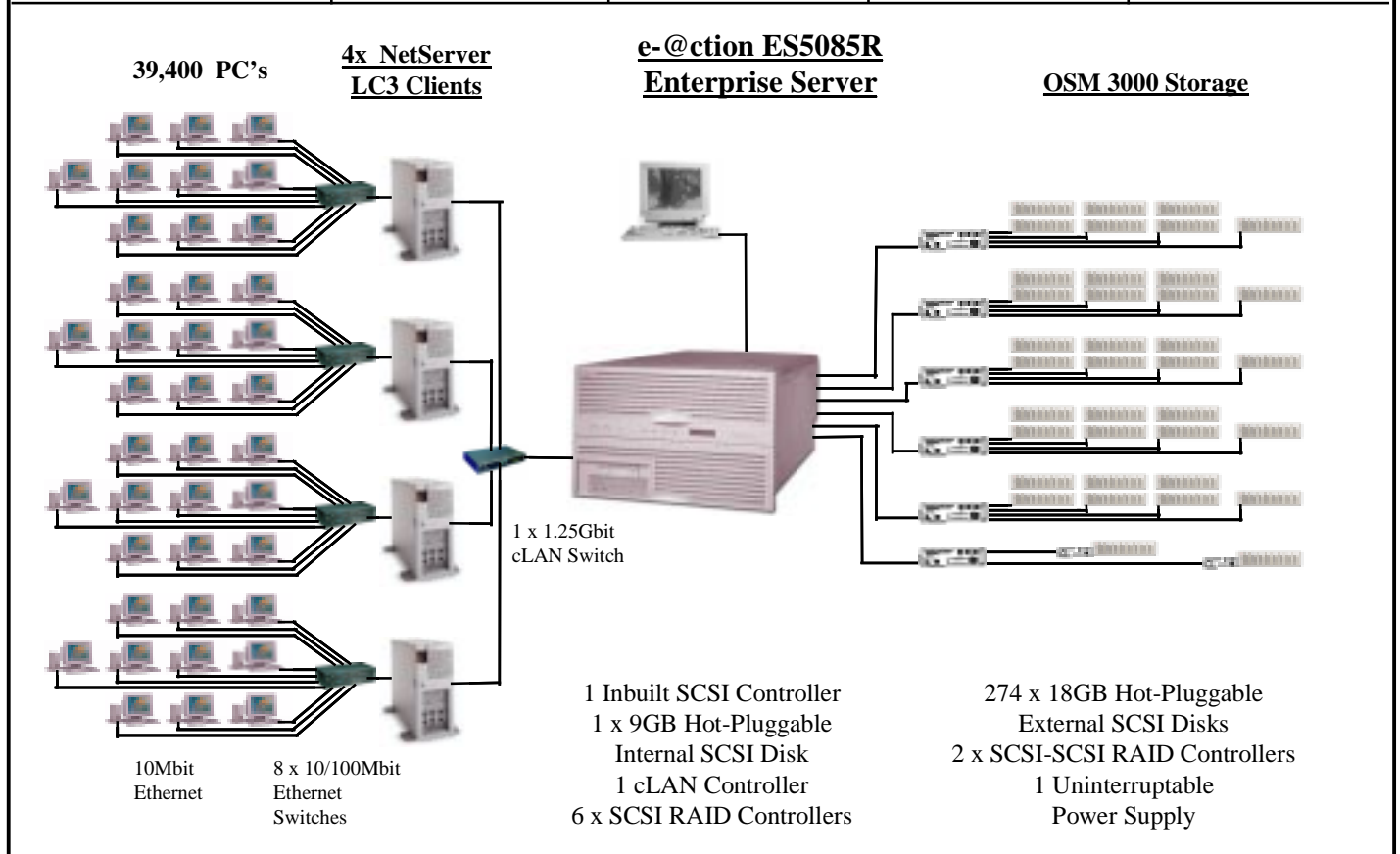| **UNISYS**	**e-@ction ES5085R Enterprise Server** (8P 550MHz/2MB)	TPC-C Rev. 3.5 Report Date: 15-Feb-2000 Updated: 18-Aug-2000

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$981,337	**48,767.76 tpmC**	**$20.13 per tpmC**	**26-Sep-2000**

Processors	Database Manager	Operating System	Other Software	Number of Users
8 Pentium® III Xeon 550 MHz 2MB L2 cache	Microsoft SQL Server 2000 Version 8, Ent. Ed.	Microsoft Windows 2000 Datacenter Server	Windows 2000 Server, IIS 5.0 and COM+	**39,400**

39,400 PC's **4x NetServer LC3 Clients** **e-@ction ES5085R Enterprise Server** **OSM 3000 Storage**

1 x 1.25Gbit cLAN Switch

10Mbit Ethernet   8 x 10/100Mbit Ethernet Switches

1 Inbuilt SCSI Controller
1 x 9GB Hot-Pluggable Internal SCSI Disk
1 cLAN Controller
6 x SCSI RAID Controllers

274 x 18GB Hot-Pluggable External SCSI Disks
2 x SCSI-SCSI RAID Controllers
1 Uninterruptable Power Supply

System Components	**Enterprise Server**		**Clients** (each of 4)	
	Quantity	Type	Quantity	Type
Processors	8	550 MHz Pentium® III Xeon with 2MB Level 2 Cache	2	500 MHz Pentium® III with 512KB Level 2 Cache
Memory	1	32 GB	1	512 MB
Disk Controllers	6 + 2 1	SCSI RAID Inbuilt SCSI	1	Inbuilt SCSI
Disk Drives	1 274	8.19 GB (boot drive) 16.76 GB	1	8.54 GB
Total Storage		4601.53 GB		8.54 GB
CD-ROM / Tape	1	SCSI CD-ROM Drive	1	CD-ROM Drive

Description	Style	Third Party Brand	Pricing	Unit Price	Qty.	Extended Price	5 Years Maint.
Server Hardware							
SYS: ES5085R, 0CPU, 0MB, w/ MS Windows2000 Datacenter	ESR508151-DZN			$51,700	1	$51,700	$55,136
PROC: 550MHz Pentium III Xeon /2MB Cache & VRMs	XEO3550-2MB		1	$5,157	8	$41,256	$13,248
BRD: Processor Mezzanine Board, 0 Proc.	ESR81-MEZ		1	$1,179	1	$1,179	$312
MEM: 1GB Memory, SDRAM, Buf 6ns	DIM6168-1GB		1	$6,630	32	$212,160	$31,488
BRD: Memory Carrier Board, 0 Mem.	ESR81-MCB		1	$737	1	$737	$192
MEM: Cache Coherency Filter, 4x SRAM	ESR81-CC4		1	$921	2	$1,842	$480
CTRL: RAID, PCI, 4-Ch w/ 32MB Mem + 10% spares	EXtreme 2000	Mylex	2	$1,872	8	$14,976	
CTRL: cLAN, PCI Host Adapter & Cable	PCI10001-CXG		1	$675	1	$675	$144
DISK: 9GB, 10K SCSI LVD, SCA	HDL91102-CX1		1	$516	1	$516	$240
SYS MGT: ES5080 Value Add Software	ESS508011-N		1	$368	1	$368	$168
MONITOR: 15-inch Color	EVG2100-P		1	$221	1	$221	
					Subtotal	**$325,630**	**$101,408**
Storage Hardware							
DISK: 18GB Drive, 10K SCSI LVD, SCA	OSD18209-W45		1	$940	274	$257,560	Spared
DISK: 18GB Drive, 10K SCSI LVD, SCA 10% spares	OSD18209-W45		1	$940	28		$26,320
CAB: Disk, 8 SCA w/ I/F cards, 0 Disks, 3U	OSM310300-L05		1	$2,118	35	$74,130	$33,600
CAB: Disk, 8 SCA w/ RAID Cntl'r, 0MB, 0 Disks, 3U	OSM311000-LR		1	$4,191	2	$8,382	$4,248
MEM: 32MB OSM cache	OSM1032-MEM		1	$187	2	$374	$216
PWR: 2nd Power Supply Upgrade, OSM	OSM3000-BPF		1	$392	2	$784	$264
PWR:3000 VA UPS, 3U	UPD30001-SXR		1	$1,897	1	$1,897	$936
PWR: Distribution Kit, 220V	SFR220-PWR		1	$42	12	$504	
CBL: SCSI 68-pin VHD Conn's, 5 meter	CBL134-5		1	$142	22	$3,124	
CBL: SCSI 68-pin VHD Conn's, 0.5 meter	CBL134-CAT		1	$69	15	$1,035	
CAB: Rackmount Kit for Disk Cages	OSM3000-RMK		1	$97	37	$3,589	
CAB: 36U x 19" x 34" Cabinet, Open	RM361934-OFT		1	$884	4	$3,536	
DOOR: 36U x 19", Rear	RM3619-RDR		1	$277	4	$1,108	
PNL: 36U x 34" Side Skins, L&R	RM3634-SDS		1	$221	4	$884	
					Subtotal	**$356,907**	**$65,584**
Server Software							
Microsoft SQL Server 2000 Version 8, Ent. Ed., unlimited CALs		Microsoft	3	$28,999	1	$28,999	$10,475
Microsoft Windows 2000, Resource Kit		Microsoft	3	$240	1	$240	Inc. above
					Subtotal	**$29,239**	**$10,475**
Client Hardware							
SYS: NetServer LC3, w/1 500MHz Proc., 0MB Mem	D7127-AV		1	$1,399	4	$5,596	$6,444
PROC:1x500MHz Pentium III/512KB Cache UPG	D7130-AV		1	$827	4	$3,308	$1,728
MEM: 128 MB SDRAM Memory Upgrade	D6098-AV		1	$199	16	$3,184	
DISK: 9GB SCSI 3.5 Internal	D4911-AV		1	$317	4	$1,268	$1,632
ETHERNET: 10/100TX Mbit/sec, PCI 32-bit	D5013-AV		1	$74	8	$592	
CTRL: cLAN, PCI Host Adapter & Cable	PCI10001-CXG		1	$675	4	$2,700	$576
MONITOR:15-inch Color	EVG2100-P		1	$221	4	$884	
					Subtotal	**$17,532**	**$10,380**
Client Software							
O/S: Microsoft Windows 2000 Server, incl 25 CALs		Microsoft	3	$809	4	$3,236	Inc. above
ACC: Microsoft Visual C++ Professional 6.0		Microsoft	3	$549	1	$549	Inc. above
					Subtotal	**$3,785**	**$0**
User Connectivity							
SWITCH: cLAN, 8-port, 1.25Gbit	SWT50081-CXG		1	$5,313	1	$5,313	$1,704
SWITCH: Ethernet, 8-Port 100TX TrueFast + 10% spares	NX-SW8	Netlux	4	$179	10	$1,790	spared
HUB: Ethernet, 8-Port 10Base-T (8+1 ports) + 10% spares	HB-1009DX/P	NetCruiser	5	$24	5434	$130,416	spared
					Subtotal	**$137,519**	**$1,704**
					Total	**$870,612**	**$189,551**
Unisys Service Pre-Pay Discount							($12,323)
Western Micro discount			1			($66,503)	

Notes:

1. HW Maintenance - Unisys 36 month warranty is upgraded to service level: Standard Performance-Gold. Last 24 months are also at service level: Standard Performance-Gold.
2. All Microsoft maintenance is covered by the maintenance cost of Microsoft SQL Server.
3. 10% or minimum 2 spares are added in place of onsite service (products have a five year return-to-vendor warranty)
4. Pricing: 1 = Western Micro, 2 = Mylex, 3 = Microsoft, 4 = Netlux, 5 = NetCruiser

Five Year Cost of Ownership	**$981,337**
TPC-C Throughput	**48,767.76**
$/tpmC	**$20.13**

The benchmark results and test methodology were audited by Tom Sawyer 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
for
Unisys e-@ction ES5085R Enterprise Server

MQTh, Computed Maximum Qualified Throughput: **48,767.76**

% throughput difference, reported & reproducibility runs: 0.21%

Transaction Mix

New Order	44.81%
Payment	43.06%
Delivery	4.02%
Stock-Level	4.05%
Order-Status	4.03%

Response Times

Transaction	Average	Maximum	90th %ile
New-Order	0.53	4.99	0.89
Payment	0.48	4.67	0.84
Delivery	0.22	1.52	0.45
Stock-Level	0.75	3.40	1.15
Order Status	0.49	5.11	0.85
Menu	0.23	4.43	0.45
Delivery (Deferred)	0.38	2.45	0.61

Response time delay added for emulated components (seconds)

RT Response time	0.1
Menu Response time	0.1

Keying/Think Time Times (seconds)

Transaction	Minimum	Average	Maximum
New-Order	18.00/0	18/12.04	19.07/120.49
Payment	3.00/0	3/12.02	4.16/120.3
Delivery	2.00/0	2/5.06	2.88/50.6
Stock-Level	2.00/0	2/5.05	2.88/50.6
Order-Status	2.00/0	2/10.07	3/100.71

Test Duration

Ramp up time	57 minutes
Measurement interval (M)	30 minutes
Transactions (all types) completed during measurement interval	3,264,375
Ramp-down time	125 minutes

Checkpointing:

Number of checkpoints	1
Checkpoint interval	30 minutes