

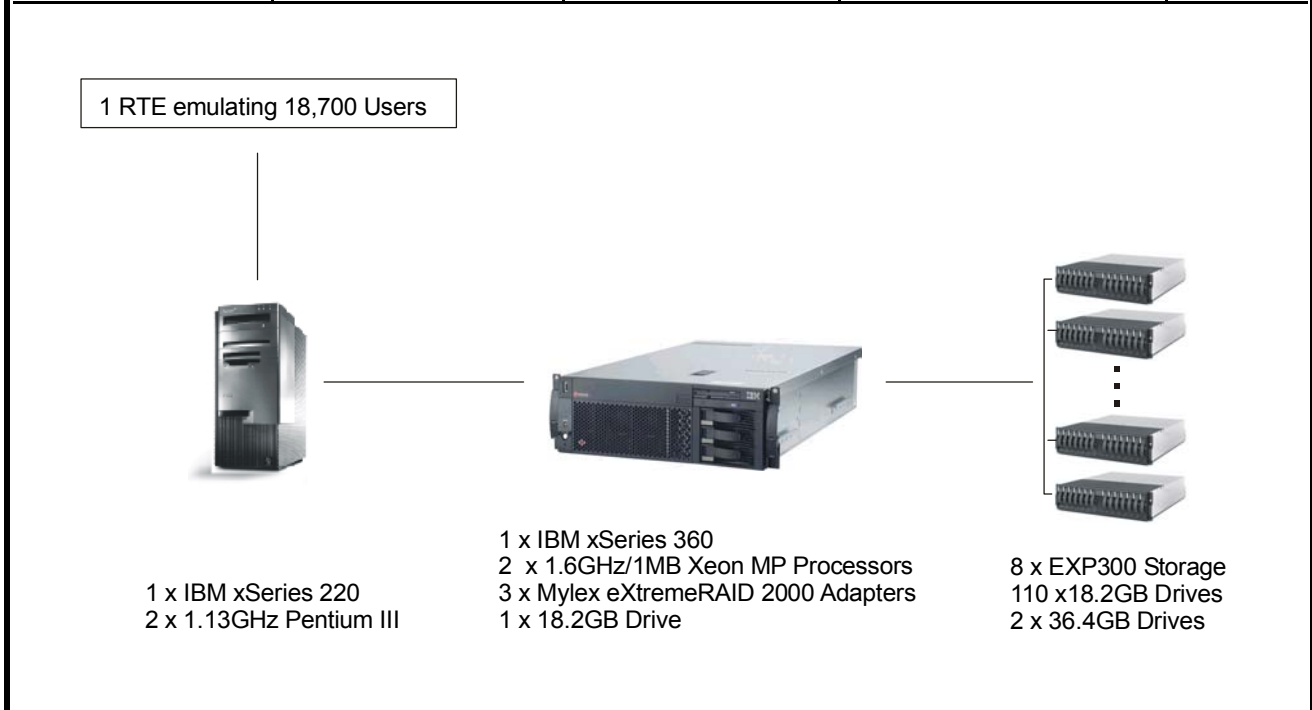
**IBM @server xSeries 360 c/s  
with Microsoft SQL Server 2000**

TPC-C Rev. 5.0

Report Date: March 11, 2002

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$101,450</b>	<b>23,027.66 tpmC</b>	<b>\$4.41 / tpmC</b>	<b>Sept. 10, 2002</b>

Processors	Database Manager	Operating System	Other Software	Number of Users
<b>2 Xeon MP 1.6GHz - Server 2 Pentium III 1.13GHz - Client</b>	<b>Microsoft® SQL Server 2000 Standard Edition</b>	<b>Microsoft Windows® 2000 Server</b>	<b>Microsoft Visual C++ 6.0 Win32 Microsoft COM+</b>	<b>18,700</b>



System Component	Qty	Server	Qty	Client
Processors	2	1.6GHz Xeon MP	2	1.13GHz Pentium III
Cache		w/1MB L3 Cache		w/512KB L2 Cache
Memory	4	512MB ECC SDRAM	2	128MB
	2	256MB ECC SDRAM	2	256MB
Disk Controllers	3	Mylex eXtremeRAID 2000 Adapter	1	Ultra160 SCSI Interface
Disk Drives	111	18.2GB (10000 rpm)	1	18.2GB Hard Disk
	2	36.4GB (10000 rpm)		
Total Storage		1879.23GB		
Tape Drive	1	20/40GB SCSI Tape Drive		

IBM Corporation	IBM @server xSeries 360 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.*	
<b>Server Hardware</b>								
IBM @server xSeries 360 Two 1.6GHz/1MB Xeon MP Processor Four 512MB ECC SDRAM RDIMMs Two 36.4GB 10K Ultra160 SCSI Drives	8686-3RX	IBM	1	\$20,999	1	\$20,999	\$1,495	
256MB ECC DDR SDRAM RDIMM	33L3281	IBM	1	285	2	570	0	
Mylex eXtremeRAID 2000 Adapter	08P3834		3	1,302	5	6,510	0	
Netfinity 4.2M Ultra2 SCSI Cable	03K9311	IBM	1	105	10	1,050	0	
IBM UPS 500	33L3477	IBM	1	99	2	198	0	
E54 14" (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	
NetBAY42 Standard Rack Cabinet	9306421	IBM	1	1,610	1	1,610	300	
<b>Storage Hardware</b>								
Netfinity EXP300 Rack Storage Enclosure*	35311RU	IBM	1	3,179	8	25,432	1,600	
18.2GB 10K Ultra160 SCSI Drive	06P5754	IBM	1	275	111	30,525	0	
<b>Subtotal</b>						<b>\$87,812</b>	<b>\$3,485</b>	
<b>Server Software</b>								
Microsoft SQL Server 2000 Standard Edition	228-01079	Microsoft	2	4,999	2	\$9,998	\$0	
Microsoft Windows 2000 Server	C11-00821	Microsoft	2	738	1	738	0	
Three-Year Maintenance for Software		Microsoft	2	2,095	3		6,285	
<b>Subtotal</b>						<b>\$10,736</b>	<b>\$6,285</b>	
<b>Client Hardware</b>								
IBM @server xSeries 220 * One 128MB 133MHz ECC SDRAM RDIMM	8646-31X	IBM	1	949	1	\$949	\$748	
1.13GHz/512KB Pentium III Processor	32P0651	IBM	1	799	1	799	0	
128MB 133MHz ECC SDRAM RDIMM	10K0018	IBM	1	109	1	109	0	
256MB 133MHz ECC SDRAM RDIMM	10K0020	IBM	1	245	2	490	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	
<b>Subtotal</b>						<b>\$2,771</b>	<b>\$838</b>	
<b>Client Software</b>								
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	
<b>Subtotal</b>						<b>\$1,287</b>	<b>\$0</b>	
<b>User Connectivity</b>								
Cross-Over Cable (7 ft.) incl. 2 spares	CBLC57		4	2	3	6	0	
<b>Subtotal</b>						<b>\$6</b>	<b>\$0</b>	
<b>Total</b>						<b>\$102,612</b>	<b>\$10,608</b>	
<b>Large volume discount of 14% on IBM Hardware; prices will vary if purchased separately.</b>			1			(11,770)	\$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.				<b>Three-Year Cost of Ownership:</b>				\$101,450
				<b>tpmC Rating:</b>				23,027.66
				<b>\$ / tpmC:</b>				\$4.41
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.								

<b>Numerical Quantities Summary</b>			
MQTh, Computed Maximum Qualified Throughput:			23,027.66 tpmC
<b>Response Times (in seconds)</b>	<b>Average</b>	<b>Maximum</b>	<b>90 %-tile</b>
New-Order	0.54	4.69	0.78
Payment	0.36	1.69	0.59
Delivery	0.30	1.12	0.52
Stock Level	2.52	5.79	3.72
Order Status	0.40	4.64	0.63
Delivery (Deferred)	0.64	2.00	0.91
Menu	0.31	1.14	0.53
<b>Transaction Mix (in percent of total transactions)</b>		<b>Total Occurrences</b>	<b>Percent</b>
New-Order		2,763,319	44.88
Payment		2,649,178	43.03
Delivery		248,843	4.04
Stock-Level		248,177	4.03
Order Status		247,717	4.02
<b>Emulation Delay (in seconds)</b>		<b>Response Time</b>	<b>Menu</b>
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
<b>Keying/Think Times (in seconds)</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>
New Order	18.01 / 12.05	18.00 / 0.00	18.08 / 120.51
Payment	3.01 / 12.05	3.00 / 0.00	3.08 / 120.51
Delivery	2.01 / 5.05	2.00 / 0.00	2.07 / 50.51
Stock Level	2.01 / 5.04	2.00 / 0.00	2.07 / 50.50
Order Status	2.01 / 10.05	2.00 / 0.00	2.05 / 100.50
<b>Test Duration</b>			
Ramp-up time			26 minutes
Measurement interval			120 minutes
Number of transactions (all types) completed in measurement interval			6,406,081
Ramp-down time			5 minutes
Number of checkpoints in measurement interval			4
Checkpoint interval			30 minutes