

**IBM @server™ xSeries® 235 c/s**  
**With**  
**Microsoft® SQL Server 2000**

TPC-C Rev. 5.1

Report Date: July 10, 2003

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$46,539</b>	<b>18,936.05 tpmC</b>	<b>\$2.46 / tpmC</b>	<b>July 10, 2003</b>

Processors	Database Manager	Operating System	Other Software	Number of Users
<b>Database Server: 1</b> <b>Intel® Xeon™ DP</b> <b>3.06GHz</b> <b>Client: 1 Xeon DP</b> <b>2.4GHz</b>	<b>Microsoft</b> <b>SQL Server 2000</b> <b>Standard Edition</b>	<b>Microsoft</b> <b>Windows® Server</b> <b>2003 Standard</b> <b>Edition</b>	<b>Microsoft Visual C++</b> <b>Microsoft COM+</b>	<b>15,300</b>

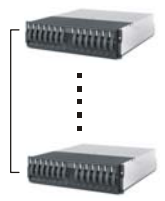
1 RTE emulating 15,300 Users



1 x IBM xSeries 225  
1 x 2.4GHz Xeon DP



1 x IBM xSeries 235  
1 x 3.06GHz/512KB Xeon DP  
3 x Mylex AcceleRAID A352 Adapters  
1 x 18.2GB Drive  
2 x 73.4GB Drives



3 x EXP300 Storage  
42 x 18.2GB Drives

System Component	Qty	Server	Qty	Client
Processors	1	3.06GHz Xeon DP	1	2.4GHz Xeon DP
Cache		512KB L2 Cache		512KB L2 Cache
Memory	2	256MB	4	256MB
	2	1GB ECC SDRAM RDIMM		
Disk Controllers	3	Mylex AcceleRAID A352 Adapter with 32MB	1	Ultra320 SCSI Interface
	1	Integrated Ultra320 SCSI		
Disk Drives	42	18.2GB (15000 rpm)	1	18.2GB (10000 rpm)
	2	73.4GB (10000 rpm)		
	1	18.2GB (10000 rpm)		
Total Storage		863.43GB		
Tape Drive	1	20/40GB SCSI Tape Drive		

<b>IBM Corporation</b>	<b>IBM @server xSeries 235 c/s with Microsoft SQL Server 2000</b>	TPC-C Rev. 5.1
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Description	Order Number	Third-Party Brand	Pricing	Unit Price	Qty	Ext. Price	3-Yr. Maint.*
<b>Server Hardware</b>							
xSeries 235 w/ 1 x 3.06GHz/512KB Xeon DP 2 x 256MB PC2100 ECC SDRAM Integrated Dual-Channel Ultra320 SCSI	8671-81X	IBM	1	\$2,949	1	\$2,949	\$689
1GB ECC SDRAM RDIMM Memory Kit	33L5039	IBM	1	659	2	1,318	0
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	1	275	0
Mylex AcceleRAID A352 SCSI Adapter (+2)	08P2420	Mylex	3	580	5	2,900	0
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM	1	105	6	630	0
E54 15" (13.8" Viewable) Color Monitor*	633147N	IBM	1	129	1	129	90
20/40GB Internal SCSI Tape Drive	00N7991	IBM	1	699	1	699	0
<b>Storage Hardware</b>							
EXP300 Rack Storage Enclosure*	3531-1RU	IBM	1	3,179	3	9,537	600
18.2GB 15K Ultra160 SCSI Drive	06P5767	IBM	1	329	42	13,818	0
73.4GB 10K Ultra160 SCSI Drive	06P5756	IBM	1	639	2	1,278	0
NetBAY11 Enterprise Rack*	9306110	IBM	1	519	1	519	168
<b>Subtotal</b>						<b>\$34,052</b>	<b>\$1,547</b>
<b>Server Software</b>							
Microsoft SQL Server 2000 Standard Edition	228-01079	Microsoft	2	4,999	1	\$4,999	\$0
Microsoft Windows Server 2003 SE	P73-00295	Microsoft	2	738	1	738	0
Three-Year Maintenance for Software		Microsoft	2	1,950	3		5,850
<b>Subtotal</b>						<b>\$5,737</b>	<b>\$5,850</b>
<b>Client Hardware</b>							
xSeries 225 / 2.4GHz/512KB Xeon DP* 2 x 256MB PC2100 ECC SDRAM	8647-3AX	IBM	1	1,269	1	\$1,269	\$689
256MB PC2100 ECC SDRAM RDIMM	33L5037	IBM	1	165	2	330	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	129	1	129	90
<b>Subtotal</b>						<b>\$2,421</b>	<b>\$779</b>
<b>Client Software</b>							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft	2	738	1	738	0
Microsoft Visual C++ Standard	254-00170	Microsoft	2	109	1	109	0
<b>Subtotal</b>						<b>\$847</b>	<b>\$0</b>
<b>User Connectivity</b>							
Cross-over Cable (7 ft.)*** (+2)	CBLC5C7		4	2	3	6	0
<b>Subtotal</b>						<b>\$6</b>	<b>\$0</b>
<b>Total</b>						<b>\$43,063</b>	<b>\$8,176</b>
<b>IBM hardware discount of 14%; prices vary if purchased separately.</b>			1			\$4,700	\$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) 1 - IBM List Price, 1-866-426-0472; 2 - Microsoft Corp.; 3 - Computer Giants; 4 - LanAdapters.com Audited by Bradley J. Askins of InfoSizing, Inc.	<b>Three-Year Cost of Ownership:</b> \$46,539  <b>tpmC Rating:</b> 18,936.05  <b>\$ / tpmC:</b> \$2.46
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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: 18,936.05 tpmC

Response Times (in seconds)	90th Percentile	Average	Maximum
New-Order	0.82	0.56	6.38
Payment	0.54	0.32	5.08
Delivery	0.41	0.21	1.03
Stock Level	4.54	2.54	6.92
Order Status	0.75	0.49	7.65
Delivery (Deferred)	1.85	1.25	4.75
Menu	0.42	0.22	1.08
<b>Response Time Delay Added for Emulated Components: 0.1 Seconds</b>			
Transaction Mix (in percent of total transactions)			Percent
New-Order			44.87
Payment			43.00
Delivery			4.06
Stock-Level			4.03
Order Status			4.04
Keying/Think Times (in seconds)	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.01 / 12.04	18.03 / 120.50
Payment	3.00 / 0.00	3.01 / 12.04	3.03 / 120.50
Delivery	2.00 / 0.00	2.01 / 5.03	2.04 / 50.50
Stock Level	2.00 / 0.00	2.01 / 5.03	2.03 / 50.50
Order Status	2.00 / 0.00	2.01 / 10.01	2.02 / 100.50
<b>Test Duration</b>			
Ramp-up time			30 minutes 15 seconds
Measurement interval			120 minutes
Number of checkpoints			4
Checkpoint interval			30 minutes
Number of transactions (all types) completed in measurement interval			5,270,282