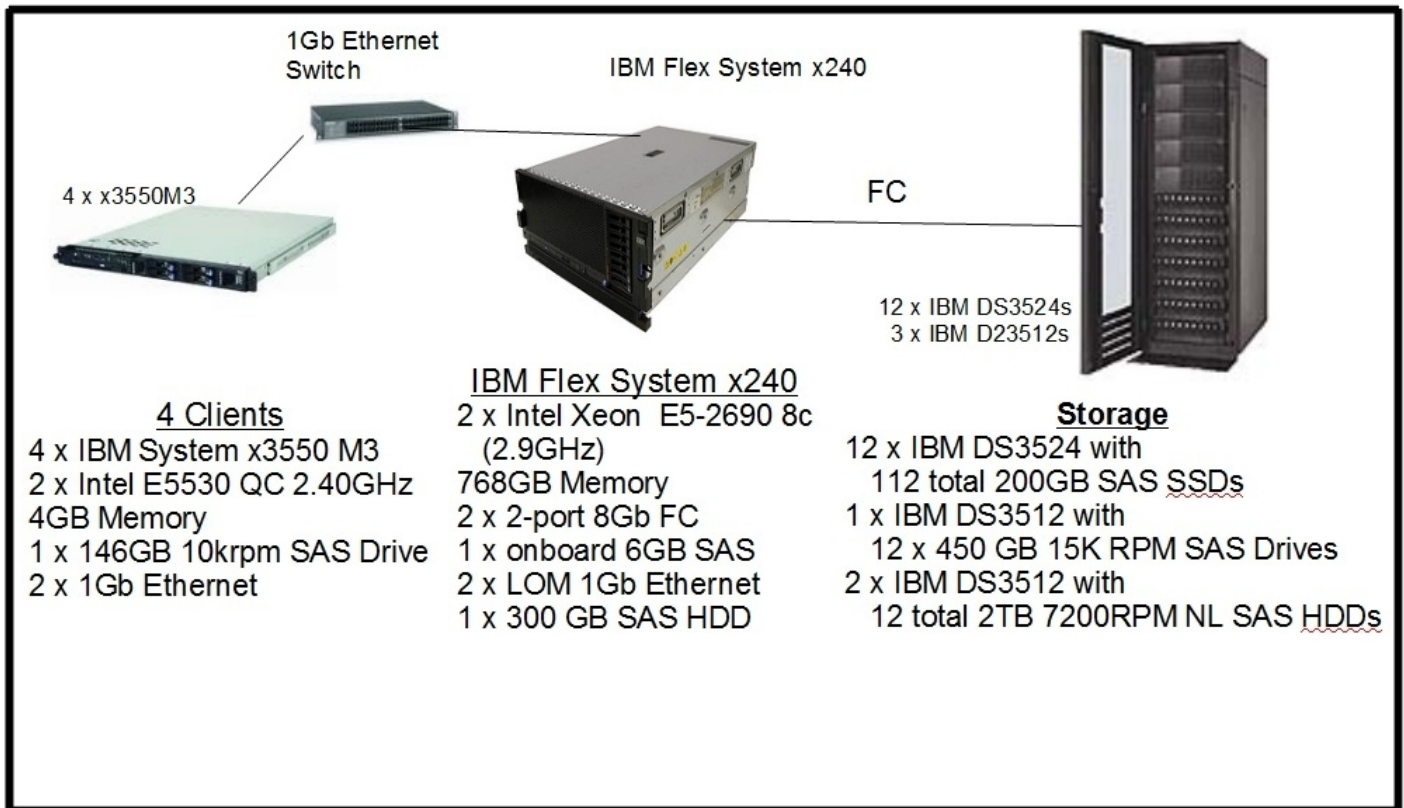


IBM Flex System x240 w/ DB2® v9.7

TPC-C Rev. 5.11
TPC Pricing Spec Rev 1.7

Report Date:
April 11, 2012

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$786,171 USD	1,503,544	\$0.53 USD	08/16/2012
Database Processors/Cores/Threads	Database Manager	Operating System	Other Software
2/16/32 2.90 GHz Intel Xeon E5-2690	DB2 9.7	RHEL 6.2	Microsoft Visual C++ Microsoft COM+
			No. Users
			1,196,160



System Components	Each of the 4 Clients		Server	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	2/8/16	2.4GHz Xeon E5530 4 x 256KB L2, 1 x 8MB L3	2/16/32	2.90 GHz Intel Xeon E5-2690 20MB L3
Memory	2	2 GB	24	32 GB
Disk Controllers	1	SAS	2 1	2-port 8Gb FC Adapter IBM 6Gb onboard SAS
Disk Drives	1	146 GB	12 12 112 1	2 TB 7200 RPM SAS 450 GB 15K RPM SAS 2.5" 200GB SAS SSD drives 300GB 10K RPM SAS HDD
Total Storage		146 GB		54.93 TB
Terminals	1	System Console	1	System Console

IBM Corporation	Flex System x240 with DB2 9.7				TPC-C v5.11, TPC Pricing v1.7		
	Report Date: April 11, 2012;						
Description	Part Number	Brand	Price Source	Unit Price	Qty	Extended Price	3-Yr. Maint. Price
Server Hardware, Includes:							
Flex System Chassis	8721ATY	IBM		188,039	1	188,039	Included
Flex System Chassis Rack Kit	A10X				1		
Chassis 2500W Power Module	ADUD				4		
Flex System Chassis Management Module	68Y7030				1		
2m, 16A/100-250V Rack Power Cable	6292				6		
Chassis 80mm Fan Module Pair	ADUA				4		
Brocade 8Gb SFP+ Optical Transceiver	88Y6416				40		
1.5m Blue Cat5e Cable	3802				2		
EN2092 1Gb Ethernet Scalable Switch	49Y4294				2		
FC5022 16Gb San Scalable Switch	88Y6374				2		
FC5022 16Gb San Scalable Switch-Upgrade1	88Y6382				2		
Flex System x240 EP 2S Compute Node with Embedded 10Gb Virtual Fabric	8737J1x				1		
E5-2690 8C 2.9GHz 20MB Cache 1600MHz 135W	49Y8116				2		
Flex System x240 FC3172 2-port 8Gb FC Adapter	69Y1938				2		
32GB 1333MHz LRDIMMs	90Y3105				24		
PXU (PCIe expansion module)	81Y8983				1		
IBM 300GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD	42D0637				1		
3 Year Onsite Repair 24x7 4 Hour Response	00X8521.00X8462				1		
PRQ1000 PT Dual Port Ethernet Adapter	39Y6129	IBM	1	275	1	275	
Acer V193WEjB 19" Wide LED Monitor	2078770	CDW	4	95	1	95	
IBM Preferred Pro Keyboard USB - US English 103P	40K9584	IBM	1	29	1	29	
						Subtotal	188,438
Server Storage							
IBM DS3512							
IBM System Storage DS3512 Express Dual Controller Storage System	2802			8,799	1	8,799	
450GB 15K 6Gb SAS 3.5" HDD	5105			579	12	6,948	
8Gb FC 4 Port Daughter Card	3611			1,599	2	3,198	
5M Fiber Cable (LC-LC)	5605			129	2	258	
US 10A line C13 to NEMA 5-15P (2.8M)	6313			19	2	38	
IBM DS3512							
IBM System Storage DS3512 Express Dual Controller Storage System	2802			8,799	2	17,598	
2TB 7200RPM 6Gb SAS NL 3.5" HDD	5175			709	12	8,508	
8Gb FC 4 Port Daughter Card	3611			1,599	4	6,396	
5M Fiber Cable (LC-LC)	5605			129	4	516	
US 10A line C13 to NEMA 5-15P (2.8M)	6313			19	4	76	
IBM DS3524							
IBM System Storage DS3524 Express Dual Controller Storage System	2812	IBM	1	9,299	12	111,588	
200GB 2.5" SAS SSD	5500			4,199	112	470,288	
8Gb FC 4 Port Daughter Card	3611			1,599	24	38,376	
5M Fiber Cable (LC-LC)	5605			129	24	3,096	
US 10A line C13 to NEMA 515P (2.8M)	6313			19	24	456	
Turbo Performance Option	4400			6,850	12	82,200	
NetBAY S2 42U Standard Rack	93074RX	IBM	1	1,459	2	2,918	
ServicePac for 3-Year 24x7x4 Support (DS3524)	67567DT	IBM	1	1,350	12	16,200	
ServicePac for 3-Year 24x7x4 Support (DS3512)	67567DN	IBM	1	1,350	3	4,050	
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM	1	300	3	900	
						Subtotal	761,257
							21,150
Server Software							
DB2 ESE 9.7 SW License and Maintenance 12 Months		IBM	1	438.00	1120	490,560	
DB2 ESE 9.7 SW Maintenance Renewal - 1 Year		IBM	1	87.50	2240		196,000
Redhat Linux Server, Premium (1-2 sockets) (up to 1 guest)		Redhat	3	1,299	3	3,897	
						Subtotal	494,457
							196,000
Client Hardware							
IBM System x3550 M3 Base							
Base with 460W Redundant AC Power Supply	A02X	IBM	1	409	4	1,636	
Intel Xeon Processor E5530 4C (2.4GHz 8MB L3 Cache 1066MHz 80w)	3640			859	4	3,436	
Addl. Intel Xeon Processor E5530 4C (2.4GHz 8MB L3 Cache 1066MHz 80w)	7732			839	4	3,356	
2GB DDR3-1333 1Rx4 LP RDIMM	8935			109	8	872	
2.8m 10A/100-50V Rack Power Cable	6311			10	8	80	
1.5m Blue Cat5e Cable	3802			17	4	68	
IBM 146GB 6Gbps SAS 2.5" SFF Slim-HS HDD	5536			389	4	1,556	
System Common planar for 1U/2U	5663			799	4	3,196	
PCI-Express (1x16 slot; LP) Riser Card 1	5076			59	4	236	
UltraSlim Enhanced SATA DVD-ROM	4161			89	4	356	
PCI-Express (1x16 slot; FH/HL) Riser Card 2	4375			59	4	236	
ServeRaid-BR10i SAS/SATA Controller	7732			299	4	1,196	
IBM System x3550 M3 4 HDD and optical kit	1788			99	4	396	
IBM 460W redundant power supply	A02H			229	4	916	
Line cord - 2.8m, 10A/250V	6372			10	8	80	
3 Year Onsite Repair 24x7 4 Hour Response	6756298	IBM	1	495	4	1,980	
						Subtotal	17,616
							1,980
Client Software							
Windows Server Web Edition 2008 R2	LWA-00984	Microsoft	5	469	4	1,876	
Visual Studio Standard 2008	127-00166	Microsoft	5	250	1	250	
Microsoft Problem Resolution Services	NA	Microsoft	5	259	1		259
						Subtotal	2,126
							259
Third-Party Components							
IOGEAR 2 port USB KVM Switch (2 spares)	575404	cdw	4	36	3	108	
NETGEAR GS748T 48-port Gigabit Smart Switch (2 spares)	698653	cdw	4	599	3	1,797	
UPS - powercom KIN-1500AP 1500VA 900Watts (2 spares)	N82E16842106115	newegg	2	135	3	405	
						Subtotal	2,310
							0
						Total	1,466,204
IBM Dollar Volume Discount (See Note 1)			1			Note 1 Discount	899,422
Pricing: 1 - IBM - 1-800-656-0833 x35304; 2 - newegg.com 3 - RedHat; 4 - CDW.com; 5 - Microsoft						Three-Year Cost of Ownership USD:	786,171
Note 1: Discount based on IBM Direct guidance applies to all line items where Pricing=1.						tpmC:	1,503,544
* These components are not immediately orderable. See the FDR for more information.						\$ USD/tpmC:	0.53
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 Flex System x240

MQTH, computed Maximum Qualified Throughput: 1,503,544 tpmC

<u>Response Times (in seconds)</u>	<u>90th %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.400	0.270	11.234
Payment	0.400	0.266	10.719
Order-Status	0.400	0.267	14.500
Delivery (interactive)	0.300	0.173	5.312
Delivery (deferred)	0.470	0.123	1.50
Stock-Level	0.400	0.273	9.937
Menu	0.282	0.173	21.547

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	44.951%
Payment	43.020%
Order-Status	4.010%
Delivery	4.009%
Stock-Level	4.010%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.000/0.00	18.000/12.036	18.063/120.375
Payment	3.000/0.00	3.000/12.036	3.063/120.375
Order-Status	2.000/0.00	2.000/10.038	2.047/100.360
Delivery	2.000/0.00	2.000/5.036	2.047/50.359
Stock-Level	2.000/0.00	2.000/5.036	2.062/50.359

Test Duration

Ramp-up Time	1 hour 13 minutes
Measurement interval	2 hours 0 minutes
Transactions during measurement interval (all types)	401,381,861

Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A
