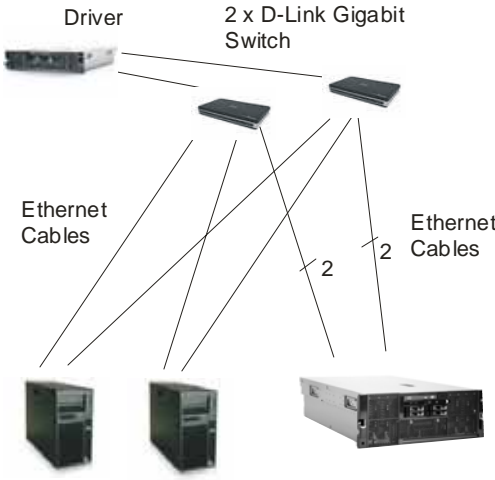
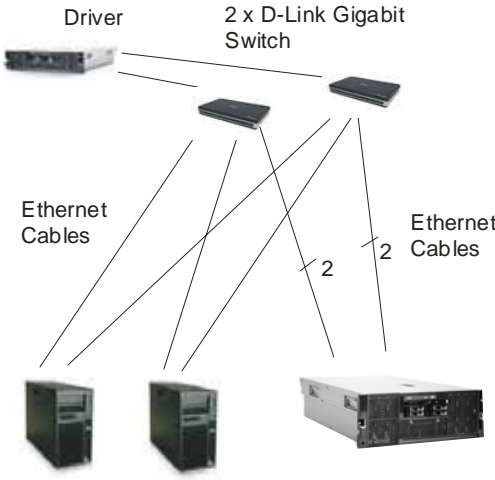

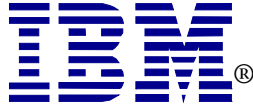
	<b>IBM® System x™ 3850 M2</b> <b>Microsoft® SQL Server 2008</b>		TPC-E Revision 1.5.1 TPC Pricing 1.3.0
			Report Date: September 15, 2008
TPC-E Throughput <b>729.65 tpsE</b>	Price/Performance <b>\$ 457.27</b> <b>USD per tpsE</b>	Availability Date <b>October 10, 2008</b>	Total System Cost <b>\$ 333,646 USD</b>
<b>Database Server Configuration</b>			
Operating System <b>Microsoft Windows Server 2008 Enterprise x64 Edition</b>	Database Manager <b>Microsoft SQL Server 2008 Enterprise x64 Edition</b>	Processors/Cores/Threads <b>4/24/24</b>	Memory <b>128GB</b>
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Tier A - Clients</p> <p>2 x IBM System x3200 M2            Each contains:            1 x Quad-Core Intel Xeon Processor X3360 2.83GHz (1 Processor, 4 Cores, 4 Threads)            2GB of Memory            2 x 73.4GB SAS Drive (RAID-1 for OS, Onboard RAID Controller, Onboard Gigabit Ethernet)            1 x NetXtreme II 1000 Express</p> </div> <div style="text-align: center;">  <p>Tier B - Database Server</p> <p>IBM System x3850 M2            4 x Intel Xeon Processor X7460 2.66GHz (4 Processors, 24 Cores, 24 Threads)            128GB of Memory            5 x IBM ServeRAID-MR10M SAS Controller            Intel PRO/1000 Dual-Port Ethernet Adapter</p> </div> <div style="text-align: center;">  <p>9 x SAS Cables</p> <p>34 x IBM System Storage EXP3000 Enclosure            2 x EXP3000s each contains:            8 x 15K rpm drives for a total of 16 drives arrayed as:            1 x 16-Disk (73.4GB) RAID-10            32 x EXP3000s each contains:            12 x 15K rpm drives for a total of 384 drives arrayed as:            16 x 24-Disk (73.4GB) RAID-5</p> </div> </div>			
Initial Database Size <b>2,821 GB</b>	Redundancy Level: 1 <b>RAID-10 Log + RAID-5 Data</b>		Storage <b>400 x 73.4 GB Drives</b>



# IBM System x3850 M2 Microsoft SQL Server 2008

TPC-E Revision 1.5.1  
TPC Pricing Spec 1.3.0

Report Date:  
September 15, 2008

Availability Date:  
October 10, 2008

Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>						
x3850 M2 with 2 x Intel Xeon Processor X7460 (2.66GHz / 9MB L2 Cache / 16MB L3 Cache) 4 Memory Cards, 8 x 1GB DIMM	72336RU	1a	16,539	1	16,539	
Intel Xeon Processor X7460 (2.66GHz/16MB L3 Cache)	44E4473	1a	4,469	2	8,938	
8GB (2x4GB) PC2-5300 CL5 ECC DDR2 SDRAM	41Y2768	1	849	16	13,584	
73GB 15K 2.5" Hot-Swap SAS SFF	43X0837	1	369	2	738	
IBM ServeRAID-MR10M SAS/SATA Controller	43W4339	1	899	5	4,495	
Intel PRO/1000 Dual-Port Ethernet Adapter	39Y6126	1	229	1	229	
IBM T115 15-inch TFT Display	494215U	1a	209	1	209	
IBM Preferred Pro USB Keyboard	40K9584	1	29	1	29	
IBM 3-Button Optical Mouse - Black - USB	40K9201	1	19	1	19	
ServicePac for 3-Year 24x7x4 Support (x3850 M2)	10N3059	1	1,695	1		1,695
ServicePac for 3-Year 24x7x4 Support (Display)	10N3110	1	90	1		90
				<b>Subtotal</b>	<b>44,780</b>	<b>1,785</b>
<b>Server Storage</b>						
IBM S2 42U Standard Rack	93074RX	1	1,489	3	4,467	
IBM System Storage EXP3000 Enclosure	1727-01X	1	3,199	34	108,766	
IBM 1M SAS cable	39R6529	1	119	25	2,975	
IBM 3M SAS cable	39R6531	1	135	9	1,215	
IBM Hot-Swap 3.5 inch 73.4GB 15K SAS HDD	43W7523	1	329	400	131,600	
ServicePac for 3-Year 24x7x4 Support (EXP3000)	41L2768	1	760	34		25,840
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	1	300	3		900
				<b>Subtotal</b>	<b>249,023</b>	<b>26,740</b>
<b>Server Software</b>						
Microsoft SQL Server 2008 Enterprise x64 Edition	810-07507	2	24,999	4	99,996	
Microsoft Windows Server 2008 Enterprise x64 Ed.	P72-03168	2	3,999	1	3,999	
Microsoft Problem Resolution Services	N/A	2	245	1		245
				<b>Subtotal</b>	<b>103,995</b>	<b>245</b>
<b>Client Hardware</b>						
x3200 M2 with Intel Xeon X3360 (2.83GHz/12MB L2 Cache) and 2GB (2x1GB) PC2-5300 CL5 ECC DDR2 SDRAM	436772U	1	2,235	2	4,470	
73GB 15K 3.5" Hot-Swap SAS	43W7523	1	329	4	1,316	
NetXtreme II 1000 Express Ethernet Adapter	39Y6066	1	169	2	338	
ServicePac for 3-Year 24x7x4 Support (x3200 M2)	51J9054	1	399	2		798
				<b>Subtotal</b>	<b>6,124</b>	<b>798</b>
<b>Client Software</b>						
Microsoft Windows Server 2008 Standard x64 Edition	P73-04165	2	999	2	1,998	
				<b>Subtotal</b>	<b>1,998</b>	<b>0</b>
<b>Infrastructure</b>						
D-Link DGS-2208 10/20/100/1000/2000Mbps Switch (2 spares)	DGS-2208	3	48	4	192	
Ethernet Cable (2 spares)	A3L791-10-BLK	3	5	12	60	
				<b>Subtotal</b>	<b>252</b>	<b>0</b>
				<b>Total</b>	<b>406,172</b>	<b>29,568</b>
IBM Large Purchase Discount (See Note 1.)	30.82%	1			93,561	
Microsoft Open Program Discount Schedule	8.05%	2			8,533	

Pricing: 1 - IBM - 1-888-SHOP-IBM, ext. 5821; 2 - Microsoft; 3 - newegg.com	<b>Three-Year Cost of Ownership USD:</b>	\$333,646
Note 1: Discount applies to all line items where Pricing=1; pricing is for these or similar quantities.	<b>TPC-E Throughput:</b>	729.65
Discount for similarly sized configurations will be similar to those quoted here but may vary based on the components in the price quotation	<b>\$ USD/tpsE:</b>	\$457.27

Implementation and results 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 M2  
Microsoft SQL Server 2008**

TPC-E Revision 1.5.1  
TPC Pricing Spec 1.3.0

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<b>Reported Throughput: 729.65 tpsE</b>		<b>Configured Customers: 365,000</b>		
<b>Response Time (in seconds)</b>	<b>Minimum</b>	<b>Average</b>	<b>90<sup>th</sup> Percentile</b>	<b>Maximum</b>
<b>Broker-Volume</b>	0.00	0.03	0.06	2.17
<b>Customer-Position</b>	0.00	0.02	0.04	2.87
<b>Market-Feed</b>	0.00	0.03	0.07	6.56
<b>Market-Watch</b>	0.00	0.02	0.04	0.42
<b>Security-Detail</b>	0.00	0.01	0.02	0.44
<b>Trade-Lookup</b>	0.00	0.62	0.83	2.06
<b>Trade-Order</b>	0.00	0.06	0.12	6.57
<b>Trade-Result</b>	0.00	0.06	0.11	3.28
<b>Trade-Status</b>	0.00	0.02	0.04	0.45
<b>Trade-Update</b>	0.01	0.73	0.90	9.35
<b>Data-Maintenance</b>	0.00	0.07	N/A	0.36
<b>Transaction Mix</b>		<b>Transaction Count</b>	<b>Mix %</b>	
<b>Broker-Volume</b>		2,573,376	4.900	
<b>Customer-Position</b>		6,827,759	13.000	
<b>Market-Feed</b>		525,354	1.000	
<b>Market-Watch</b>		9,453,457	17.999	
<b>Security-Detail</b>		7,352,956	14.000	
<b>Trade-Lookup</b>		4,201,284	7.999	
<b>Trade-Order</b>		5,304,816	10.100	
<b>Trade-Result</b>		5,253,495	10.002	
<b>Trade-Status</b>		9,979,273	19.000	
<b>Trade-Update</b>		1,050,354	2.000	
<b>Data-Maintenance</b>		120	N/A	
<b>Test Duration and Timings</b>				
<b>Ramp-up Time</b>			00:43:00	
<b>Measurement Interval</b>			02:00:00	
<b>Business Recovery Time</b>			00:47:22.37	
<b>Total Number of Transactions Completed in Measurement Interval</b>			52,522,124	