IBM	IBM @server xSeries 225 c/s with Microsoft SQL Server 2000	TPC-C Rev. 5.0
		Report Date: December 4, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$50,509	**18, 077.98 tpmC**	**$2.79 / tpmC**	**February 12, 2003**

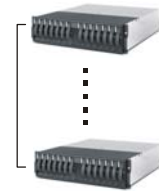| Processors	Database Manager	Operating System	Other Software	Number of Users
Database Server: 1 Intel® Xeon™ 2.4GHz **Client: 1 Pentium® III 1.4GHz**	**Microsoft® SQL Server 2000 Standard Edition with SP3**	**Microsoft Windows® 2000 Server with SP2**	**Microsoft Visual C++ Microsoft COM+**	**14,700**

1 RTE emulating 14,700 Users

1 x IBM xSeries 220
1 x 1.4GHz Pentium III

1 x IBM xSeries 225
1 x 2.4GHz/512MB Xeon Processor
3 x Mylex AcceleRAID A352 Adapters
1 x 18.2GB Drive
2 x 73.4GB Drives

4 x EXP300 Storage
56 x18.2GB Drives

System Component	Qty	Server	Qty	Client
Processors	**1**	**2.4GHz Xeon**	**1**	**1.4GHz Pentium III**
Cache		**512KB L2 Cache**		**512KB L2 Cache**
Memory	**2**	**256MB**	**3**	**128MB**
	2	**1GB ECC SDRAM RDIMM**	**1**	**256MB**
Disk Controllers	**3**	**Mylex AcceleRAID A352 Adapter with 32MB**	**1**	**Ultra160 SCSI Interface**
	1	**Integrated Ultra320 SCSI**		
Disk Drives	**57**	**18.2GB (10000 rpm)**	**1**	**18.2GB Hard Disk**
	2	**73.4GB (10000 rpm)**		
Total Storage		**1101.65GB**		
Tape Drive	**1**	**20/40GB SCSI Tape Drive**		

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Description	Order Number	Third-Party Brand	Pricing	Unit Price	Qty	Ext. Price	3-Yr. Maint.*
Server Hardware							
xSeries 225 w/ 1 x 2.4GHz/512KB Xeon 2 x 256MB 133MHz ECC SDRAM Integrated Gigabit Ethernet Interface Integrated Dual-Channel Ultra320 SCSI	8647-3AX	IBM	1	$1,529	1	$1,529	$698
1GB ECC SDRAM RDIMM Memory Kit	33L5039	IBM	1	779	2	1,558	0
Mylex AcceleRAID A352 SCSI Adapter	08P2420	Mylex	3	610	5	3,050	0
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM	1	105	6	630	0
E54 15" (13.8" Viewable) Color Monitor*	633147N	IBM	1	139	1	139	90
20/40GB Internal SCSI Tape Drive	00N7991	IBM	1	769	1	769	0
Storage Hardware							
EXP300 Rack Storage Enclosure*	3531-1RU	IBM	1	3,179	4	12,716	800
EXP300 Rack-to-Tower Conversion Kit	09N7296	IBM	1	319	1	319	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	57	15,675	0
73.4GB 10K Ultra160 SCSI Drive	06P5756	IBM	1	769	2	1,538	0
NetBAY11 Enterprise Rack*	9306110	IBM	1	519	1	519	168
					Subtotal	$38,442	$1,756
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 / 1.4GHz/512KB Pentium III* 1 x 128MB 133MHz ECC SDRAM	8646-51X	IBM	1	1,089	1	$1,089	$698
256MB 133MHz ECC SDRAM RDIMM	10K0020	IBM	1	219	1	219	0
128MB 133MHz ECC SDRAM RDIMM	10K0018	IBM	1	115	2	230	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	1	275	0
IBM 10/100 Dual-Port Server Adapter	22P4901	IBM	1	209	2	418	0
E54 15" (13.8" Viewable) Color Monitor*	633147N	IBM	1	139	1	139	90
					Subtotal	$2,370	$788
Client Software							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft	2	738	1	738	0
Microsoft Visual C++	254-00170	Microsoft	2	109	1	109	0
					Subtotal	$847	$0
User Connectivity							
Cross-over Cable (7 ft.)*** (incl. 2 spares)	CBLC5C7		4	2	3	6	0
					Subtotal	$6	$0
					Total	$47,402	$8,394
Large volume discount on IBM hardware of 14%; prices vary if purchased separately.			1			$5,287	$0

Notes: * The standard 3-year warranties on IBM hardware have been upgraded to 7x24x4 including parts exchange (ServicePac 69P9511). ** 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:** $50,509
	tpmC Rating: 18,077.98
	$ / tpmC: $2.79

Numerical Quantities Summary

MQTh, Computed Maximum Qualified Throughput:			18,077.98 tpmC

Response Times (in seconds)	Average	Maximum	90 %-tile
New-Order	0.60	5.52	0.90
Payment	0.39	5.24	0.66
Delivery	0.30	1.25	0.56
Stock Level	2.83	6.75	4.53
Order Status	0.49	5.47	0.78
Delivery (Deferred)	1.07	3.52	1.68
Menu	0.31	1.28	0.58

Transaction Mix (in percent of total transactions)	Total Occurrences	Percent
New-Order	2,169,358	44.89
Payment	2,078,008	43.00
Delivery	195,411	4.04
Stock-Level	194,767	4.03
Order Status	194,960	4.03

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 / 12.03	18.00 / 0.00	18.03 / 120.50
Payment	3.01 / 12.03	3.00 / 0.00	3.03 / 120.50
Delivery	2.01 / 5.02	2.00 / 0.00	2.02 / 50.50
Stock Level	2.01 / 5.01	2.00 / 0.00	2.02 / 50.50
Order Status	2.01 / 10.02	2.00 / 0.00	2.02 / 100.50

Test Duration	
Ramp-up time	18 minutes
Measurement interval	120 minutes
Number of transactions (all types) completed in measurement interval	5,027,871
Ramp-down time	3 minutes
Number of checkpoints in measurement interval	4
Checkpoint interval	30 minutes