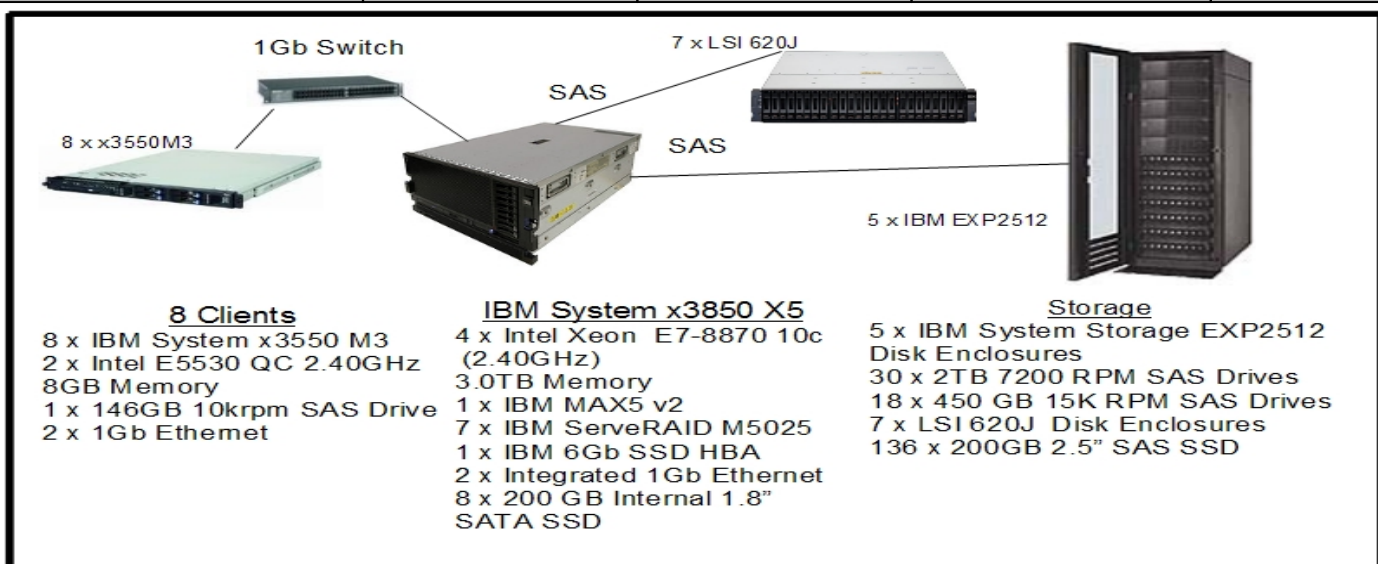


**IBM System x3850 X5
DB2® 9.7**

TPC-C Rev. 5.11

**Report Date:
July 11, 2011**

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$1,788,184 USD	3,014,684	\$0.59 USD	September 22, 2011
Database Processors/Cores/Threads	Database Manager	Operating System	Other Software
4/40/80 2.40 GHz Intel Xeon E7-8870	DB2 9.7	SLES 11 SP1	Microsoft Visual C++ Microsoft COM+
			No. Users
			2,400,480



System Components	Each of the 8 Clients		Server	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	2/8/16	2.4GHz Xeon E5530 4 x 256KB L2, 1 x 8MB L3	4/40/80	2.40 GHz Intel Xeon E7-8870 10 x 256KB L2 1 x 30MB L3
Memory	4	2 GB	96	32 GB
Disk Controllers	1	SAS	7 1	ServeRAID-M5025 IBM 6Gb SSD HBA
Disk Drives	1	146 GB	30 18 8 136	2 TB 7200 RPM SAS 450 GB 15K RPM SAS 1.8" 200GB SATA SSD drives 2.5" 200GB SAS SSD drives
Total Storage		146 GB		82.97 TB
Terminals	1	System Console	1	System Console

IBM Corporation	IBM x3850 X5	with DB2 9.7	TPC-C Revision 5.11				
			Report Date: July 22, 2010;				
Description	Part Number	Brand	Price Source	Unit Price	Qty	Extended Price	3-Yr. Maint. Price
Server Hardware							
IBM System x3850 X5/x3950 X5	7143AC1	IBM					
IBM System x3850 X5/x3950 X5 Base	7626	IBM	1	2,079	1	2,079	
Intel Xeon Processor E7-8870 10c 2.40GHz 30MB Cache 130w	A14L	IBM	1	7,275	1	7,275	
Add. Intel Xeon Processor E7-8870 10c 2.40GHz 30MB Cache 130w	A14Y	IBM	1	7,275	3	21,825	
IBM x3850 X5 and x3950 X5 Memory Expansion Card	A14D	IBM	1	299	8	2,392	
x3850 X5 System Planar Boards	A14C	IBM	1	3,259	1	3,259	
32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM	A1CP	IBM	1	5,999	64	383,936	
IBM MAX5 v2 for System x	A19H	IBM	1	7,495	1	7,495	
IBM MAX5 to x3850 X5 Cable Kit	4192	IBM	1	1,795	1	1,795	
32GB MAX5 1x32G 4Rx4 1.35V PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM	A1R2	IBM	1	6,499	32	207,968	
IBM 6Gb SSD HBA	3876	IBM	1	699	1	699	
IBM eXFlash 8x 1.8" HS SAS SSD Backplane	4191	IBM	1	195	1	195	
IBM 1975W Power Supply	2111	IBM	1	699	2	1,398	
IBM UltraSlim enhanced SATA DVD-ROM	4161	IBM	1	89	1	89	
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	6311	IBM	1	10	3	30	
QPI Wrap Cord	5104	IBM	1	69	2	138	
ServeRAID M5025 SAS/SATA Controller	94	IBM	1	649	1	649	
Acer V183HLAJB 18.5" Wide LED Monitor	2168550	CDW	4	99	1	99	
IBM Preferred Pro Keyboard USB – US English 103P	40K9584	IBM	1	29	1	29	
ServeRAID M5025 SAS/SATA Controller	46M0830	IBM	1	649	7	4,543	
ServeRAID M5000 Series Performance Accelerator Key	81Y4426	IBM	1	399	7	2,793	
3 Year Onsite Repair 24x7 4 Hour Response	67567CG	IBM	1	1,250	1		1,250
						Subtotal	648,686 1,250
Server Storage							
IBM 1M SAS cable	39R6529	IBM	1	119	15	1,785	
IBM System Storage EXP2512	1747-HC1 2701	IBM	1	3,399	5	16,995	
450GB 15K 3.5" Hot-Swap SAS	44W2239	IBM	1	579	18	10,422	
2TB 6GB 7200 RPM Hot-Swap SAS	49Y1902	IBM	1	719	30	21,570	
NetBAY S2 42U Standard Rack	93074RX	IBM	1	1,299	1	1,299	
IBM 200GB High IOPS 1.8" SATA SSD	43W7746	IBM	1	3,199	8	25,592	
LSI 620J JBOD Disk Enclosure (Incl 2 Spares)	LSI00217	LSI	8	2,041	9	18,369	
Smart Modular XceedIOPS 2.5" 200GB eMLC SAS SSD (Incl 14 Spares)	SG9XCA2E200GE10	Smart	7	1,800	150	270,000	
ServicePac for 3-Year 24x7x4 Support (EXP2512)	6756-7JN	IBM	1	700	5		3,500
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM	1	300	1		300
						Subtotal	366,032 3,800
Server Software							
DB2 ESE 9.7 SW License and Maintenance 12 Months		IBM	1	405.00	4000	1,620,000	
DB2 ESE 9.7 SW Maintenance Renewal - 1 Year		IBM	1	81.00	8000		648,000
SUSE Linux Enterprise Server 11 SP1 for x86_64 1 Year Priority Support		Novell	3	1,499	3	4,497	
						Subtotal	1,624,497 648,000
Client Hardware							
IBM System x3550 M3 Base	7944-AC1 5693	IBM	1	799	8	6,392	
Intel Xeon Processor E5530 4C (2.4GHz 8MB L3 Cache 1066MHz 80w)	3640	IBM	1	859	8	6,872	
Add. Intel Xeon Processor E5530 4C (2.4GHz 8MB L3 Cache 1066MHz 80w)	7732	IBM	1	839	8	6,712	
2GB DDR3-1333 1Rx4 LP RDIMM x 4	8935	IBM	1	436	8	3,488	
IBM 146GB 10k 6Gbps SAS 2.5" SFF Slim-HS HDD	5537	IBM	1	259	8	2,072	
System Common planar for 1U/2U	5663	IBM	1	799	8	6,392	
PCI-Express (1x16 slot; LP) Riser Card 1	5076	IBM	1	59	8	472	
UltraSlim Enhanced SATA DVD-ROM	4161	IBM	1	89	8	712	
PCI-Express (1x16 slot; FH/HL) Riser Card 2	4375	IBM	1	59	8	472	
ServeRAID-BR10i SAS/SATA Controller	3577	IBM	1	299	8	2,392	
IBM System x3550 M3 4 HDD and optical kit	1788	IBM	1	99	8	792	
IBM 675W redundant power supply	2100	IBM	1	299	8	2,392	
2.8m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable x 2	6311	IBM	1	20	8	160	
3 Year Onsite Repair 24x7 4 Hour Response	6756298	IBM	1	495	8		3,960
						Subtotal	39,320 3,960
Client Software							
Windows Server Web Edition 2008 R2	LWA-00984	Microsoft	5	469	8	3,752	
Visual Studio Standard 2008	127-00166	Microsoft	5	250	1	250	
Microsoft Problem Resolution Services	NA	Microsoft	5	259	1		259
						Subtotal	4,002 259
Third-Party Components							
IOGEAR 2 port USB KVM Switch (2 spares)	575404	cdw	4	35	3	105	
UPS - powercom KIN-1500AP 1500VA 900Watts (2 spares)	N82E16842106115	newegg	6	135	3	405	
NETGEAR GS748T 48-port Gigabit Smart Switch (2 spares)	GS748TNA	cdw	4	660	3	1,980	
						Subtotal	2,490 0
						Total	2,685,027 657,269
IBM Dollar Volume Discount (See Note 1)			1			Note 1 Discount	1,554,112
Pricing: 1 - IBM - 1-800-656-0833 x35304; 3 - Novell; 4 - CDW.com; 5 - Microsoft 6 - newegg.com; 7 - ClearComm 919-859-4400; 8 - Avnet 1-800-332-8638 Note 1: Discount based on IBM Direct guidance applies to all line items where Pricing=1. * These components are not immediately orderable. See the FDR for more information.						Three-Year Cost of Ownership USD:	1,788,184
						tpmC:	3,014,684
						\$ USD/tpmC:	0.59
Audited by Francois Raab, 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 sections 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.							

Numerical Quantities Summary for the IBM System x3850 X5

MQTH, computed Maximum Qualified Throughput: 3,014,684 tpmC

<u>Response Times (in seconds)</u>	<u>90th %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.500	0.272	24.234
Payment	0.500	0.266	43.546
Order-Status	0.500	0.266	15.844
Delivery (interactive)	0.380	0.189	24.125
Delivery (deferred)	0.38	0.095	1.89
Stock-Level	0.480	0.261	24.485
Menu	0.361	0.189	38.390

Response time delay added for emulated components was 0.1 seconds

<u>Transaction Mix, in percent of total transactions</u>	<u>Percent</u>
New Order	44.950%
Payment	43.021%
Order-Status	4.010%
Delivery	4.010%
Stock-Level	4.009%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.000/0.00	18.000/12.037	18.172/120.438
Payment	3.000/0.00	3.000/12.037	3.172/120.438
Order-Status	2.000/0.00	2.000/10.037	2.157/100.391
Delivery	2.000/0.00	2.000/5.037	2.157/50.375
Stock-Level	2.000/0.00	2.000/5.035	2.157/50.360

Test Duration

Ramp-up Time	1 hour 23 minutes
Measurement interval	2 hours 0 minutes
Transactions during measurement interval (all types)	804,813,779

Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A
