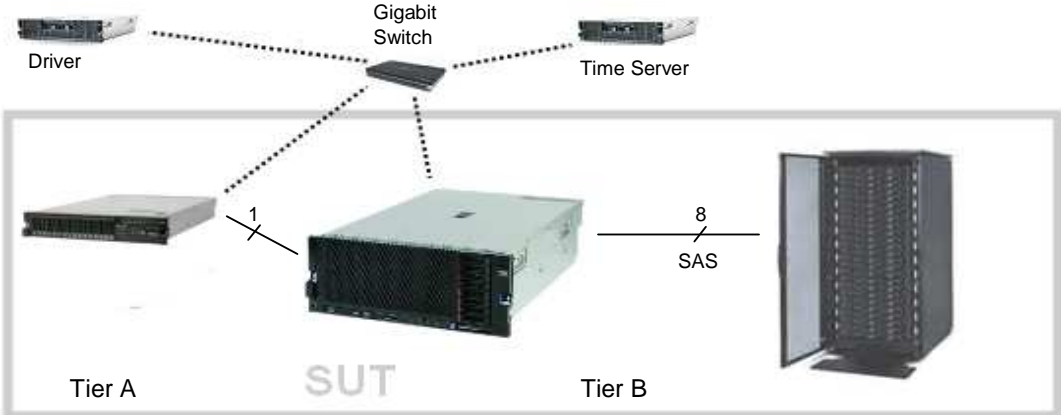
	IBM® System x® 3850 X5 Microsoft® SQL Server 2008 R2		TPC-E 1.12.0 TPC Pricing 1.6.0
			Report Date: June 27, 2011
			Revision Date: June 27, 2011
TPC-E Throughput 2862.61 tpsE	Price/Performance \$129.66 USD per tpsE	Availability Date June 27, 2011	Total System Cost \$371,142 USD
Database Server Configuration			
Operating System Microsoft Windows Server 2008 R2 Enterprise Edition	Database Manager Microsoft SQL Server 2008 R2 Enterprise Edition	Processors/Cores/Threads 4/40/80	Memory 1024GB
			
IBM x3650 M3, 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: - 4 x Intel Xeon Processor E7-4870 2.40GHz (4 Procs/40 Cores/80 Threads) - 1024GB Memory - 2 x 250GB SFF SATA (RAID-1) - 6 x 300GB 10K SAS (RAID-10) - 1 x IBM ServeRAID M5015 - 6 x IBM ServeRAID M5025 - Onboard Dual Gb Ethernet - NetXtreme Dual Gb Ethernet	6 x LSI 620J JBOD Enclosures, with: - 90 x 200GB 2.5" SAS SSD (6 x 15-drive RAID-5 DB data) - 7 x 600GB 10K 2.5" SAS (RAID-5 60-Day space) 97 Total External Drives	
Initial Database Size 11,631 GB	Redundancy Level: 1 RAID-10 Log RAID-5 Data	Storage 2 x 250 GB 90 x 200 GB 6 x 300 GB 7 x 600 GB	



IBM System x3850 X5 Microsoft SQL Server 2008 R2

TPC-E 1.12.0 TPC Pricing 1.6.0

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Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
x3850 X5 with 2 x Intel Xeon Processor E7-4870 (10C 2.40GHz / 2.5MB L2 Cache / 30MB L3 Cache) 4 x 4GB Memory, 2 memory cards	7143B7U	1	20,775	1	20,775	
Intel Xeon Processor E7-4870	69Y1893	1	5,909	2	11,818	
16GB (1x16GB) QuadRank PC3-8500 1066MHz LP RDIMM	46C7483	1	899	64	57,536	
IBM x3850 X5 MB2 Memory Expansion Card	69Y1888	1	299	6	1,794	
IBM ServeRAID-M5015 SAS/SATA Controller	46M0829	1	449	1	449	
IBM 250GB 7200 NL SATA 2.5" SFF HS HDD	81Y9722	1	289	2	578	
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	42D0637	1	409	6	2,454	
IBM ServeRAID-M5025 SAS/SATA Controller	46M0830	1	649	6	3,894	
ServeRAID M5000 Series Performance Accelerator Key	81Y4426	1	399	6	2,394	
IBM Preferred Pro USB Keyboard	40K9584	1	29	1	29	
IBM 2-Button Optical Mouse - Black - USB	40K9200	1	19	1	19	
NetXtreme II 1000 Express Ethernet Adapter	39Y6066	1	139	1	139	
ServicePac for 3-Year 24x7x4 Support (x3690 X5)	84Y2233	1	1,250	1		1,250
Hanns-G 17" 5ms Widescreen LCD Monitor (2 spares)	HW-173ABB	3	120	3	360	
Subtotal					102,239	1,250
Server Storage						
IBM S2 42U Standard Rack	93074RX	1	1,299	1	1,299	
LSI 620J JBOD Enclosure	LSI00217	5 - S	2,042	6	12,252	
LSI 620J JBOD Enclosure (10% spares)	LSI00217	5 - S	2,042	2		4,084
IBM 1M SAS cable	39R6529	1	119	12	1,428	
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	49Y2003	1	799	7	5,593	
IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD (spares)	49Y2003	1	799	2		1,598
200GB, 2.5" XceedIOPS SAS Solid-State Drive, eMLC	SG9XCA2E200GE01	4	1,800	90	162,000	
200GB, 2.5" XceedIOPS SAS Solid-State Drive, eMLC (spares)	SG9XCA2E200GE01	4	1,800	9		16,200
Subtotal					182,572	21,882
Server Software						
SQL Server 2008 R2 Enterprise Edition	810-08527	2	23,848	4	95,392	
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					99,391	259
Client Hardware						
IBM System x3650 M3 Configure-To-Order, includes: System Common Planar for 1U/2U	7945AC1	1	5,362	1	5,362	
IBM System x3650 M3 Base with 675W AC power supply	5663			1		
IBM System x3650 M3 Base with 675W AC power supply	5694			1		
Intel Xeon Processor X5650 6C 2.66GHz 12MB 1333MHz 95w	4589, 7709			2		
IBM System x3650 M3 8 HDD Kit	1745			1		
2GB PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM	8934			4		
PCI-Express (2 x8 slots) Riser Card	3734, 5086			2		
ServeRAID M1015 SAS/SATA Controller	0095			1		
IBM UltraSlim Enhanced SATA DVD-ROM	4161			1		
Dual port 1Gb Ethernet daughter card	3585			1		
IBM 250GB 7200 NL SATA 2.5" SFF HS HDD	81Y9722	1	289	2	578	
ServicePac for 3-Year 24x7x4 Support (x3650 M3)	21P2078	1	660	1		660
Subtotal					5,940	660
Client Software						
Microsoft Windows Server 2008 R2 Standard Edition	P73-04980	2	1,029	1	1,029	
Subtotal					1,029	0
Infrastructure						
Ethernet Cables (2 spares)	24501	3		4	16	
Subtotal					16	0
Total					391,187	24,051
Dollar Volume Discount (See Note 1)	19.57%	1			23,419	
Microsoft Open Program Discount Schedule	20.54%	2			20,677	

Three-Year Cost of Ownership USD: \$371,142
TPC-E Throughput: 2,862.61
\$ USD/tpsE: \$129.66

Pricing: 1 - IBM - 1-800-656-0833, x35330; 2 - Microsoft; 3 - newegg.com; 4 - ClearComm; 5 - Avnet
 Note 1: Discount applies to all line items where Pricing=1; pricing is for these or similar quantities.
 Discounts for similarly sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.

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**

**TPC-E 1.12.0
TPC Pricing 1.6.0**

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Numerical Quantities Summary				
Reported Throughput: 2862.61 tpsE		Configured Customers: 1,450,000		
Response Time (in seconds)	Minimum	Average	90 th Percentile	Maximum
Broker-Volume	0.01	0.02	0.04	0.34
Customer-Position	0.01	0.01	0.03	2.22
Market-Feed	0.01	0.01	0.04	0.86
Market-Watch	0.01	0.02	0.04	0.34
Security-Detail	0.01	0.01	0.02	0.75
Trade-Lookup	0.01	0.10	0.18	1.16
Trade-Order	0.01	0.03	0.06	2.31
Trade-Result	0.01	0.04	0.07	3.37
Trade-Status	0.01	0.01	0.02	2.27
Trade-Update	0.01	0.12	0.19	1.00
Data-Maintenance	0.01	0.02	N/A	0.10
Transaction Mix		Transaction Count	Mix %	
Broker-Volume		10,098,758	4.900%	
Customer-Position		26,792,317	13.000%	
Market-Feed		2,061,091	1.000%	
Market-Watch		37,096,795	18.000%	
Security-Detail		28,853,316	14.000%	
Trade-Lookup		16,487,432	8.000%	
Trade-Order		20,815,601	10.100%	
Trade-Result		20,610,853	10.001%	
Trade-Status		39,158,079	19.000%	
Trade-Update		4,121,743	2.000%	
Data-Maintenance		120	N/A	
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)				00:28:58
Measurement Interval (hh:mm:ss)				02:00:00
Business Recovery Time (hh:mm:ss)				01:09:57
Total Number of Transactions Completed in Measurement Interval				206,095,985