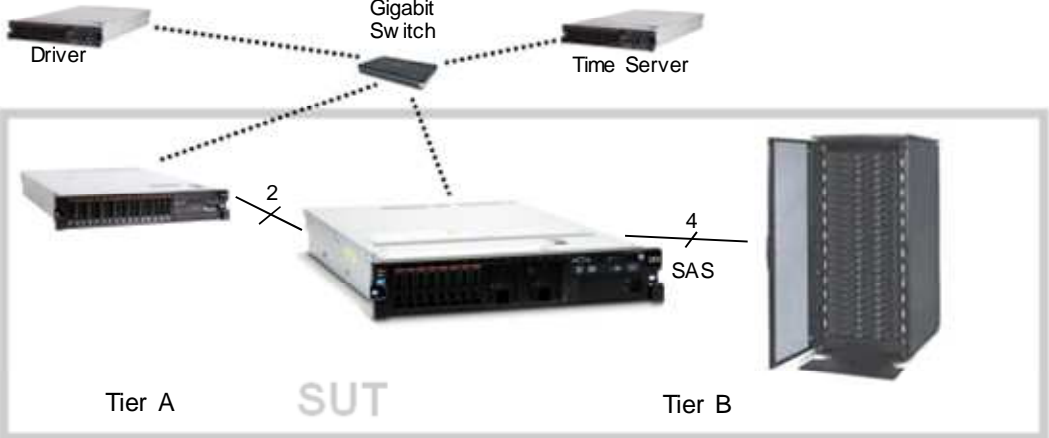
	IBM® System x® 3650 M4 Microsoft® SQL Server 2012		TPC-E 1.12.0 TPC Pricing 1.7.0
			Report Date: March 6, 2012
			Revision Date: March 6, 2012
TPC-E Throughput 1863.23 tpsE	Price/Performance \$207.85 USD per tpsE	Availability Date May 31, 2012	Total System Cost \$387,271 USD
Database Server Configuration			
Operating System Microsoft Windows Server 2008 R2 Enterprise Edition SP1	Database Manager Microsoft SQL Server 2012 Enterprise Edition	Processors/Cores/ Threads 2/16/32	Memory 512GB
			
1 x 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 x3650 M4, with: - 2 x Intel Xeon Processor E5-2690 2.90GHz (2 Procs/16 Cores/32 Threads) - 512GB Memory - 8 x 300GB 10K SAS (RAID-10) - 1 x IBM ServeRAID M5110e - 4 x IBM ServeRAID M5120 - Onboard Quad Gb Ethernet	4 x IBM EXP2524 JBOD Enclosures, with: - 84 x 200GB 2.5" SAS SSD (4 x 21-drive RAID-5 DB data)	84 Total External Drives
Initial Database Size 7,782 GB	Redundancy Level: 1 RAID-10 Log RAID-5 Data	Storage 8 x 300GB 2.5" 10K SAS 84 x 200GB 2.5" SAS SSD	



IBM System x3650 M4 Microsoft SQL Server 2012

TPC-E 1.12.0
TPC Pricing 1.7.0

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Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
IBM System x3650 M4 Configure-To-Order, includes:	7915AC1	1	8,632	1	8,632	
x3650 M4 Base	A1KF			1		
x3650 M4 System Planar	A1KH			1		
900W High Efficiency Platinum AC Power Supply	A2EB			2		
Intel Xeon Processor E5-2690 8C 2.9GHz 20MB 135W	A2QL			2		
IBM UltraSlim Enhanced SATA DVD-ROM	4161			1		
x3650 M4 PCIe Riser Card 2 (1 x8 FH/FL + 2 x8 FH/HL Slots)	A1JU			1		
32GB PC3L-10600 DDR3 1333MHz LP LRDIMM	90Y3105	1	4,599	16	73,584	
ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade	81Y4484	1	199	1	199	
IBM 300GB 10K 6Gbps SAS 2.5" SFF G2HS HDD	90Y8877	1	339	8	2,712	
IBM ServeRAID M5120 SAS/SATA Controller	81Y4478	1	299	4	1,196	
ServeRAID M5100 Series 1GB Flash/RAID 5 Upgrade	81Y4559	1	529	4	2,116	
ServeRAID M5100 Series SSD Performance Key	90Y4273	1	399	1	399	
IBM Preferred Pro USB Keyboard	40K9584	1	29	1	29	
IBM 2-Button Optical Mouse - Black - USB	40K9200	1	19	1	19	
ServicePac for 3-Year 24x7x4 Support (x3650 M4)	21P2078	1	660	1		660
ASUS 18.5" Widescreen LCD Monitor (2 spares)	VH197D	3	120	3	360	
				Subtotal	89,246	660
Server Storage						
IBM S2 42U Standard Rack	93074RX	1	1,459	1	1,459	
IBM System Storage EXP2524 Storage Enclosure	174724X	1	3,999	4	15,996	
IBM 1M SAS cable	39R6529	1	119	4	476	
200GB 2.5" SAS SSD	81Y9956	1	4,299	84	361,116	
ServicePac for 3-Year 24x7x4 Support (EXP2524)	91Y5785 (67567JT)	1	1,200	4		4,800
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	1	300	1		300
				Subtotal	379,047	5,100
Server Software						
SQL Server 2012 Enterprise Edition		2a *	13,473	8	107,780	
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	111,779	259
Client Hardware						
IBM System x3650 M3 Configure-To-Order, includes:	7945AC1	1	6,160	1	6,160	
System Common Planar for 1U/2U	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	A1NX			2		
ServicePac for 3-Year 24x7x4 Support (x3650 M3)	21P2078	1	660	1		660
				Subtotal	6,160	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)	RCW-717	3		3	12	
				Subtotal	12	0
				Total	587,273	6,679
Dollar Volume Discount (See Note 1)	42.60%	1			204,675	
Microsoft Open Program Discount Schedule	37.94%	2			2,006	
Pricing: 1 - IBM - 1-800-656-0833, x35330; 2 - Microsoft; 3 - newegg.com				Three-Year Cost of Ownership USD:		\$387,271
Note 1: Discount applies to all line items where Pricing=1; pricing is for these or similar quantities.				TPC-E Throughput:		1,863.23
Discounts for similarly sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.				\$ USD/tpsE:		\$207.85
* These components are not immediately orderable. See the FDR for more information.						
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 x3650 M4
Microsoft SQL Server 2012**

**TPC-E 1.12.0
TPC Pricing 1.7.0**

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Numerical Quantities Summary				
Reported Throughput: 1863.23 tpsE		Configured Customers: 950,000		
Response Time (in seconds)	Minimum	Average	90 th Percentile	Maximum
Broker-Volume	0.01	0.02	0.03	0.93
Customer-Position	0.01	0.01	0.02	1.12
Market-Feed	0.01	0.01	0.02	0.70
Market-Watch	0.01	0.01	0.02	1.08
Security-Detail	0.01	0.01	0.02	0.91
Trade-Lookup	0.01	0.07	0.11	0.91
Trade-Order	0.01	0.03	0.05	0.68
Trade-Result	0.01	0.04	0.05	0.97
Trade-Status	0.01	0.01	0.02	0.90
Trade-Update	0.01	0.08	0.12	0.68
Data-Maintenance	0.01	0.02	N/A	0.06
Transaction Mix		Transaction Count	Mix %	
Broker-Volume		6,573,027	4.900%	
Customer-Position		17,439,087	13.000%	
Market-Feed		1,341,528	1.000%	
Market-Watch		24,146,410	18.000%	
Security-Detail		18,780,364	14.000%	
Trade-Lookup		10,731,659	8.000%	
Trade-Order		13,548,634	10.100%	
Trade-Result		13,415,264	10.000%	
Trade-Status		25,487,640	19.000%	
Trade-Update		2,682,906	2.000%	
Data-Maintenance		120	N/A	
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)				00:19:15
Measurement Interval (hh:mm:ss)				02:00:00
Business Recovery Time (hh:mm:ss)				00:09:42
Total Number of Transactions Completed in Measurement Interval				134,146,519