



**IBM @server xSeries 220 c/s
with Microsoft SQL Server 2000**

TPC-C Rev. 5.0

Report Date: June 3, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
\$42,287	12,009.46 tpmC	\$3.52 / tpmC	June 3, 2002

Processors	Database Manager	Operating System	Other Software	Number of Users
Database Server: 1 Pentium III 1.4GHz Client: 1 Pentium III 1.13GHz	Microsoft® SQL Server 2000 Standard Edition	Microsoft Windows® 2000 Server	Microsoft Visual C++ 6.0 Win32 Microsoft COM+	9,600

1 RTE emulating 9,600 Users



1 x IBM xSeries 220
1 x 1.13GHz Pentium III

1 x IBM xSeries 220
1 x 1.4GHz/512MB Pentium III Processor
2 x Mylex AcceleRAID A352 Adapters
1 x 18.2GB Drive

3 x EXP300 Storage
40 x 18.2GB Drives
2 x 36.4GB Drives

System Component	Qty	Server	Qty	Client
Processors	1	1.4GHz Pentium III	1	1.13GHz Pentium III
Cache		w/512KB L2 Cache		w/512KB L2 Cache
Memory	1	128MB	1	128MB
	2	1GB ECC SDRAM RDIMM	1	256MB
Disk Controllers	2	Mylex AcceleRAID A352 Adapter with 32MB	1	Ultra160 SCSI Interface
Disk Drives	41	18.2GB (10000 rpm)	1	18.2GB Hard Disk
	2	36.4GB (10000 rpm)		
Total Storage		761.85GB		
Tape Drive	1	20/40GB SCSI Tape Drive		

IBM Corporation	IBM @server xSeries 220 c/s with Microsoft SQL Server 2000			TPC-C Rev. 5.0			
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Description	Order Number	Third-Party Brand	Pricing	Unit Price	Qty	Ext. Price	3-Yr. Maint.*
Server Hardware							
xSeries 220 / 1.4GHz/512KB Pentium III	8646-51X	IBM	1	\$1,249	1	\$1,249	\$748
1GB ECC SDRAM RDIMM Memory Kit	33L3326	IBM	1	989	2	1,978	0
Mylex AcceleRAID A352 SCSI Adapter	08P2420	Mylex	3	590	4	2,360	0
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM	1	105	4	420	0
E54 15" (13.8" Viewable) Color Monitor*	633147N	IBM	1	149	1	149	90
20/40GB Internal SCSI Tape Drive	00N7991	IBM	1	769	1	769	0
NetBAY11 Enterprise Rack*	9306110	IBM	1	519	1	519	168
Storage Hardware							
Netfinity EXP300 Rack Storage Enclosure*	3531-1RU	IBM	1	3,179	3	9,537	600
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	41	10,175	0
36.4GB 10K Ultra160 SCSI Drive	06P5755	IBM	1	549	2	1,098	0
Subtotal						\$29,354	\$1,606
Server Software							
Microsoft SQL Server 2000 Standard Edition	228-01079	Microsoft	2	4,999	1	\$4,999	\$0
Microsoft Windows 2000 Server	C11-00821	Microsoft	2	738	1	738	0
Three-Year Maintenance for Software		Microsoft	2	1,950	3		5,850
Subtotal						\$5,737	\$5,850
Client Hardware							
xSeries 220 / 1.13GHz/512KB Pentium III*	8646-31X	IBM	1	949	1	\$949	\$748
256MB 133MHz ECC SDRAM RDIMM	10K0020	IBM	1	245	1	245	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	1	275	0
E54 15" (13.8" Viewable) Color Monitor*	633147N	IBM	1	149	1	149	90
Subtotal						\$1,618	\$838
Client Software							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft	2	738	1	738	0
Microsoft Visual C++ Professional 6.0 Win32	048-00317	Microsoft	2	549	1	549	0
Subtotal						\$1,287	\$0
User Connectivity							
Cross-over Cable (7 ft.)*** (incl. 2 spares)	CBLC57		4		3	3	0
Subtotal						\$3	\$0
Total						\$37,999	\$8,294
Large volume discount on IBM hardware of 14%; prices vary if purchased separately.			1			\$4,006	\$0
Notes: * The standard 3-year warranties on IBM hardware have been upgraded to 7x24, 4-hour response time coverage. ** Five-year warranty. *** 10% or minimum 2 spares are added in place of on-site service (products have a 5-year return-to-vendor-warranty) Pricing: 1 - IBM Corp.; 2 - Microsoft Corp.; 3 - Computer Giants; 4 - LanAdapters.com Audited by Bradley J. Askins of InfoSizing, Inc.				Three-Year Cost of Ownership: \$42,287			
				tpmC Rating: 12,009.46			
				\$ / tpmC: \$3.52			
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 specification. 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			
MQTh, Computed Maximum Qualified Throughput:			12,009.46 tpmC
Response Times (in seconds)	Average	Maximum	90 %-tile
New-Order	0.38	3.81	0.53
Payment	0.24	1.07	0.36
Delivery	0.11	0.56	0.11
Stock Level	2.23	4.42	3.03
Order Status	0.27	3.94	0.39
Delivery (Deferred)	0.48	1.34	0.74
Menu	0.11	0.58	0.11
Transaction Mix (in percent of total transactions)		Total Occurrences	Percent
New-Order		1,441,135	44.86
Payment		1,382,601	43.04
Delivery		129,915	4.04
Stock-Level		129,490	4.03
Order Status		129,058	4.02
Emulation Delay (in seconds)	Response Time		Menu
New-Order	0.1		0.1
Payment	0.1		0.1
Delivery	0.1		0.1
Stock-Level	0.1		0.1
Order Status	0.1		0.1
Keying/Think Times (in seconds)	Average	Minimum	Maximum
New Order	18.01 / 12.06	18.00 / 0.00	18.06 / 120.50
Payment	3.02 / 12.05	3.00 / 0.00	3.06 / 120.50
Delivery	2.01 / 5.07	2.00 / 0.00	2.05 / 50.50
Stock Level	2.01 / 5.05	2.00 / 0.00	2.06 / 50.50
Order Status	2.01 / 10.03	2.00 / 0.00	2.05 / 100.50
Test Duration			
Ramp-up time			25 minutes
Measurement interval			120 minutes
Number of transactions (all types) completed in measurement interval			3,342,111
Ramp-down time			4 minutes
Number of checkpoints in measurement interval			4
Checkpoint interval			30 minutes