



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

TPC-C Rev. 5.1

Report Date: Dec. 3, 2003

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$68,477</b>	<b>31,910.24 tpmC</b>	<b>\$2.15 / tpmC</b>	<b>Dec. 3, 2003</b>

Database Server	Database Manager	Operating System	Other Software	Number of Users
<b>Processors/Cores/Threads: 1/1/2 Intel Xeon 3.2GHz</b>	<b>Microsoft SQL Server 2000 Enterprise Edition</b>	<b>Microsoft Windows® Server 2003 Enterprise Edition</b>	<b>Microsoft Visual C++ Microsoft COM+</b>	<b>25,440</b>

1 RTE emulating 25,440 Users



1 x IBM xSeries 225  
2 x 2.4GHz Xeon



1 x IBM xSeries 235  
1 x 3.2GHz/1MB Xeon  
3 x Mylex AcceleRAID A352 Adapters  
1 x 36.4GB Drive



3 x EXP300 Storage  
40 x 36.4GB Drives  
2 x 73.4GB Drives

<b>System Component</b>	<b>Qty</b>	<b>Server</b>	<b>Qty</b>	<b>One Client</b>
<b>Processors/Cores/Threads</b>	<b>1/1/2</b>	<b>3.2GHz Xeon</b>	<b>2/2/4</b>	<b>2.4GHz Xeon</b>
<b>Cache</b>		<b>1MB L3 Cache</b>		<b>512KB L2 Cache</b>
<b>Memory</b>	<b>6</b>	<b>2GB ECC SDRAM DIMM</b>	<b>4</b>	<b>256MB</b>
<b>Disk Controllers</b>	<b>3</b>	<b>Mylex AcceleRAID A352 Adapter with 32MB</b>	<b>1</b>	<b>Ultra320 SCSI Interface</b>
<b>Disk Drives</b>	<b>1</b>	<b>Integrated Ultra320 SCSI</b>		
	<b>41</b>	<b>36.4GB (10000 rpm)</b>		
	<b>2</b>	<b>73.4GB (10000 rpm)</b>	<b>1</b>	<b>36.4GB (10000 rpm)</b>
<b>Total Storage</b>		<b>1525.88GB</b>		
<b>Tape Drive</b>	<b>1</b>	<b>20/40GB SCSI Tape Drive</b>		

IBM Corporation		IBM @server xSeries 235 c/s with Microsoft SQL Server 2000			TPC-C R5.1 Executive Summary		
					Report Date: Dec. 3, 2003		
Description	Part Number	Third Party Brand	Pricing	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>							
IBM eServer xSeries 235 1 x 3.2GHz Xeon Processor with 1MB L3 Cache 2 x 512MB ECC SDRAM RDIMM Integrated Dual-Channel Ultra320 SCSI	8671-G1X	IBM		1	3,179	3,179	689
2GB ECC SDRAM RDIMM	33L5040	IBM		1	2,399	14,394	
Mylex AcceleRAID A352 SCSI Adapter (incl.2 spares)	08P2420	Mylex		1	511	2,555	
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM		1	105	630	
20/40GB Internal Tape Drive	00N7991	IBM		1	699	699	
IBM Preferred Pro Full-Size Keyboard	31P7415	IBM		1	29	29	
IBM Sleek 2-Button Mouse	28L3673	IBM		1	15	15	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM		1	119	119	90
<b>Subtotal</b>						<b>21,620</b>	<b>779</b>
<b>Server Storage</b>							
IBM EXP300 Rack Storage Exp. Enclosure	35311RU	IBM		1	3,179	9,537	600
EXP300 Rack-to-Tower Conversion Kit	09N7296	IBM		1	319	957	
73.4GB 10K Ultra160 SCSI Hot-Swap Drive	32P0727	IBM		1	479	958	
36.4GB 10K Ultra320 SCSI Hot-Swap Drive	32P0726	IBM		1	275	11,275	
<b>Subtotal</b>						<b>22,727</b>	<b>600</b>
<b>Server Software</b>							
Microsoft SQL Server 2000 Enterprise Edition	810-00845	Microsoft		2	17,279	17,279	
Microsoft Windows Server 2003 Enterprise Edition	P72-00264	Microsoft		2	2,399	2,399	
Database Server Support Package - 1 Year	PRO-PROPS-16U-01	Microsoft		2	1,950		5,850
<b>Subtotal</b>						<b>19,678</b>	<b>5,850</b>
<b>Client Hardware</b>							
IBM eServer xSeries 225 1 x 2.4GHz/512KB Xeon Processor 2 x 256MB PC2100 CL2.5 DDR SDRAM RDIMM	8647-3AX	IBM		1	1,185	1,185	698
2.4GHz/512KB Xeon Processor Upgrade	59P5108	IBM		1	599	599	
256MB PC2100 ECC SDRAM RDIMM	33L5037	IBM		1	165	330	
36.4GB 10K Ultra320 SCSI Drive	32P0726	IBM		1	275	275	
NetXtreme 1000 T Dual-Port Ethernet Adapter	31P6401			1	269	807	
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM		1	119	119	90
<b>Subtotal</b>						<b>3,315</b>	<b>788</b>
<b>Client Software</b>							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft		2	738	738	
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft		2	109	109	
<b>Subtotal</b>						<b>847</b>	
<b>Connectivity</b>							
Crossover Cable (incl. 2 spares)+A13	CBLC5C7			3	2	6	
<b>Subtotal</b>						<b>6</b>	
Compsat discount 15.52%; prices vary if purchased separately.					15.52% Discount	7,397	336
<b>Total</b>						<b>68,193</b>	<b>8,017</b>
<b>Three-Year Cost of Ownership:</b>							<b>68,477</b>
Pricing: 1 - Compsat Technology; 2 - Microsoft; 3 - LanAdapters.com						<b>tpmC:</b>	31,910.24
Warranty/Service: The standard 3-year warranty has been upgraded to 24x7x4 service coverage including parts exchange.						<b>\$/tpmC:</b>	\$2.15
Audited by Francois Raab, InfoSizing, Inc.							
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

MQTh, Computed Maximum Qualified Throughput: 31,910.24 tpmC

Response Times (in seconds)	90th Percentile	Average	Maximum
New-Order	0.45	0.31	6.16
Payment	0.30	0.21	1.51
Delivery	0.21	0.13	0.64
Stock Level	2.34	1.39	4.21
Order Status	0.51	0.35	6.16
Delivery (Deferred)	0.55	0.39	1.94
Menu	0.22	0.14	0.75
<b>Response Time Delay Added for Emulated Components: 0.1 Seconds</b>			
Transaction Mix (in percent of total transactions)			Percent
New-Order			44.85
Payment			43.03
Delivery			4.04
Stock-Level			4.04
Order Status			4.03
Keying/Think Times (in seconds)	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.01 / 12.04	18.04 / 120.51
Payment	3.00 / 0.00	3.01 / 12.04	3.04 / 120.51
Delivery	2.00 / 0.00	2.01 / 5.04	2.03 / 50.51
Stock Level	2.00 / 0.00	2.01 / 5.03	2.04 / 50.50
Order Status	2.00 / 0.00	2.01 / 10.00	2.03 / 100.50
<b>Test Duration</b>			
Ramp-up time			38 minutes 23 seconds
Measurement interval			120 minutes
Number of checkpoints			4
Checkpoint interval			30 minutes
Number of transactions (all types) completed in measurement interval			8,882,406