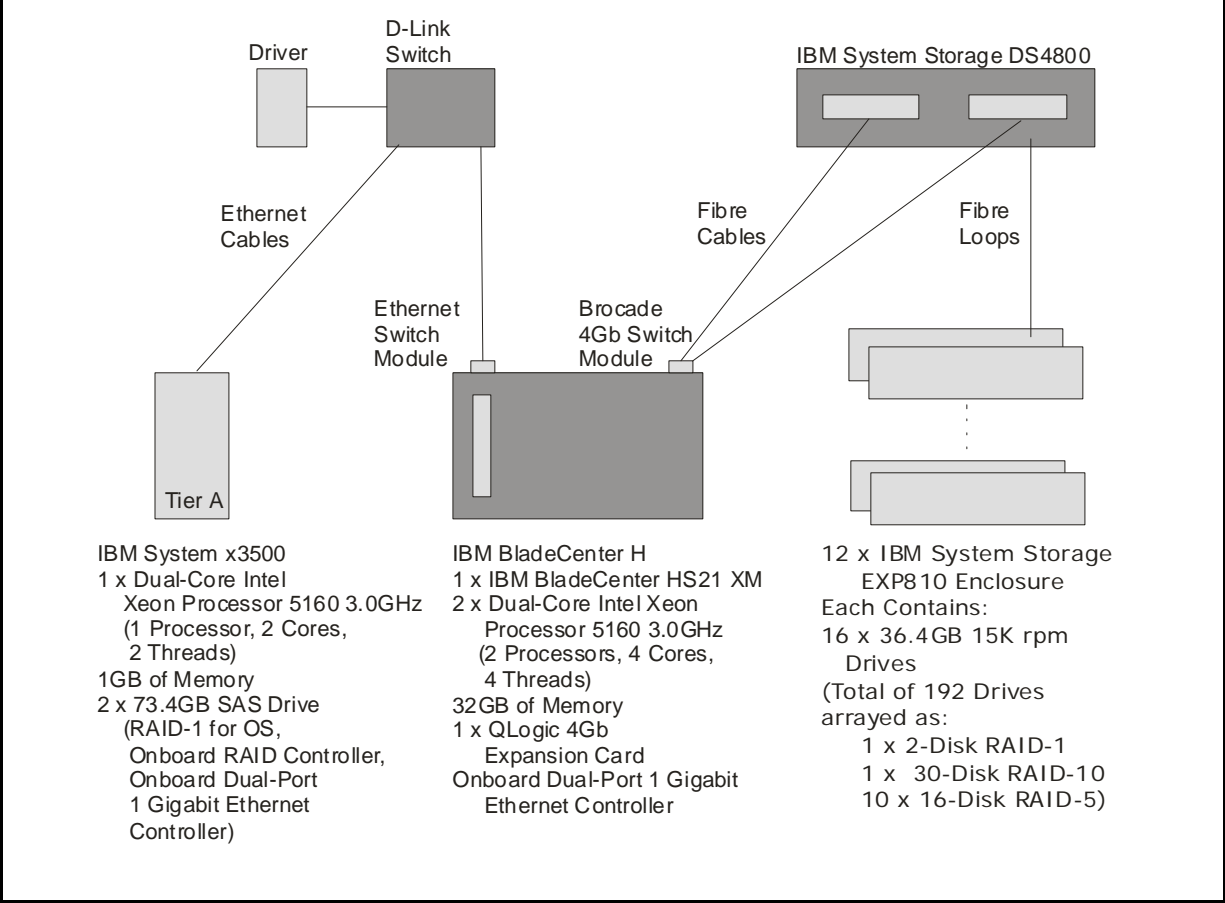
	IBM® BladeCenter® HS21 XM Microsoft® SQL Server 2005		TPC-E Revision 1.2.0 TPC Pricing 1.2.0
			Report Date: August 10, 2007
TPC-E Throughput 169.59 tpsE	Price/Performance \$ 1,897.66 USD per tpsE	Availability Date August 10, 2007	Total System Cost \$ 321,824 USD

Database Server Configuration

Operating System Microsoft Windows Server 2003 R2 Enterprise x64 Edition	Database Manager Microsoft SQL Server 2005 Enterprise x64 Edition SP2	Processors/Cores/Threads 2/4/4	Memory 32GB
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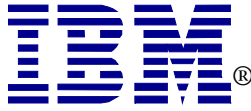


IBM System x3500
1 x Dual-Core Intel Xeon Processor 5160 3.0GHz (1 Processor, 2 Cores, 2 Threads)
1GB of Memory
2 x 73.4GB SAS Drive (RAID-1 for OS, Onboard RAID Controller, Onboard Dual-Port 1 Gigabit Ethernet Controller)

IBM BladeCenter H
1 x IBM BladeCenter HS21 XM
2 x Dual-Core Intel Xeon Processor 5160 3.0GHz (2 Processors, 4 Cores, 4 Threads)
32GB of Memory
1 x QLogic 4Gb Expansion Card
Onboard Dual-Port 1 Gigabit Ethernet Controller

12 x IBM System Storage EXP810 Enclosure
Each Contains:
16 x 36.4GB 15K rpm Drives
(Total of 192 Drives arrayed as:
1 x 2-Disk RAID-1
1 x 30-Disk RAID-10
10 x 16-Disk RAID-5)

Initial Database Size 654 GB	Redundancy Level: 1 RAID-10 Log + RAID-5 Data	Storage 192 x 36.4 GB 15K
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IBM BladeCenter HS21 XM Microsoft SQL Server 2005

TPC-E Revision 1.2.0
TPC Pricing Spec 1.2.0

Report Date:
August 10, 2007

Availability Date:
August 10, 2007

Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
IBM BladeCenter H Chassis	8852-4XU	1	3,849	1	3,849	
IBM KVM/ Advanced Management Module						
Server Connectivity Module for IBM BladeCenter	39Y9324	1	999	1	999	
IBM BladeCenter HS21 - 1 x Dual Core Intel Xeon 5160 1GB (2x512MB) PC2-5300 DDR2 SDRAM (Chipkill)	7995-L6U	1	3,339	1	3,339	
Intel Xeon Processor 5160 3.00GHz/4MB L2, 1333MHz FSB	42C0567	1	1,899	1	1,899	
8GB (2x4GB) PC2-5300 CL5 ECC DDR2 SDRAM (Chipkill)	39M5797	1	5,999	4	23,996	
QLLogic 4Gb SFF Fibre Channel Expansion Card	26R0890	1	799	1	799	
IBM T115 15-inch TFT Display	494215U	1	259	1	259	
IBM Preferred Pro USB Keyboard	40K9584	1	29	1	29	
IBM 3-Button Optical Mouse - Black - USB	40K9201	1	19	1	19	
NEC Black 1.44MB 3.5" External USB Floppy Drive (2 spares)	UF0002S-102	5	22	3	66	
ServicePac for 3-Year 24x7x4 Support (BC Chassis)	30L9185	1	750	1		750
ServicePac for 3-Year 24x7x4 Support (HS21)	69P9519	1	400	1		400
ServicePac for 3-Year 24x7x4 Support (Display)	30L9183	1	90	1		90
Subtotal					35,254	1,240
Server Storage						
IBM Short Wave SFP Module (4 Pack)	22R0483	1	550	5	2,750	
IBM 1m LC-LC Fibre Channel Cable	39M5696	1	79	24	1,896	
IBM 5m LC-LC Fibre Channel Cable	39M5697	1	129	2	258	
Brocade 4Gb 10-port SAN Switch Module for IBM BladeCenter	32R1813	1	8,999	1	8,999	
IBM S2 42U Standard Rack	93074RX	1	1,489	2	2,978	
IBM UPS 750TLV	21301TX	1	545	1	545	
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	1	300	2		600
IBM System Storage DS4800 Disk Upgrade to 8GB Cache	1815-82A	2a	53,995	1	53,995	
IBM System Storage DS4000 EXP810 Storage Exp. Unit	1812-81H	2a	6,000	12	72,000	
36.4GB 15K 4Gbps FC E-DDM Hot-Swap HDD	40K6812	2a	892	192	171,264	
ServicePac for 3-Year 24x7x4 Support (EXP810)	10N3651	2b	960	12		11,520
ServicePac for 3-Year 24x7x4 Support (DS4800)	41C5953	2b	3,200	1		3,200
Subtotal					314,685	15,320
Server Software						
Microsoft SQL Server 2005 Enterprise x64 Edition	810-03150	3a	23,911	2	47,822	
Microsoft Windows Server 2003 R2 Enterprise x64 Edition	P72-01684	3b	2,334	1	2,334	
Microsoft Problem Resolution Services		3	245.00	1		245
Subtotal					50,156	245
Client Hardware						
x3500 with 3.0GHz/2x2MB Xeon 5160, 1GB (2x512) Memory	797792U	1	3,399	1	3,399	
73GB 15K Hot Swap SAS	40K1043	1	349	2	698	
ServicePac for 3-Year 24x7x4 Support (x3500)	21P2084	1	689	1		689
Subtotal					4,097	689
Client Software						
Microsoft Windows Server 2003 R2 Standard Edition	P73-01972	3c	719	1	719	
Subtotal					719	0
Infrastructure						
D-Link DGS 1008TLEthernet Switch (2 spares)	DGS1008TL	4	206	3	618	
Ethernet Cable (2 spares)	A3L791-10-BLK	5	4	6	24	
Subtotal					642	
Total					405,553	17,494
IBM Large Purchase Discount 17.35% (See Note 1.)		1			-10,279	
Compsat Technology Large Purchase Discount 29.15% (See Note 2.)		2			-90,944	

Pricing: 1 - IBM - 1-888-SHOP-IBM, ext. 5821; 2 - Compsat Technology discounts 2a = 30%, 2b = 12%; 3 - Microsoft discounts 3a = 4%; 3b = 42%; 3c = 28%;
4 - www.superwarehouse.com; 5 - newegg.com
Note 1: Discount based on IBM Direct guidance applies to all line items where Pricing=1.
Note 2: Discount applies to all line items where Pricing=2a, 2b and 2c.
Pricing is for this system or one of similar size.

Three-Year Cost of Ownership USD: \$321,824
TPC-E Throughput: 169.59
\$ USD/tpsE: \$1,897.66

Implementation and results audited by Lorna Livingtree for InfoSizing (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 BladeCenter HS21 XM
Microsoft SQL Server 2005**

TPC-E Revision 1.2.0
TPC Pricing Spec 1.2.0

Report Date:
August 10, 2007

Availability Date:
August 10, 2007

Reported Throughput: 169.59 tpsE		Configured Customers: 85,000		
Response Time (in seconds)	Minimum	Average	90Th Percentile	Maximum
Broker-Volume	0.01	0.04	0.07	0.24
Customer-Position	0.00	0.04	0.07	0.48
Market-Feed	0.00	0.04	0.07	0.22
Market-Watch	0.00	0.03	0.06	0.56
Security-Detail	0.00	0.02	0.04	0.47
Trade-Lookup	0.01	0.47	0.63	1.00
Trade-Order	0.00	0.13	0.17	0.53
Trade-Result	0.00	0.13	0.19	4.38
Trade-Status	0.00	0.03	0.05	0.50
Trade-Update	0.02	0.56	0.68	1.03
Data-Maintenance	0.01	0.09	N/A	0.65
Transaction Mix		Transaction Count	Mix %	
Broker-Volume		598,355	4.900	
Customer-Position		1,587,365	13.000	
Market-Feed		122,111	1.000	
Market-Watch		2,197,965	18.001	
Security-Detail		1,709,530	14.001	
Trade-Lookup		976,643	7.998	
Trade-Order		1,233,329	10.101	
Trade-Result		1,221,093	10.000	
Trade-Status		2,319,897	18.999	
Trade-Update		244,162	2.000	
Data-Maintenance		120	N/A	
Test Duration and Timings				
Ramp-up Time			01:10:00	
Measurement Interval			02:00:00	
Business Recovery Time			03:48:08	
Total Number of Transactions Completed in Measurement Interval			12,210,450	