



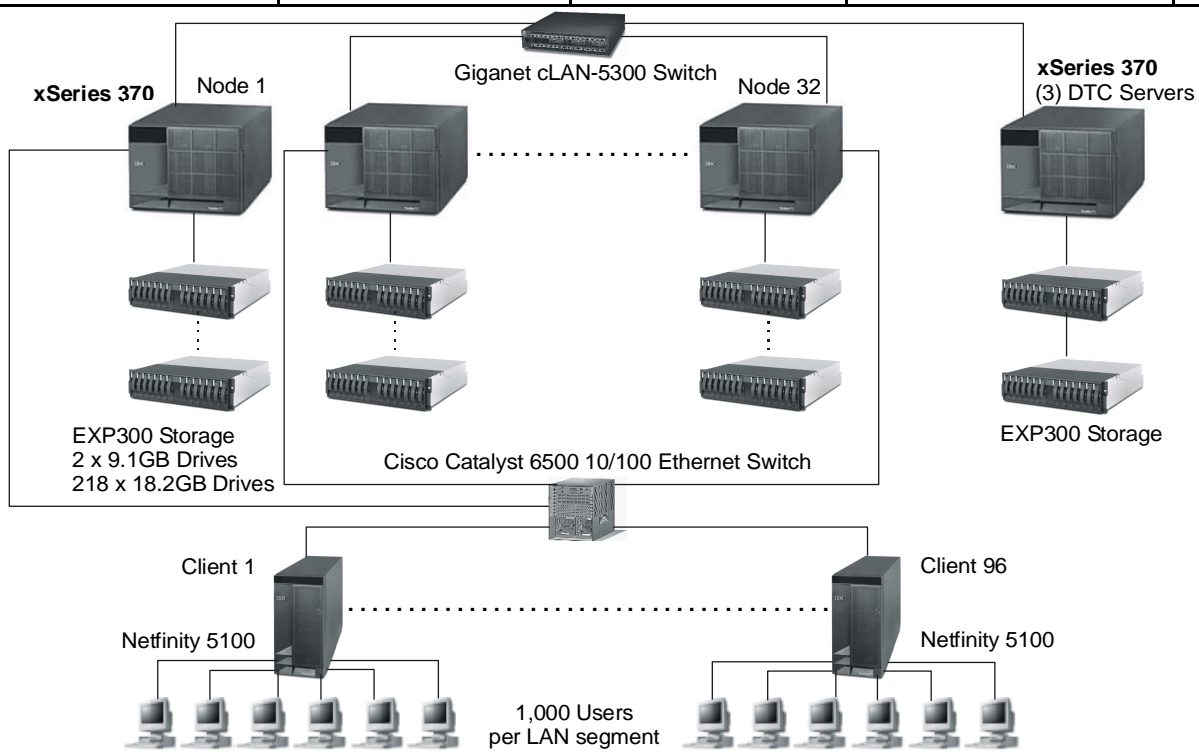
**IBM @server xSeries 370  
with SQL Server 2000**

TPC-C Rev. 3.5

Report Date: Mar. 23, 2001  
(Amended April 6, 2001)

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$19,884,668</b>	<b>688,220.90 tpmC</b>	<b>\$28.89/tpmC</b>	<b>May 31, 2001</b>

Processor	Database Manager	Operating System	Other Software	# Users
<b>Database Servers = 256</b> <b>DTC Servers = 24</b> <b>Intel<sup>(R)</sup> Pentium<sup>(R)</sup> III</b> <b>Xeon<sup>TM</sup> 900MHz</b> <b>2MB L2 Cache</b>	<b>Microsoft<sup>(R)</sup> SQL</b> <b>Server 2000</b>	<b>Microsoft</b> <b>Windows<sup>(R)</sup> 2000</b> <b>Datacenter Server</b>	<b>Microsoft COM+</b> <b>Microsoft Visual C++</b> <b>6.0</b>	<b>576,000</b>



<b>System Component</b>	<b>Qty</b>	<b>Each of 32 Database Servers:</b>	<b>Qty</b>	<b>Each of 96 Clients:</b>
Processors	8	900MHz Pentium III Xeon	2	733MHz Pentium III
Cache		w/2MB L2 Cache		w/256KB L2 Cache
Memory	32	512MB ECC SDRAM	4	128MB
Disk Controllers	8	ServeRAID-4H Ultra160 SCSI Adapter	1	Ultra160 SCSI Onboard
Disk Drives	218	9.1GB (10000 rpm) 18.2GB (10000 rpm)	1	9.1GB Hard Disk
Total Storage		116TB (57.99TB online)	8	Each of 3 DTC Servers:
Other			4	900MHz/2MB Pentium III Xeon
Tape Drive	1	3502-R14 DLT Tape Library	1	128MB ECC SDRAM
Interconnect	1	Giganet cLAN-1000 Host Adapter	6	ServeRAID-4H Ultra160 SCSI Adapter
	2	Giganet cLAN-5300 Switch	1	9.1GB (10000 rpm) drive
				Giganet cLAN-1000 Host Adapter



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Microsoft SQL Server 2000

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Description	Order Number	Third-Party Brand	Third-Party Pricing	Unit Price	Qty	Ext. Price	5-Yr. Maint.*
<b>Server Hardware</b>							
xSeries 370 900MHz/2MB Pentium III Xeon*	8681-3RX	IBM	1	\$19,114	35	\$668,990	\$373,975
900MHz/2MB L2 Cache Processor Upgrade	19K4637	IBM	1	6,599	245	1,616,755	0
8500R Memory Expansion Card	28L4454	IBM	1	625	32	20,000	0
8500 >4X Accelerator Filter	10K2335	IBM	1	1,249	35	43,715	0
512MB ECC SDRAM RDIMM Memory Kit	20L0249	IBM	1	1,575	1,024	1,612,800	0
ServeRAID-4H Ultra160 SCSI Adapter	37L6889	IBM	1	2,439	259	631,701	0
Ultra2 SCSI 4m Cable	03K9311	IBM	1	105	739	77,595	0
10/100 Ethernet Server Adapter with IPsec	06P3601	IBM	1	99	32	3,168	0
E54 15" (13.8" Viewable) Color Monitor*	6331N2N	IBM	1	173	35	6,055	9,800
3502-R14 DLT Tape Autoloader*	3502R14	IBM	1	13,779	1	13,779	3,844
IBM Smart-UPS Model 5000RMB	37L6861	IBM	1	3,299	32	105,568	0
Netfinity Rack*	9306900	IBM	1	1,725	79	136,275	103,332
Side Panel Kit	94G6669	IBM	1	195	12	2,340	0
Hardware installation and prep fees		IBM	1			238,475	0
Giganet cLAN-1000 Host Adapter (incl. 10%)	cLAN-1000	Giganet	4	795	39	31,005	75,000
Giganet cLAN5300 30-Port Switch (incl. 10%)	cLAN5300	Giganet	4	15,995	4	63,980	incl. above
Giganet cLAN-A1011 10M Cable (incl. 10%)	cLAN-A1011	Giganet	4	135	39	5,265	incl. above
<b>Storage Hardware</b>							
Netfinity EXP300 Rack Storage Enclosure*	35311RU	IBM	1	3,179	706	2,244,374	554,916
9.1GB 10K Ultra160 SCSI Drive	37L7204	IBM	1	299	82	24,518	0
18.2GB 10K Ultra160 SCSI Drive	37L7205	IBM	1	467	6,976	3,257,792	0
<b>Subtotal</b>						<b>\$10,804,150</b>	<b>\$1,120,867</b>
<b>Server Software</b>							
Datacenter OS Preload Kit/Ship Group/Warr.	22P4745	IBM	1			\$2,760,000	0
Microsoft SQL Server 2000	11K7641	Microsoft	2	15,802	256	4,045,312	0
Microsoft Windows 2000 Advanced Server	C10-00475	Microsoft	2	2,399	3	7,197	0
5-Year Maintenance for Software		Microsoft	2	2,095	160		\$335,200
<b>Subtotal</b>						<b>\$6,812,509</b>	<b>\$335,200</b>
<b>Client Hardware</b>							
Netfinity 5100 / 733MHz/256KB Pentium III*	8658-2RY	IBM	1	2,052	96	\$196,992	\$566,880
733MHz/256KB Pentium III Upgrade	00N7943	IBM	1	399	96	38,304	0
128MB DIMMs	33L3123	IBM	1	185	288	53,280	0
9.1GB 10K Ultra160 SCSI Drive	37L7204	IBM	1	299	96	28,704	0
Intel Pro/100+ Dual-Port Ethernet Adapter**	8472	Intel	1	219	288	63,072	0
E54 15" (13.8" Viewable) Color Monitor*	6331N2N	IBM	1	173	96	16,608	26,880
<b>Subtotal</b>						<b>\$396,960</b>	<b>\$593,760</b>
<b>Client Software</b>							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft	2	738	96	70,848	incl. above
Microsoft Visual C++ Professional 6.0	048-00317	Microsoft	2	549	1	549	incl. above
<b>Subtotal</b>						<b>\$71,397</b>	<b>\$0</b>
<b>User Connectivity</b>							
8-Port 10/100Mbps Hub** (10% spares***)	DEH2924	Generic	3	23	79,200	\$1,821,600	\$0
Cisco Catalyst 6500 48-Port 10/100 RJ-45	WSX6248RJ45	Cisco	5	55,399	1	55,399	52,500
<b>Subtotal</b>						<b>\$1,876,999</b>	<b>\$52,500</b>
<b>Total</b>						<b>\$19,962,015</b>	<b>\$2,102,327</b>
<b>Discount</b>						<b>(2,179,674)</b>	
<b>Grand Total</b>						<b>\$17,782,341</b>	<b>\$2,102,327</b>

Large volume discount; prices will vary if purchase individually.

Notes: \* The standard 3-year warranty and the extended warranty on IBM hardware is for 7x24, 4-hour response. \*\* 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; 2 - Microsoft; 3 - Software House International; 4 - Giganet; 5 - Cisco

Audited by Brad Askins of InfoSizing, Inc.

**Five-Year Cost of Ownership:** \$19,884,668

**tpmC Rating:** 688,220.90

**\$/ tpmC:** \$28.89

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: % throughput difference, reported and reproducibility runs:			688,220.90 tpmC 0.1108 %
<b>Response Times (in seconds)</b>	<b>90%</b>	<b>Average</b>	<b>Maximum</b>
New-Order	1.79	1.03	438.85
Payment	2.58	1.16	147.16
Delivery (Interactive)	1.01	0.44	68.32
Stock-Level	1.38	0.75	168.62
Order Status	1.12	0.54	31.68
Delivery (Deferred)	0.43	0.32	6.17
Menu	1.03	0.45	525.33
<b>Transaction Mix (in percent of total transactions)</b>		<b>Total Occurrences</b>	<b>Percent</b>
New-Order		13,764,418	44.84
Payment		13,219,779	43.06
Delivery		1,239,025	4.04
Stock Level		1,237,686	4.03
Order Status		1,239,034	4.04
<b>Emulation Delay (in seconds)</b>		<b>Response Time</b>	<b>Menu</b>
New-Order		0.1	0.1
Payment		0.1	0.1
Order-Status		0.1	0.1
Delivery		0.1	0.1
Stock-Level		0.1	0.1
<b>Keying/Think Times (in seconds)</b>	<b>Minimum</b>	<b>Average</b>	<b>Maximum</b>
New-Order	18.00 / 0.00	18.01 / 12.05	18.14 / 120.61
Payment	3.00 / 0.00	3.01 / 12.04	3.13 / 120.60
Delivery	2.00 / 0.00	2.01 / 5.05	2.13 / 50.50
Stock Level	2.00 / 0.00	2.01 / 5.05	2.14 / 50.50
Order Status	2.00 / 0.00	2.01 / 10.04	2.13 / 100.50
<b>Test Duration</b>			
Ramp-up time			29 minutes 25 seconds
Measurement interval			20 minutes
Number of transactions (all types) completed in measurement interval			31,801,244
Ramp-down time			4 minutes 15 seconds
Number of checkpoints in measurement interval			1
Checkpoint interval			20 minutes