



IBM® eServer® xSeries® 366 c/s
with
Microsoft® SQL Server 2000

TPC-C Rev. 5.3

Report Date: April 21, 2005

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$993,179 USD	141,504 tpmC	\$7.02 USD / tpmC	Aug. 20, 2005

Database Server Processors/Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
4/4/8 64-Bit Intel® Xeon™ Processor MP at 3.66GHz	Microsoft SQL Server 2000 Enterprise Edition SP3 with QFE 821334	Microsoft Windows® Server 2003 Enterprise Edition with SP1	Microsoft Visual C++ 6.0 Microsoft COM+	112,960

4 RTEs emulating 112,960 Users



System Component	Qty	Server:	Qty	Each of Four Clients:
Processors/Cores/Threads	4/4/8	Intel Xeon Processor MP at 3.66GHz	2/2/4	3.2GHz Xeon
Cache		1MB L2 Cache		1MB L2 Cache
Memory	16	4GB ECC RDIMM	4	512MB
Disk Controllers	2	ServeRAID-6M Adapter	1	Ultra320 SCSI Interface
Disk Drives	1	36.4GB (15000 rpm)	1	36.4GB (15000 rpm)
	420	36.4GB (15000 rpm)		
	14	73.4GB (15000 rpm)		
Total Storage		15229.59GB		

IBM Corporation	IBM @server xSeries 366 c/s with Microsoft SQL Server 2000			TPC-C Revision 5.3		
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Description	Part Number	Third Party Brand	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
xSeries 366 with 1 x 3.66GHz/1MB L2 Cache Intel Xeon Processor MP	8863-2RU	IBM	1	9,999	1	9,999
xSeries 3.66GHz/1MB L2 Cache Intel Xeon Processor MP	13N0695	IBM	1	1,999	3	5,997
8GB (2x4GB) PC2-3200 CL3 2RX4 ECC DDR2 SDRAM RDIMM	30R5145	IBM	1	17,879	8	143,032
Active Memory™ 4-Slot Memory Expansion Card	13M7409	IBM	1	499	3	1,497
ServeRAID-6M Ultra320 SCSI Adapter	32P0033	IBM	1	999	2	1,998
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	149	1	149
IBM Preferred Pro Full-Size Keyboard PS/2	31P7415	IBM	1	29	1	29
IBM Sleek 2-Button Mouse	28L3673	IBM	1	15	1	15
QLogic SANBlade QLA2350 FC-VI Adapter (2 spares)	QLA2350-BK	QLogic	3	1,995	3	5,985
ServicePac for 3-Year 24x7x4 Support (x366)	96P2253	IBM	1	900	1	900
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	1	90
Discount on xSeries Hardware (15%)						24,407
Discount on ServicePacs (20%)						198
					Subtotal	144,294
						792
Server Storage						
IBM TotalStorage DS4000 Host Bus Adapter	24P0960	IBM	1	1,485	3	4,455
IBM TotalStorage DS4500 Midrange Disk Subsystem	17429OU	IBM	1	66,500	3	199,500
IBM DS4000 Mini Hub	19K1269	IBM	1	899	6	5,394
IBM Short Wave SFP Module	19K1271	IBM	1	499	127	63,373
IBM 1m LC-LC Fibre Channel Cable	19K1247	IBM	1	79	48	3,792
IBM 5m LC-LC Fibre Channel Cable	19K1248	IBM	1	129	21	2,709
IBM TotalStorage DS4000 EXP710 Storage Exp. Unit	1740710	IBM	1	6,000	30	180,000
IBM TotalStorage SAN Fibre Channel Switch Model H16	2005H16	IBM	1	11,755	1	11,755
2Gbps FC 36.4GB 15K Hot-Swap HDD	06P5772	IBM	1	1,115	420	468,300
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM	1	3,099	2	6,198
73.4GB 15K Ultra320 SCSI Hot-Swap Drive	90P1319	IBM	1	499	14	6,986
36.4GB 15K Ultra320 SCSI Drive	90P1318	IBM	1	349	1	349
Netfinity 4.2M Ultra2 SCSI Cable	03K9310	IBM	1	75	3	225
IBM UPS 750TLV	21301TX	IBM	1	299	1	299
IBM S2 42U Standard Rack	93074SX	IBM	1	1,489	4	5,956
ServicePac for 3-Year 24x7x4 Support (EXP700)	41L2768	IBM	1	760	30	22,800
ServicePac for 3-Year 24x7x4 Support (DS4500)	96P2062	IBM	1	1,087	3	3,261
ServicePac for 3-Year 24x7x4 Support (EXP400)	41L2768	IBM	1	760	2	1,520
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM	1	300	4	1,200
ServicePac for 3-Year 24x7x4 Support (Switch)	29R5130	IBM	1	2,460	1	2,460
Discount on Fibre Channel Disks (30%)						140,490
Discount on Fibre Channel Storage (20%)						94,196
Discount on xSeries Storage (15%)						3,002
Discount on ServicePacs (20%)						6,248
					Subtotal	721,603
						24,993
Server Software						
Microsoft SQL Server 2000 Enterprise Edition*	810-00846	Microsoft	2	16,541	4	66,164
Microsoft Windows Server 2003 Enterprise Edition*	P72-00264	Microsoft	2	2,334	1	2,334
Microsoft Problem Resolution Services		Microsoft	2	245	1	245
					Subtotal	68,498
						245
Client Hardware						
x226 with 3.2GHz/1MB Xeon DP, 512MB (2x256MB) Memory	8648-2AU	IBM	1	1,515	4	6,060
3.2GHz/1MB Xeon DP Processor Upgrade	13N0673	IBM	1	799	4	3,196
1GB (2x512MB) PC-3200 DDR2 ECC SDRAM RDIMM	73P3522	IBM	1	399	8	3,192
36.4GB 15K Ultra320 SCSI Drive	90P1318	IBM	1	349	4	1,396
PRO/1000 MT Dual-Port Server Adapter	73P2701	Intel	1	249	4	996
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	149	4	596
QLogic SANBlade QLA 2350 FC-VI Adapter	QLA2350-BK	QLogic	3	1,995	4	7,980
ServicePac for 3-Year 24x7x4 Support (x226)	96P2250	IBM	1	750	4	3,000
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	4	360
Discount on xSeries Hardware (15%)						2,315
Discount on ServicePacs (20%)						672
					Subtotal	21,101
						2,688
Client Software						
Microsoft Windows 2000 Server with COM+*	C11-00821	Microsoft	2	738	4	2,952
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft	2	109	1	109
					Subtotal	3,061
Network Components						
IBM TotalStorage SAN Fibre Channel Switch Model H08	2005H08	IBM	1	4,750	1	4,750
IBM Short Wave SFP Module	19K1271	IBM	1	499	1	499
IBM 5M LC-LC Fibre Channel Cable	19K1248	IBM	1	129	5	645
ServicePac for 3-Year 24x7x4 Support (Switch)	29R5122	IBM	1	1,487	1	1,487
Discount on TotalStorage Hardware (20%)						1,179
Discount on ServicePac (20%)						297
					Subtotal	4,715
						1,190
					Total	963,272
						29,907
Pricing: 1- IBM - To order, call 1-888-SHOP-IBM, and ask for xSeries Sales. Volume discounts based on IBM Direct Guidance (Call 1-919-486-0818 for price verification.) 2 - Microsoft (*See Quote for Discounts); 3 - QLogic Audited by Bradley J. Askins, InfoSizing, Inc.				Three-Year Cost of Ownership USD:		\$993,179
				tpmC:		141,504
				\$ USD/tpmC:		\$7.02
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.						

Numerical Quantities Summary			
MQTh, Computed Maximum Qualified Throughput: 141,504 tpmC			
Response Times (in seconds)	90th Percentile	Average	Maximum
New-Order	0.52	0.34	7.11
Payment	0.46	0.28	4.02
Delivery	0.36	0.19	0.92
Stock Level	0.88	0.64	2.48
Order Status	0.48	0.31	7.39
Delivery (Deferred)	0.18	0.13	4.61
Menu	0.33	0.19	1.63
Response Time Delay Added for Emulated Components: 0.1 Seconds			
Transaction Mix (in percent of total transactions)			Percent
New-Order			44.96
Payment			43.02
Delivery			4.01
Stock-Level			4.01
Order Status			4.01
Keying/Think Times (in seconds)	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.00 / 12.04	18.03 / 120.31
Payment	3.00 / 0.00	3.00 / 12.04	3.03 / 120.33
Delivery	2.00 / 0.00	2.00 / 5.04	2.03 / 50.31
Stock Level	2.00 / 0.00	2.00 / 5.04	2.03 / 50.31
Order Status	2.00 / 0.00	2.00 / 10.06	2.03 / 100.33
Test Duration			
Ramp-up time			51 minutes 25 seconds
Measurement interval			120 minutes
Number of checkpoints			4
Checkpoint interval			30 minutes
Number of transactions (all types) completed in measurement interval			39,279,828