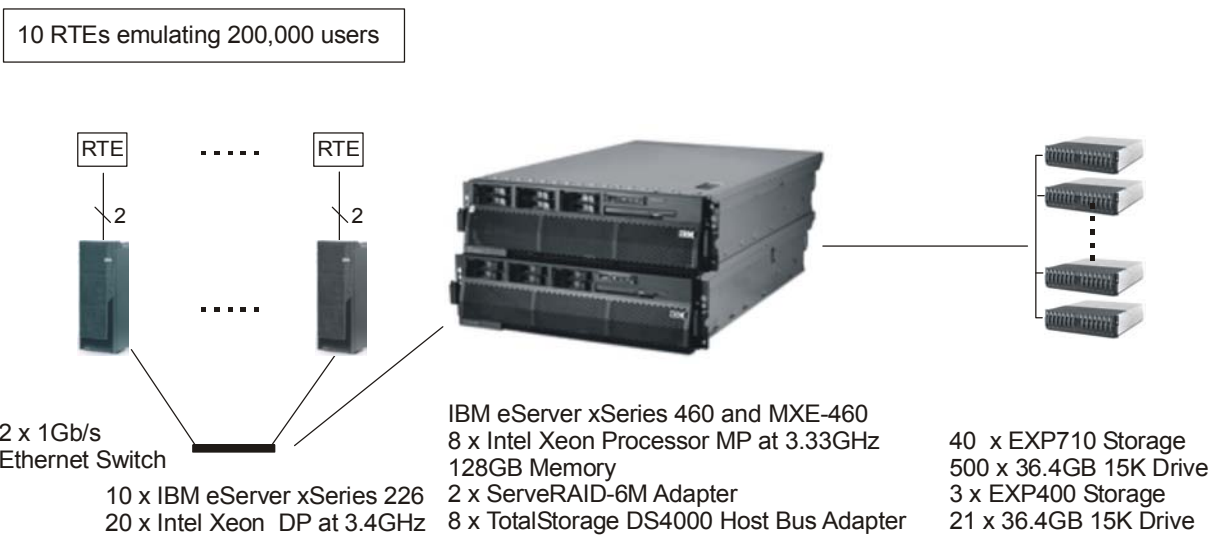


**IBM® eServer® xSeries® 460 c/s  
and  
DB2® UDB 8.2**

TPC-C Rev. 5.3

Report Date: May 31, 2005

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
<b>\$1,440,290 USD</b>	<b>250,975 tpmC</b>	<b>\$5.74 USD / tpmC</b>	<b>Nov. 30, 2005</b>	
Database Server Processors/Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
<b>8/8/16 64-Bit Intel® Xeon™ Processor MP at 3.33GHz</b>	<b>DB2 UDB 8.2</b>	<b>Microsoft Windows® Server 2003 Enterprise x64 Edition</b>	<b>Microsoft Visual C++ 6.0 Microsoft COM+</b>	<b>200,000</b>



<b>System Component</b>	<b>Qty</b>	<b>Server:</b>	<b>Qty</b>	<b>Each of Ten Clients:</b>
<b>Processors/Cores/Threads</b>	<b>8/8/16</b>	<b>Intel Xeon Processor MP at 3.33GHz/8MB L3 Cache</b>	<b>2/2/4</b>	<b>Intel Xeon DP at 3.4GHz 2MB L2 Cache</b>
<b>Cache</b>				
<b>Memory</b>	<b>32</b>	<b>4GB ECC RDIMM</b>		<b>512MB</b>
			<b>4</b>	<b>256MB</b>
<b>Disk Controllers</b>	<b>2</b>	<b>ServeRAID-6M Adapter</b>	<b>2</b>	<b>Ultra320 SCSI Interface</b>
<b>Disk Drives</b>	<b>500</b>	<b>36.4GB 2Gbps FC (15K)</b>	<b>1</b>	<b>36.4GB (15000 rpm)</b>
	<b>21</b>	<b>36.4GB Ultra320 (15K)</b>	<b>1</b>	
<b>Total Storage</b>		<b>18600GB</b>		

IBM Corporation	IBM @server xSeries 460 c/s with DB2 UDB 8.2			TPC-C Revision 5.3		
				Report Date: May 31, 2005		
Description	Part Number	Third Party Brand	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>						
xSeries 460 with 2 x 3.33GHz/8MB L3 Cache Intel Xeon Processor MP	8872-3RU	IBM	1	24,999	1	24,999
xSeries 3.33GHz/8MB L3 Cache Intel Xeon Processor MP	13N0713	IBM	1	5,699	6	34,194
MXE-460 (0 Processors, 0 Memory, 2 Memory Cards)	8874-1RU	IBM	1	6,999	1	6,999
Scalability Cable 2.3.M	13M7414	IBM	1	299	2	598
8GB (2x4GB) PC2-3200 CL3 2RX4 ECC DDR2 SDRAM RDIMM	30R5145	IBM	1	17,879	16	286,064
Active Memory™ 4-Slot Memory Expansion Card	13M7409	IBM	1	499	4	1,996
ServeRAID-6M Ultra320 SCSI Adapter	32P0033	IBM	1	999	2	1,998
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	149	1	149
IBM Preferred Pro Full-Size Keyboard PS/2	31P7415	IBM	1	29	1	29
IBM Sleek 2-Button Mouse	28L3673	IBM	1	15	1	15
ServicePac for 3-Year 24x7x4 Support (x460 and MXE-460)	96P2253	IBM	1	3,390	2	6,780
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	1	90
Discount on xSeries Hardware (15%)						53,556
Discount on ServicePacs (20%)						1,374
				<b>Subtotal</b>	<b>303,485</b>	<b>5,496</b>
<b>Server Storage</b>						
IBM TotalStorage DS4000 Host Bus Adapter	24P0960	IBM	1	1,485	8	11,880
IBM TotalStorage DS4500 Midrange Disk Subsystem	174290U	IBM	1	49,900	4	199,600
IBM DS4000 Mini Hub	19K1269	IBM	1	899	8	7,192
IBM Short Wave SFP Module	19K1271	IBM	1	499	168	83,832
IBM 1m LC-LC Fibre Channel Cable	19K1247	IBM	1	79	80	6,320
IBM 5m LC-LC Fibre Channel Cable	19K1248	IBM	1	129	8	1,032
IBM TotalStorage DS4000 EXP710 Storage Exp. Unit	1740710	IBM	1	6,000	40	240,000
2Gbps FC 36.4GB 15K Hot-Swap HDD	06P5772	IBM	1	1,115	500	557,500
IBM EXP400 Rack Storage Exp. Enclosure	17331RU	IBM	1	3,099	3	9,297
IBM 36.4GB 15K Ultra320 SCSI Drive	90P1318	IBM	1	349	21	7,329
2M SCSI cable	03K9310	IBM	1	75	3	225
IBM UPS 750TLV	21301TX	IBM	1	299	1	299
IBM S2 42U Standard Rack	93074SX	IBM	1	1,489	5	7,445
ServicePac for 3-Year 24x7x4 Support (EXP710)	41L2768	IBM	1	760	34	25,840
ServicePac for 3-Year 24x7x4 Support (DS4500)	96P2062	IBM	1	1,087	5	5,435
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	IBM	1	300	5	1,500
Discount on Fibre Channel Disks (30%)						167,250
Discount on Fibre Channel Storage (20%)						109,971
Discount on xSeries Storage (15%)						3,689
Discount on ServicePacs (20%)						6,555
				<b>Subtotal</b>	<b>851,041</b>	<b>26,220</b>
<b>Server Software</b>						
DB2 UDB ESE 8.2 for Windows Operating Systems on 64-Bit Extended Systems - SW License and Maintenance 12 Months		IBM	2	22,608	8	180,864
SW Maintenance Renewal - 1 Year		IBM	2	1,077	16	17,232
Microsoft Windows Server 2003 Enterprise x64 Edition*	P72-00264	Microsoft	3	2,334	1	2,334
Microsoft Problem Resolution Services		Microsoft	3	245	1	245
				<b>Subtotal</b>	<b>183,198</b>	<b>17,477</b>
<b>Client Hardware</b>						
x226 with 3.4GHz/2MB Xeon DP, 512MB (2x256MB) Memory	8648-6AU	IBM	1	1,939	10	19,390
3.4GHz/2MB Xeon DP Processor Upgrade	13N0674	IBM	1	1,049	10	10,490
1GB (2x512MB) PC-3200 DDR2 ECC SDRAM RDIMM	73P3522	IBM	1	399	20	7,980
36.4GB 10K Ultra320 SCSI Drive	90P1304	IBM	1	329	10	3,290
PRO/1000 MT Dual-Port Server Adapter	73P2701	Intel	1	249	10	2,490
E54 15" (13.8" Viewable) Color Monitor	633147N	IBM	1	149	10	1,490
ServicePac for 3-Year 24x7x4 Support (x226)	96P2250	IBM	1	750	10	7,500
ServicePac for 3-Year 24x7x4 Support (Monitor)	30L9183	IBM	1	90	10	900
Discount on xSeries Hardware (15%)						6,770
Discount on ServicePacs (20%)						1,680
				<b>Subtotal</b>	<b>38,361</b>	<b>6,720</b>
<b>Client Software</b>						
Microsoft Windows 2000 Server with COM+*	C11-00821	Microsoft	3	738	10	7,380
Microsoft Visual C++ Professional 6.0	254-00170	Microsoft	3	109	1	109
				<b>Subtotal</b>	<b>7,489</b>	
<b>Network Components</b>						
DLink Gigabit Ethernet Switch (2 spares)			4	189	4	756
Ethernet Cable 14 Ft. (2 spares)			4	4	12	48
				<b>Subtotal</b>	<b>804</b>	
Discounts based on volume purchase; prices vary if purchased separately.						
				<b>Total</b>	<b>1,384,377</b>	<b>55,913</b>
For Pricing and Ordering Information: 1- IBM (1-888-SHOP-IBM, Keycode 7764) 2 - IBM DB2: Bernard Spang, Dir. Database Marketing Management, spang@us.ibm.com, 914-766-1491. 3 - Microsoft (*See Quote for Discounts); 4 - newegg.com Audited by Francois Raab, InfoSizing, Inc				<b>Three-Year Cost of Ownership USD:</b> \$1,440,290 <b>tpmC:</b> 250,975 <b>\$ USD/tpmC:</b> \$5.74		
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.						

<b>Numerical Quantities Summary</b>			
MQTh, Computed Maximum Qualified Throughput: <b>250,975 tpmC</b>			
<b>Response Times (in seconds)</b>	<b>90th Percentile</b>	<b>Average</b>	<b>Maximum</b>
New-Order	0.34	0.21	1.80
Payment	0.40	0.32	3.34
Delivery	0.30	0.30	1.52
Stock Level	0.42	0.33	2.05
Order Status	0.42	0.24	1.94
Delivery (Deferred)	0.48	0.30	2.78
Menu	0.29	0.21	1.59
Response Time Delay Added for Emulated Components: 0.1 Seconds			
<b>Transaction Mix (in percent of total transactions)</b>			<b>Percent</b>
New-Order			44.96
Payment			43.02
Delivery			4.01
Stock-Level			4.01
Order Status			4.01
<b>Keying/Think Times (in seconds)</b>	<b>Minimum</b>	<b>Average</b>	<b>Maximum</b>
New Order	18.00 / 0.00	18.00 / 12.04	18.03 / 120.33
Payment	3.00 / 0.00	3.00 / 12.04	3.02 / 120.33
Delivery	2.00 / 0.00	2.00 / 5.03	2.02 / 50.31
Stock Level	2.00 / 0.00	2.00 / 5.04	2.02 / 50.31
Order Status	2.00 / 0.00	2.00 / 10.04	2.02 / 100.33
<b>Test Duration</b>			
Ramp-up time			57 minutes 40 seconds
Measurement interval			120 minutes
Number of checkpoints			NA
Checkpoint interval			NA
Number of transactions (all types) completed in measurement interval			66,992,300