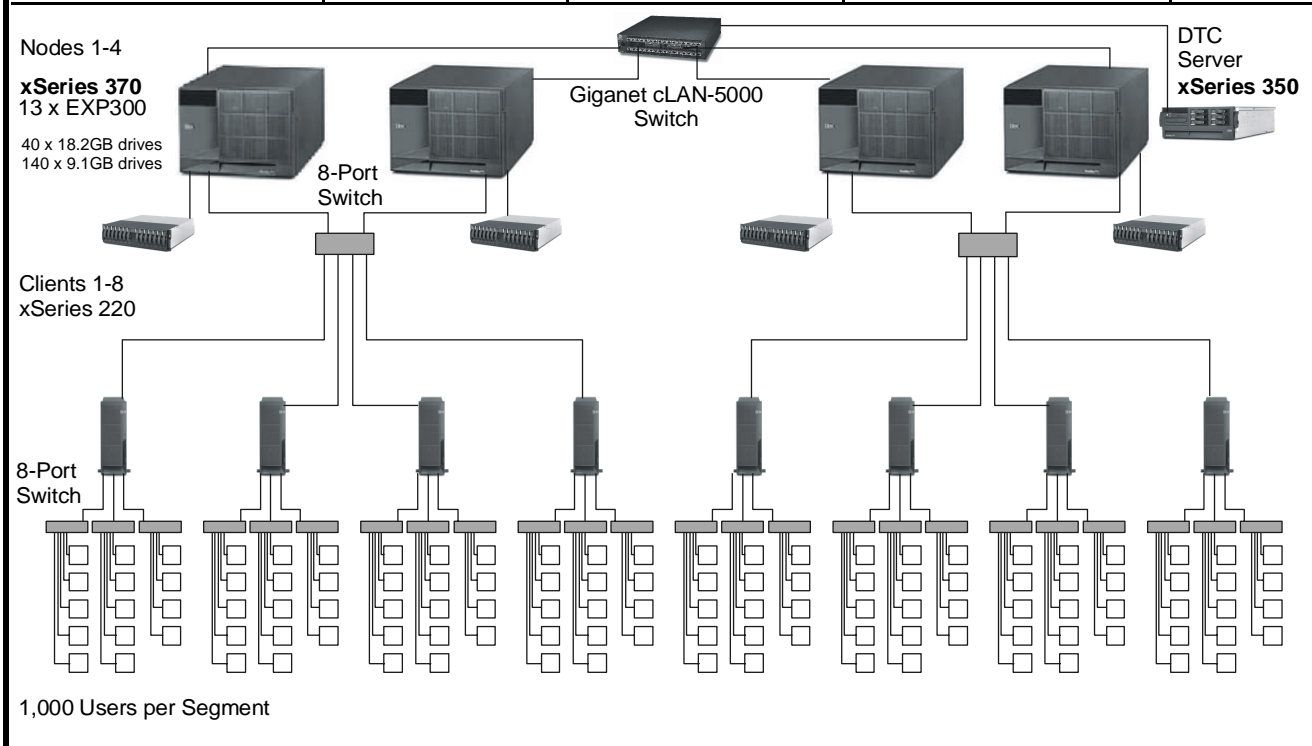




**IBM @server xSeries 370
with
Microsoft SQL Server 2000**

**TPC-C Rev. 5.0
Upgrade from Rev. 3.5**
Report Date: April 24, 2001
Original: April 20, 2001

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	
\$2,315,801	136,766.67 tpmC	\$16.93 / tpmC	Sept. 20, 2001	
Processors	Database Manager	Operating System	Other Software	Number of Users
Database Servers = 32 Pentium III Xeon 900MHz/2MB DTC Server = 4 Pentium III Xeon 700MHz/2MB	Microsoft^(R) SQL Server 2000	Microsoft Windows^(R) 2000 Datacenter Server	Microsoft COM+ Microsoft Visual C++ 6.0	112,000



System Component	Qty	Each of 4 Database Servers	Qty	Each of 8 xSeries 220 Clients:
Processors	8	900MHz Pentium III Xeon	2	933MHz Pentium III
Cache		w/2MB L2 Cache		w/256KB L2 Cache
Memory	32	1GB ECC SDRAM	4	128MB
Disk Controllers	6	Mylex eXtremeRAID 2000	1	Ultra160 SCSI Onboard
	1	ServeRAID-4H Ultra160 SCSI Adapter	1	9.1GB (10000 rpm)
Disk Drives	140	9.1GB (15000 rpm)		One DTC Server:
	40	18.2GB (15000 rpm)	4	700MHz/2MB Pentium III Xeon
	2	9.1GB (10000 rpm)	4	128MB ECC SDRAM
Total Storage	1	6.952TB (6.91TB online)	1	ServeRAID-4H Ultra160 SCSI Adapter
Other				Adapter
Tape Drive	1	3502-R14 DLT Tape Library	6	9.1GB (10000 rpm)
	1	Giganet cLAN-1000 Host Adapter	1	Giganet cLAN-1000 Host Adapter
Interconnect	1	Giganet cLAN-5000 Switch		



**@server xSeries 370 c/s
with
Microsoft SQL Server 2000**

**TPC-C Rev. 5.0
Upgrade from Rev. 3.5**

Report Date: April 24, 2001
Original: April 20, 2001

Description	Order Number	Third-Party Brand	Pricing	Unit Price	Qty	Ext. Price	3-Yr. Maint.*
Server Hardware							
xSeries 370 900MHz/2MB Pentium III Xeon*	8681-3RX	IBM	1	\$19,114	4	\$76,456	\$9,980
900MHz/2MB L2 Cache Processor Upgrade	19K4637	IBM	1	6,599	28	184,772	0
8500R Memory Expansion Card	28L4454	IBM	1	625	4	2,500	0
8500 >4X Accelerator Filter	10K2335	IBM	1	1,249	4	4,996	0
1GB SDRAM RDIMM Memory Kit	33L3056	IBM	1	2,596	128	332,288	0
xSeries 350 700MHz/2MB Pentium III Xeon*	8682-5RY	IBM	1	7,165	1	7,165	1,495
700MHz/2MB L2 Cache Processor Upgrade	00N7944	IBM	1	3,625	3	10,875	0
9.1GB 10K Ultra160 SCSI Drive	37L7204	IBM	1	299	14	4,186	0
ServeRAID-4H Ultra160 SCSI Adapter	37L6889	IBM	1	2,439	5	12,195	0
Mylex eXtremeRAID 2000 Adapter (incl. 10%)	E2000-4-32NB	Mylex	4	1,872	27	50,544	0
Ultra2 SCSI 4m Cable	03K9311	IBM	1	105	104	10,920	0
10/100 Ethernet Server Adapter with IPsec	06P3601	IBM	1	99	4	396	0
E54 15" (13.8" Viewable) Color Monitor*	6331N2N	IBM	1	173	5	865	450
3502-R14 DLT Tape Autoloader*	3502R14	IBM	1	13,779	1	13,779	1,450
IBM Smart-UPS Model 5000RMB	37L6861	IBM	1	3,299	4	13,196	0
Netfinity Rack*	9306900	IBM	1	1,725	6	10,350	1,800
Side Panel Kit	94G6669	IBM	1	195	1	195	0
Hardware installation and prep fees		IBM	1			21,180	0
Giganet cLAN-1000 Host Adapter (incl. 10%)	cLAN-1000	Giganet	3	795	7	5,565	45,000
Giganet cLAN-5000 8-Port Switch (incl. 10%)	cLAN-5000	Giganet	3	6,250	3	18,750	incl. above
Giganet cLAN-A1011 10M Cable (incl. 10%)	cLAN-A1011	Giganet	3	135	7	945	incl. above
Storage Hardware							
Netfinity EXP300 Rack Storage Enclosure*	35311RU	IBM	1	3,179	52	165,308	10,400
9.1GB 15K Ultra160 SCSI Drive	19K0655	IBM	1	601	560	336,560	0
18.2GB 15K Ultra160 SCSI Drive	19K0656	IBM	1	789	160	126,240	0
Subtotal						\$1,410,226	\$70,575
Server Software							
Datacenter OS Preload Kit/Ship Group/Warr.	22P4745	IBM	1			\$442,800	0
Microsoft SQL Server 2000	11K7641	Microsoft	2	16,541	32	539,312	0
Microsoft Windows 2000 Advanced Server	C10-00475	Microsoft	2	2,399	1	2,399	incl. below
3-Year Maintenance for Software		Microsoft	2	2,095	12		\$25,140
Subtotal						\$974,511	\$25,140
Client Hardware							
xSeries 220 / 933MHz/256KB Pentium III*	8645-41X	IBM	1	1,593	8	12,744	5,984
933MHz/256KB Pentium III Upgrade	10K3819	IBM	1	999	8	7,992	0
256MB ECC SDRAM RDIMM	33L3144	IBM	1	365	16	5,840	0
9.1GB 10K Ultra160 SCSI Drive	37L7204	IBM	1	299	8	2,392	0
Intel Pro/100+ Dual-Port Ethernet Adapter**	8472	Intel	1	219	16	3,504	0
E54 15" (13.8" Viewable) Color Monitor*	6331N2N	IBM	1	173	8	1,384	720
Subtotal						\$33,856	\$6,704
Client Software							
Microsoft Windows 2000 Server with COM+	C11-00821	Microsoft	2	738	8	5,904	incl. above
Microsoft Visual C++ Professional 6.0	048-00317	Microsoft	2	549	1	549	incl. above
Subtotal						\$6,453	\$0
User Connectivity							
8-Port 10/100 Nway Fast Ethernet Switch (+2)	NX-DSS8		5	25	4	100	0
Subtotal						\$100	\$0
Total						\$2,425,146	\$102,419
Discount						(211,764)	\$0
Grand Total						\$2,213,382	\$102,419

Notes: * The standard 3-year warranty on IBM hardware has been upgraded to 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 - Giganet; 4 - Mylex; 5 - Software House International

Audited by Brad Askins of InfoSizing, Inc.

Three-Year Cost of Ownership: \$2,315,801
tpmC Rating: 136,766.67
\$/tpmC: \$16.93

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: % throughput difference, reported and reproducibility runs:			136,766.67 tpmC .12 %
Response Times (in seconds)	90%	Average	Maximum
New-Order	1.12	0.63	19.16
Payment	1.22	0.68	20.01
Delivery (Interactive)	0.85	0.36	1.87
Stock-Level	0.98	0.48	2.44
Order Status	0.90	0.41	3.30
Delivery (Deferred)	0.27	0.20	0.78
Menu	0.86	0.37	3.47
Transaction Mix (in percent of total transactions)		Total Occurrences	Percent
New-Order		4,103,000	44.81
Payment		3,940,308	43.03
Delivery		370,994	4.05
Stock Level		371,032	4.05
Order Status		370,721	4.05
Emulation Delay (in seconds)	Response Time		Menu
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
Keying/Think Times (in seconds)	Minimum	Average	Maximum
New-Order	18.00 / 0.00	18.01 / 12.05	18.06 / 120.53
Payment	3.00 / 0.00	3.01 / 12.06	3.07 / 120.51
Delivery	2.00 / 0.00	2.01 / 5.06	2.05 / 50.51
Stock Level	2.00 / 0.00	2.01 / 5.07	2.05 / 50.50
Order Status	2.00 / 0.00	2.01 / 10.06	2.06 / 100.50
Test Duration			
Ramp-up time			35 minutes 38 seconds
Measurement interval			30 minutes
Number of transactions (all types) completed in measurement interval			9,527,120
Ramp-down time			37 minutes 52 seconds
Number of checkpoints in measurement interval			1
Checkpoint interval			30 minutes