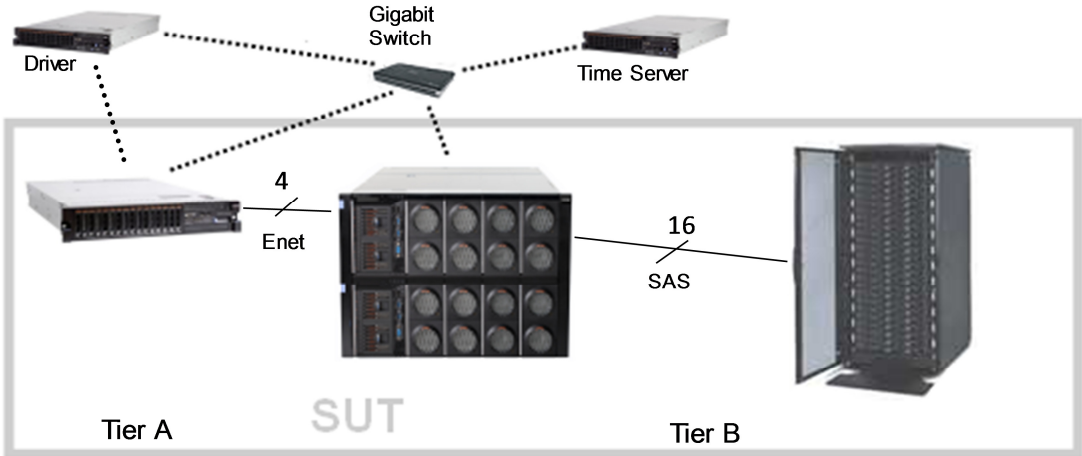
	System x[®] 3950 X6 Microsoft[®] SQL Server[®] 2014		TPC-E[™] 1.13.0 TPC Pricing 2.0.0
			Report Date: November 25, 2014
			Revision Date: November 25, 2014
TPC-E Throughput 9145.01 tpsE	Price/Performance \$192.38 USD per tpsE[™]	Availability Date November 25, 2014	Total System Cost \$1,759,232 USD
Database Server Configuration			
Operating System Microsoft Windows Server[®] 2012 Standard Edition	Database Manager Microsoft SQL Server 2014 Enterprise Edition	Processors/Cores/Threads 8/120/240	Memory 4096GB
			
System x3650 M4, with: <ul style="list-style-type: none"> - 2 x Intel[®] Xeon[®] Processor E5-2697 v2 2.70GHz (2 Procs/24 Cores/48 Threads) - 32GB Memory - 2 x 250GB SFF SATA (RAID-1) - 1 x ServeRAID M5110e - Onboard Quad Gb Ethernet - Dual Port Gb Ethernet 	System x3950 X6, with: <ul style="list-style-type: none"> - 8 x Intel Xeon Processor E7-8890 v2 2.80GHz (8 Procs/120 Cores/240 Threads) - 4096GB Memory - 2 x 300GB 10K SAS (RAID-1) - 6 x 800GB SATA SSD (RAID-10) - 2 x ServeRAID M5210 - 8 x ServeRAID M5120 - 4 x Dual 10Gb-T Ethernet 	16 x EXP2524 JBOD Enclosures, with: <ul style="list-style-type: none"> - 255 x 200GB 2.5" SAS SSD (3 x 19-drive RAID-5 DB data) - 9 x 22-drive RAID-5 DB data) - 56 x 400GB 2.5" SAS SSD (4 x 14-drive RAID-5 DB data) 311 Total External Drives	
Initial Database Size 38,595 GB	Redundancy Level: 1 RAID-10 Log RAID-5 Data		Storage 2 x 300GB 2.5" 10K SAS 6 x 800GB 2.5" SATA SSD 255 x 200GB 2.5" SAS SSD 56 x 400GB 2.5" SAS SSD



System x3950 X6 Microsoft SQL Server 2014

TPC-E 1.13.0

TPC Pricing 2.0.0

Report Date:
November 25, 2014

Revision Date:
November 25, 2014


Availability Date:
November 25, 2014

Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
System x3950 X6 Configure-To-Order, includes:	3837AC2		281,892	1	281,892	
x3950 X6 8U Chassis + Midplane	A4BM, A4A5			1		
X6 Compute Book with Intel Xeon Processor E7-8890 v2	A4AZ, A4BF			8		
X6 Primary I/O Book + X6 Storage Book	A4A0, A4A1			2		
X6 Half-length I/O Book	A4A2			4		
4x 2.5" HS SAS/SATA/SSD HDD Backplane	A4A6			3		
ServeRAID M5210 SAS/SATA Controller for System x	A3YZ			2		
Intel X540 ML2 Dual Port 10GbBase-T Adapter for System x	A40P			1		
Intel X540-T2 Dual Port 10GbBase-T Adapter for System x	A2ED			3		
1400W HE Redundant Power Supply	A54E			8		
S3700 800GB SATA 2.5" G3HS Enterprise SSD	A4U5			6		
300GB 10K 6Gbps SAS 2.5" G3HS HDD	A4TL			2		
System x Rail Kit	A4AA			1		
Power Cable	6311			8		
32GB PC3L-12800 ECC DDR3 1600MHz LP LRDIMM	A3SR			128		
ServeRAID M5120 SAS/SATA Controller	81Y4478	1	259	8	2,072	
ServeRAID M5100 Series 1GB Flash/RAID 5 Upgrade	81Y4559	1	475	8	3,800	
ServeRAID M5100 Series SSD Performance Key	90Y4273	1	49	1	49	
Preferred Pro Keyboard USB - US English 103P RoHS v2	00AM600	1	29	1	29	
2-Button Optical Mouse - Black - USB	40K9200	1	19	1	19	
ThinkVision E1922 18.5-inch LED Backlit LCD Monitor	60B8AAR6US	1	110	1	110	
ServicePac for 3-Year 24x7x4 Support (x3950 X6)	67568BU	1	1,500	1		1500
	Subtotal				287,971	1,500
Server Storage						
S2 42U Standard Rack	93074RX	1	1,565	1	1,565	
EXP2524 Storage Enclosure	610024X	1	3,999	16	63,984	
1M SAS cable	39R6529	1	119	16	1,904	
200GB 2.5 Inch Flash Drive	00NC573	1 - S	3,079	255	785,145	
400GB 2.5 Inch Flash Drive	00NC575	1	6,279	56	351,624	
ServicePac for 3-Year 24x7x4 Support (EXP2524)	91Y5785	1	1,200	16		19,200
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	1	315	1		315
	Subtotal				1,204,222	19,515
Server Software						
SQL Server 2014 Enterprise Edition	7JQ-00750	2a	13,472.50	60	808,350	
Windows Server 2012 Standard Edition	P73-05761	2	882	4	3,528	
Microsoft Problem Resolution Services	N/A	2a	259	1		259
	Subtotal				811,878	259
Client Hardware						
System x3650 M4 Configure-To-Order, includes:	7915AC1	1	12,328	1	12,328	
x3650 M4 Base + Planar	A1KF, A3V6			1		
750W High Efficiency Platinum AC Power Supply	A1H5			2		
Intel Xeon Processor E5-2697 v2 12C 2.7GHz 30MB 130W	A3VM, A3W5			2		
NetXtreme II 1000 Express Dual Port Ethernet Adapter	2995			1		
x3650 M4 PCIe Riser Card 1 (1 x8 FH/FL + 2 x8 FH/HL Slots)	A1JT			1		
System x Gen-III Slides Kit	A228			1		
250GB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD	A1NX			2		
System x Lightpath Kit	A1LF			1		
x3650 M4 8x 2.5" HS HDD Assembly Kit	A1JX			1		
4GB PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM	A3QE			8		
Power Cable	6263			2		
ServeRAID M5100 Series 512MB Cache/RAID 5 Upgrade	A1J3			1		
ServicePac for 3-Year 24x7x4 Support (x3650 M4)	67567XR	1	790	1		790
	Subtotal				12,328	790
Client Software						
Windows Server 2012 Standard Edition	P73-05761	2	882	1	882	
	Subtotal				882	0
Infrastructure						
Ethernet Cables	78004256	1		6	24	
	Subtotal				24	0
	Total				2,317,305	22,064
Dollar Volume Discount (See Note 1)	37.96%	1			579,402	
Microsoft Open Program Discount Schedule	16.67%	2			735	

Price: 1 - Lenovo 1-877-782-7134; 2 - Microsoft
 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.

Three-Year Cost of Ownership USD: \$1,759,232
TPC-E Throughput: 9,145.01
\$ USD/tpsE: \$192.38

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.

	System x3950 X6 Microsoft SQL Server 2014	TPC-E 1.13.0 TPC Pricing 2.0.0
		Report Date: November 25, 2014
		Revision Date: November 25, 2014
		Availability Date: November 25, 2014

Numerical Quantities Summary				
Reported Throughput: 9145.01 tpsE		Configured Customers: 4,700,000		
Response Time (in seconds)	Minimum	Average	90 Th Percentile	Maximum
Broker-Volume	0.00	0.02	0.04	3.12
Customer-Position	0.00	0.01	0.03	1.78
Market-Feed	0.00	0.01	0.04	2.50
Market-Watch	0.00	0.01	0.03	3.28
Security-Detail	0.00	0.01	0.02	1.52
Trade-Lookup	0.00	0.07	0.11	2.46
Trade-Order	0.00	0.04	0.08	1.74
Trade-Result	0.00	0.03	0.05	2.40
Trade-Status	0.00	0.01	0.02	2.04
Trade-Update	0.01	0.08	0.12	2.13
Data-Maintenance	0.00	0.02	N/A	0.25
Transaction Mix		Transaction Count	Mix %	
Broker-Volume		32,261,772	4.900%	
Customer-Position		85,592,352	13.000%	
Market-Feed		6,584,432	1.000%	
Market-Watch		118,512,357	18.000%	
Security-Detail		92,175,983	14.000%	
Trade-Lookup		52,672,331	8.000%	
Trade-Order		66,498,305	10.100%	
Trade-Result		65,844,115	10.001%	
Trade-Status		125,097,126	19.000%	
Trade-Update		13,167,894	2.000%	
Data-Maintenance		120	N/A	
Test Duration and Timings				
Ramp-up Time (hh:mm:ss)			00:43:46	
Measurement Interval (hh:mm:ss)			02:00:00	
Business Recovery Time (hh:mm:ss)			00:38:27	
Total Number of Transactions Completed in Measurement Interval			658,406,667	