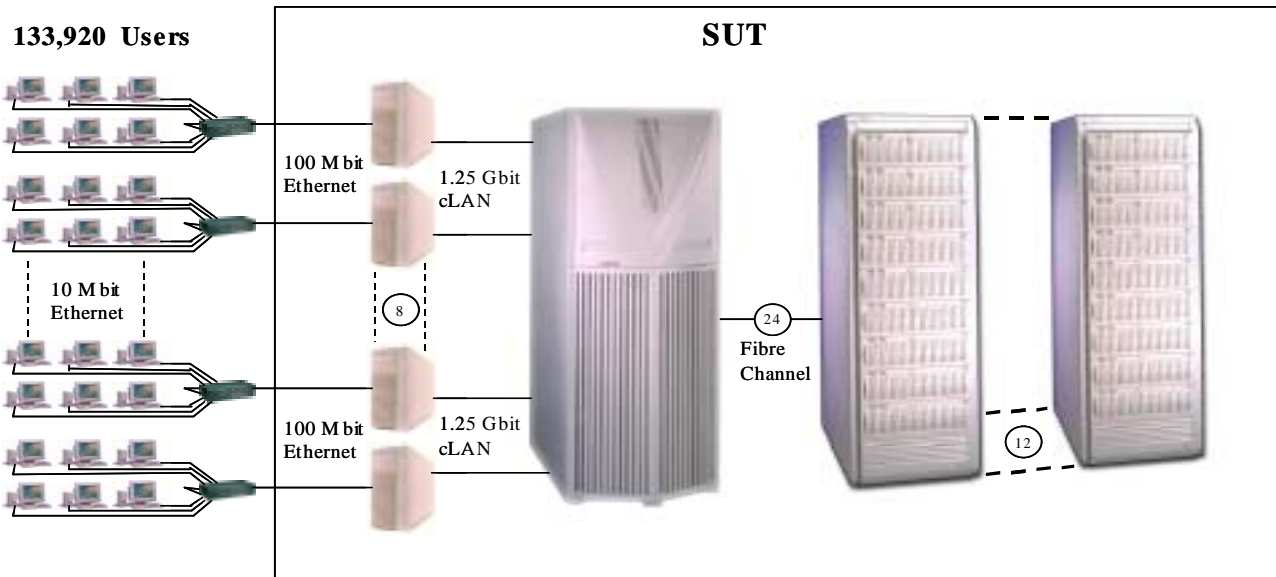


UNISYS		e-@ction Enterprise Server ES7000		TPC-C Rev. 5.0	
				Report Date November 11, 2001	
Total System Cost		TPC-C Throughput		Price Performance	
\$3,524,109		165,218.71 tpmC		\$21.33 / tpmC	
				Availability Date	
				March 10, 2002	
Processors		Database Manager		Operating System	
32 - Database 16 - Clients		Microsoft SQL Server 2000 Enterprise Edition		Microsoft Windows Datacenter Server Limited Edition	
				Other Software	
				Windows 2000 Server w/ IIS 5.0 and COM+ Microsoft Visual C++	
				Number of Users	
				133,920	



Clients (each of 8)
e-@ction ES2024
 2 x 1GHz Pentium® III
 w/ 256KB L2 cache,
 1 GB memory,
 1 x 18GB internal disk,
 1 Inbuilt 10/100Mb
 Ethernet controller,
 1 x PCI cLAN controller

Enterprise Server
e-@ction ES7000
 32 x Pentium® III Xeon
 900MHz 2MB L2 cache,
 64 GB memory,
 1 PCI SCSI controller,
 2 x 18GB internal SCSI disks,
 24 x PCI Fibre Channel controllers,
 8 x PCI cLAN controllers

Storage
ESM7900
 942 x 18GB + 26 x 36GB
 Hot-Pluggable
 External Fibre Channel disks
 24 x FC RAID controllers

System Components	Enterprise Server		Clients (each of 8)	
	Quantity	Type	Quantity	Type
Processors	32	900MHz Pentium® III Xeon with 2MB Level 2 Cache	2	1GHz Pentium® III with 256KB Level 2 Cache
Memory	1	64 GB	1	1 GB
Disk Controllers	24 1	PCI Fibre Channel PCI SCSI	1	Inbuilt SCSI
Disk Drives	942 26 2	18GB FC (16.4 GB useable) 36GB FC (32.7 GB useable) 18GB SCSI (17.0 GB useable)	1	18GB SCSI (16.9 GB useable)
Total Storage		15.5 TB		16.9 GB
Tape / CD-ROM	1	SCSI CD-ROM	1	IDE CD-ROM
Terminals	1	Console Monitor	1	Console Monitor



e-@ction Enterprise Server ES7000

TPC-C Rev. 5.0

Report Date
November 11, 2001

Description	Part No.	Third Party		Unit Price	Qty.	Extended Price	3 yr.Maint. Price
		Brand	Price				
Server Hardware:							
SYS: ES7000, 2 Domain, 32P, 8 GB, 2 MSUs, 2 DIBs	ES73251-GDN		3	\$521,333	1	\$521,333	\$56,340
MEM: 16GB, 1 GB DIMMs	RAM7-16G		1	\$81,600	3	\$244,800	
MEM: 8GB, 1 GB DIMMs	RAM7-8GB		1	\$43,520	1	\$43,520	
BRD: Memory Carrier Board, 0 Mem.	MSU2000-MBD		1	\$10,880	2	\$21,760	
IO: Module, PCI Enclosure w/ BID Motherboard	PCI2053-12		1	\$2,992	6	\$17,952	
IO: Module, PCI Enclosure 3.3V, 4 Card	PCI3-MOD		1	\$363	20	\$7,260	
CTRL: Fibre Channel HBA, 2-Port, 64-bit PCI	PCI6220-SW		1	\$2,063	24	\$49,512	
CTRL: cLAN, PCI Host Adapter & Cable	PCI10001-CXG		1	\$586	8	\$4,688	
CTRL: 2Ch SCSI, U160, PCI	PCI7602-P64		1	\$442	1	\$442	
DISK: 18GB, 10K SCSI LVD, SCA	HDM18110-CX1		1	\$568	2	\$1,136	
I/F: Monitor, 15-inch Color, Kybrd, Mse & Cable	ES70001-UIF		1	\$340	1	\$340	
Server Software:							
SYS MGT: ES7000 Value Add Software	ESS700030-N		3	\$4,533	1	\$4,533	\$3,564
O/S: Microsoft Windows Datacenter Server Lmted Edtn	LED320032-EN	2	3	\$90,667	1	\$90,667	\$71,388
O/S: Windows Datacenter Annual Update, 1-32P	WM320032-EN	2	1	\$26,293	2	\$52,586	\$52,586
APP: SQL Server 2000 Entrprs Edtn, per Proc. Lcnsng	810-00846	2	2	\$16,541	32	\$529,312	\$6,285
				Server Subtotal		\$1,537,255	\$190,163
Storage Hardware:							
DISK: 18GB Drive, 15K FC, SCA	ESM18304-F94		1	\$853	942	\$803,526	Spared
DISK: 18GB Drive, 15K FC, SCA 10% spares*	ESM18304-F94		1	\$853	95	\$81,035	\$81,035
DISK: 36GB Drive, 10K FC, SCA	ESM36202-F94		1	\$928	26	\$24,128	Spared
DISK: 36GB Drive, 10K FC, SCA 10% spares*	ESM36202-F94		1	\$928	3	\$2,784	\$2,784
DAE: Expansion Enclsr, w/ 0 Disk	ESM7200-DAE		3	\$4,087	94	\$384,178	\$81,216
DPE: 2 RAID Cntrl, 1GB Cache ea., 0 Disk	ESM7900-DPE		3	\$44,200	12	\$530,400	\$111,456
SYS MGT: Storage Agent, Monitor, Call Home & ATF	ESM7700-W2K		3	\$1,661	1	\$1,661	\$864
CBL: FC, 50um Dupx, SC->SC Conn's, 10m	CBL144-10		1	\$206	24	\$4,944	
PWR: Distribution Strip, 220V	SFR9-PWR		1	\$295	24	\$7,080	
CBL: Power, U.S. (Domestic), L6-20P	USE1936-LC6		1	\$56	24	\$1,344	
CAB: 36U x 19" x 34" Cabinet, e-@ction	RM361934-OFE		1	\$810	12	\$9,720	
DOOR: 36U x 19", Rear	RM3619-RDR		1	\$277	12	\$3,324	
PNL: 36U x 34" Side Skins, L&R	RM3634-SDS		1	\$221	12	\$2,652	
				Storage Subtotal		\$1,772,957	\$277,355
Client Hardware:							
SYS: ES2024 Tower, w/ 0 Proc., 0MB Mem	ES202141-GZN		1	\$1,547	8	\$12,376	
PROC:1x1GHz Pentium III/256KB Cache	CPU31000-256		1	\$884	16	\$14,144	
ACC: Voltage Regulator	VRM3-83		1	\$29	8	\$232	
MEM: 512 MB SDRAM PC133ECC Memory	DIM13368-512		1	\$681	16	\$10,896	
DISK: 18GB SCSI 3.5 Internal	ES2024-18G		1	\$553	8	\$4,424	
CTRL: cLAN, PCI Host Adapter & Cable	PCI10001-CXG		1	\$586	8	\$4,688	
MAINT: 3 Yr. Cmprhnsv-Gold Svc Warranty Upgrade	WI2003-CGS		1	\$1,326	8	\$10,608	\$10,608
MONITOR:15-inch Color	EVG2100-P		1	\$221	8	\$1,768	
Client Software:							
O/S: Microsoft Windows 2000 Server	C11-00821	2	2	\$738	8	\$5,904	Inc. above
ACC: Microsoft Visual C++ Professional 6.0	048-00317	2	2	\$549	1	\$549	Inc. above
				Client Subtotal		\$54,981	\$10,608
				Total		\$3,365,193	\$478,126
Comark and Unisys Pre-Pay Discounts						(\$300,273)	(\$18,937)

Notes:

1. 3rd Party Brand and Pricing: 1 = Comark, 2 = Microsoft, 3 = Comark Product Price, Unisys Maintenance Price
2. HW & SW maintenance figured at 24 x 7 w/ 4 hr. max. response time for spares.
3. * = 10% spare disks added in place of onsite service.

Three Year Cost of Ownership: \$3,524,109
tpmC Rating: 165,218.71
\$/ tpmC: \$21.33

Benchmark results and test methodology audited by Lorna Livingtree of Performance Metrics, 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 assumption 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 benchmarks specifications. If you find that the 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: 165,218.71 tpmC

Response Times, in seconds

Transaction	90th %ile	Average	Maximum
New-Order	0.96	0.55	19.09
Payment	0.90	0.49	13.81
Order-Status	0.91	0.51	10.40
Delivery (interactive portion)	0.62	0.30	4.16
Delivery (deferred portion)	0.41	0.27	15.22
Stock-Level	1.20	0.74	14.40
Menu	0.63	0.31	4.17

Response time delay added for emulated components, in seconds

RT Response time	0.1
Menu Response time	0.1

Transaction Mix, in percent of total transactions

New Order	44.88%
Payment	43.04%
Order-Status	4.01%
Delivery (interactive portion)	4.02%
Stock-Level	4.02%

Keying / Think Time Times, in seconds

Transaction	Minimum	Average	Maximum
New Order	18.00 / 0.00	18.00 / 12.03	18.07 / 120.31
Payment	3.00 / 0.00	3.00 / 12.03	3.05 / 120.30
Order-Status	2.00 / 0.00	2.00 / 10.08	2.03 / 100.71
Delivery (interactive portion)	2.00 / 0.00	2.00 / 5.06	2.05 / 50.60
Stock-Level	2.00 / 0.00	2.00 / 5.06	2.01 / 50.60

Test Duration

Ramp up time	44 minutes
Measurement interval (M)	120 minutes
Transactions (all types) completed during measurement interval	44,168,984
Ramp-down time	95 minutes

Checkpointing:

Number of checkpoints	4
Checkpoint interval	30 minutes