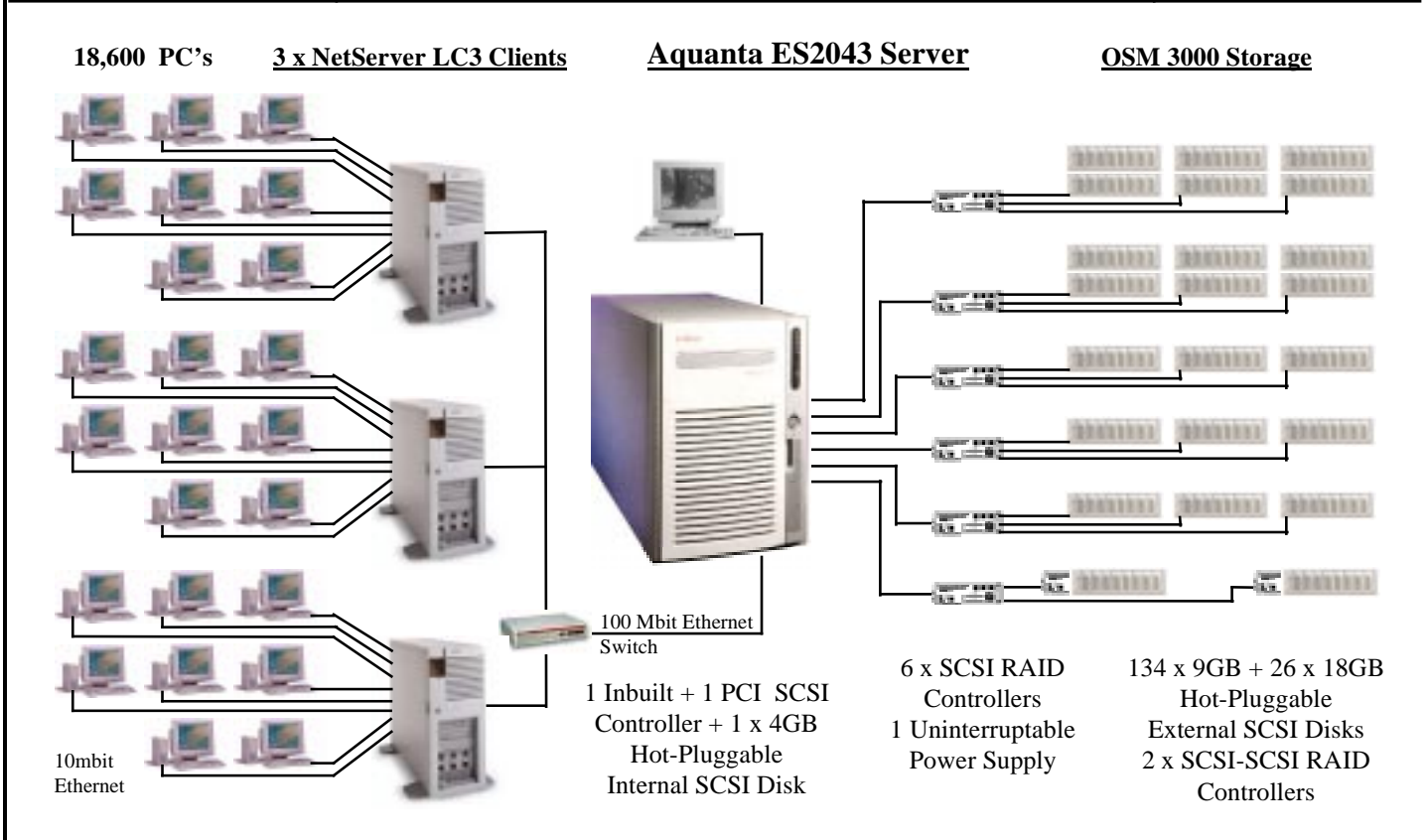| UNISYS	Aquanta ES2043 Server (4P 500MHz/2MB)	TPC-C Rev. 3.4 Report Date: 7-May-1999 Reprice Date: 10-Aug-1999

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$412,525	**23,189.90 tpmC**	**$17.79 per tpmC**	**7-May-1999**

Processors	Database Manager	Operating System	Other Software	Number of Users
4 Pentium® III Xeon 500 MHz 2MB L2 cache	Microsoft SQL Server Enterprise Edition 7.0	Microsoft NT Server 4.0 Enterprise Edition	Microsoft IIS 3.0 Tuxedo 6.3 CFS	**18,600**

18,600 PC's   **3 x NetServer LC3 Clients**   **Aquanta ES2043 Server**   **OSM 3000 Storage**

10mbit Ethernet

100 Mbit Ethernet Switch

1 Inbuilt + 1 PCI SCSI Controller + 1 x 4GB Hot-Pluggable Internal SCSI Disk

6 x SCSI RAID Controllers
1 Uninterruptable Power Supply

134 x 9GB + 26 x 18GB Hot-Pluggable External SCSI Disks
2 x SCSI-SCSI RAID Controllers

System Components	Server		Clients	
	Quantity	Type	Quantity	Type
Processors	4	500 MHz Pentium® III Xeon with 2MB Level 2 Cache	3	2 x 450MHz Pentium® II with 512KB Level 2 Cache
Memory	1	4096MB	3	512MB
Disk Controllers	6 + 2 1 + 1	SCSI RAID Inbuilt + PCI SCSI	3	Inbuilt SCSI
Disk Drives	1 134 26	4.24 GB 8.54 GB 17.09 GB	3	3.97 GB
Total Storage		1593.10 GB		11.91 GB
CD-ROM / Tape	1	SCSI CD-ROM Drive	3	CD-ROM Drive

Unisys Corporation				Aquanta ES2043 Server (4P 500MHz/2MB)			TPC-C Rev 3.4 10-Aug-1999

Description	Style	Third Party Brand	Pricing	Unit Price	Qty.	Extended Price	5 Years Maint.
Server Hardware							
SYS: Aquanta ES2043, w/ CDRom, 0 Proc, 0MB Mem	ES204131-GCN		1	$4,125	1	$4,125	$1,968
PROC: 500MHz Pentium III Xeon /2MB Cache & VRM	XEO3500-2MB		1	$5,893	4	$23,572	$9,888
ACC:Voltage Regulator Module	XEO24001-VRM		1	$44	4	$176	
MEM: 256 MB Memory Upgrade	DIM5072-256		1	$796	16	$12,736	$5,568
DISK: 4GB Drive, Ultra SCSI SCA	HDS417-CX1		1	$406	1	$406	$264
ETHERNET: 100Mbit/sec, PCI 32-bit	ETH1010051-PCI		1	$99	1	$99	
MONITOR:15-inch Color	EVG2100-P		1	$221	1	$221	
KEYBD: 104 Key Spacesaver	PCK104-SKB		1	$26	1	$26	
MOUSE: 2 Button PS2	PWM1-PS2		1	$15	1	$15	
CTRL: RAID 3-Ch PCI w/ 32MB Mem&Bat.BU+10% spares	DAC1164P	Mylex	2	$1,708	8	$13,664	
				Subtotal		**$55,040**	**$17,688**
Storage Hardware							
DISK: 9GB Drive, 10K SCSI LVD, SCA + 10% spares	OSD9205-W45		1	$618	148	$91,464	spared
DISK: 18GB Drive, 10K SCSI LVD, SCA + 10% spares	OSD18205-W45		1	$1,153	29	$33,437	spared
CAB: Disk, 8 SCA w/ I/F cards, 0 Disks, 3U	OSM310300-L05		1	$2,118	21	$44,478	$20,160
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
CBL: SCSI 68-pin VHD Conn's, 5 meter	CBL134-5		1	$142	17	$2,414	
CBL: SCSI 68-pin VHD Conn's, 0.5 meter	CBL134-CAT		1	$69	6	$414	
ACC: Deskside Pedestal	OSM3000-DSK		1	$26	23	$598	
				Subtotal		**$184,242**	**$25,824**
Server Software							
Microsoft NT Server Enterprise Edition 4.0, incl 25 CALs		Microsoft	3	$3,999	1	$3,999	$0
Microsoft SQL Server Enterprise Edtion 7.0, unlimited user license		Microsoft	3	$28,999	1	$28,999	$10,475
				Subtotal		**$32,998**	**$10,475**
Client Hardware							
SYS: NetServer LC3, w/1 450MHz Proc & CDROM, 0MB Mem	D7029-AV		1	$1,660	3	$4,980	$3,600
PROC:1x450MHz Pentium II/512KB Cache UPG	D7032-AV		1	$993	3	$2,979	$1,512
MEM: 128 MB SDRAM Memory Upgrade	D6098-AV		1	$255	12	$3,060	
DISK: 4GB SCSI 3.5 Internal	D4910-AV		1	$303	3	$909	$1,764
ETHERNET: 10/100TX Mbit/sec, PCI 32-bit	D5013-AV		1	$68	15	$1,020	
ETHERNET: 100Mbit/sec, PCI 32-bit, Quad	SF1001-ET4		1	$958	3	$2,874	$1,188
MONITOR:15-inch Color	EVG2100-P		1	$221	3	$663	
				Subtotal		**$16,485**	**$8,064**
Client Software							
Microsoft Windows NT Server 4.0, incl 5 CALs		Microsoft	3	$809	3	$2,427	$0
Microsoft Visual C++ Professional 5.0		Microsoft	3	$499	1	$499	$0
TUXEDO Core Functional Services 6.3 for NT		BEA	4	$3,000	3	$9,000	$7,200
				Subtotal		**$11,926**	**$7,200**
User Connectivity							
Ethernet Switch, 8-Port 100TX TrueFast + 10% spares	NX-SW8	Netlux	5	$229	3	$687	spared
Ethernet Hub, 8-Port 10Base-T (8+1 ports) + 10% spares	Z85094	General	6	$28	2574	$72,072	spared
				Subtotal		**$72,759**	**$0**
				Total		**$373,450**	**$69,251**
Unisys Service Pre-Pay Discount							($5,966)
Western Micro discount			1			(**$24,210**)	

Notes:

1. HW Maintenance - First 36 months that are included in Unisys warranty are 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 = BEA, 5 = Netlux, 6 = Software House Int'l

Five Year Cost of Ownership	**$412,525**
TPC-C Throughput	**23,189.90**
$/tpmC	**$17.79**

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 Aquanta ES2043 Server

MQTh, Computed Maximum Qualified Throughput: **23,189.90**

% throughput difference, reported & reproducibility runs: 0.26%

Transaction Mix

New Order	44.82%
Payment	43.08%
Delivery	4.02%
Stock-Level	4.03%
Order-Status	4.05%

Response Times

Transaction	Average	Maximum	90th %ile
New-Order	0.45	5.52	0.74
Payment	0.31	5.33	0.59
Delivery	0.11	0.60	0.12
Stock-Level	2.38	5.44	3.12
Order Status	0.34	3.94	0.62
Menu	0.11	3.77	0.11
Delivery (Deferred)	0.48	1.63	0.70

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	18.01/12.04	18.03/120.3
Payment	3.00/0	3/12.02	3.02/120.3
Delivery	2.00/0	2/5.06	2.01/50.6
Stock-Level	2.00/0	2/5.04	2.01/50.44
Order-Status	2.00/0	2/10.14	2.01/100.7

Test Duration

Ramp up time	39 minutes
Measurement interval (M)	30 minutes
Transactions (all types) completed during measurement interval	1,552,188
Ramp-down time	61 minutes

Checkpointing:

Number of checkpoints	1
Checkpoint interval	30 minutes