UNISYS	Aquanta QS/2V Server C/S	TPC-C Rev. 3.4
		Report Date: 02-Dec-1998

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
$422,675	**19,118.37 tpmC**	**$22.11 per tpmC**	**29-Dec-1998**

Processors	Database Manager	Operating System	Other Software	Number of Users
4 Pentium® II Xeon 400 MHz 1MB L2 cache	Microsoft SQL Server Enterprise Edition 7.0	Microsoft NT Server 4.0 Enterprise Edition	Microsoft IIS 3.0 Tuxedo 6.3 CFS	**15,300**

3 x Aquanta GPS Clients   **Aquanta QS/2V Server**

10mbit Ethernet

15,300 PC's

100 Mbit Ethernet

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

6 x SCSI RAID Controllers
1 Uninterruptable Power Supply

153 x 9GB Hot-Pluggable External SCSI Disks
2 x SCSI-SCSI RAID Controllers
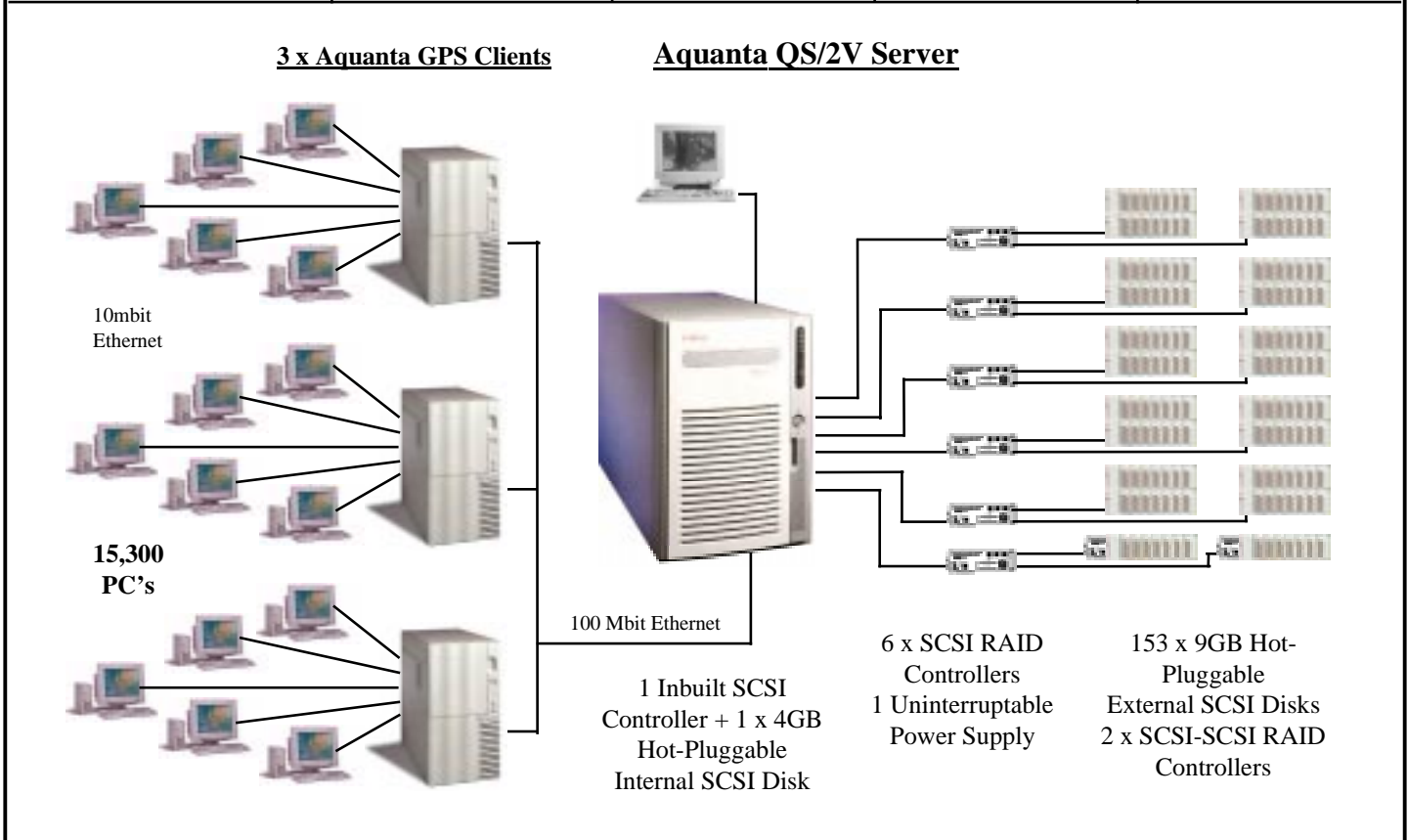
System Components	Server		Clients	
	Quantity	Type	Quantity	Type
Processors	4	400 MHz Pentium® II Xeon with 1MB Level 2 Cache	3	2 x 300MHz Pentium® II with 512KB Level 2 Cache
Memory	1	4096MB	3	256MB
Disk Controllers	6 + 2 / 1	SCSI RAID / Inbuilt SCSI	3	Inbuilt SCSI
Disk Drives	153 / 1	8.48 GB / 4.24 GB	3	2.02 GB
Total Storage		1301.60 GB		6.06 GB
CD-ROM / Tape	1	CD-ROM Drive	3	CD-ROM Drive

Description	Style	Third Party Brand	Pricing	Unit Price	Qty.	Extended Price	5 Years Maint.
Server Hardware							
SYS: Aquanta QS/2V, w/ CDRom, 0 Proc, 0MB Mem	QVS200071-BCS		1	$5,100	1	$5,100	$1,752
PROC: 1x400MHz Pentium II /1MB Cache	XEV2400-1MB		1	$3,627	4	$14,508	$4,992
ACC: Voltage Regulator Module, Processor	XEO24001-VRM		1	$46	6	$276	
MEM: 256 MB Memory Upgrade	DIM5072-256		1	$963	16	$15,408	$5,568
DISK: 4GB Drive, Ultra SCSI SCA	HDS417-CX1		1	$746	1	$746	$264
ETHERNET: 100Mbit/sec, PCI 32-bit	ETH1010051-PCI		1	$117	1	$117	
CDROM: 14-32x Speed, SCSI	CDR1432-SI		1	$161	1	$161	$48
MONITOR:15-inch Color	EVG2100-P		1	$320	1	$320	
KEYBD: 104 Key Spacesaver	PCK104-SKB		1	$31	1	$31	
MOUSE: 2 Button PS2	PWM1-PS2		1	$23	1	$23	
CTRL: RAID 3-Ch PCI w/ 32MB Mem&Bat.BU+10% spares	DAC1164PVX	Mylex	2	$2,838	8	$22,704	$400
					Subtotal	$59,394	$13,024
Storage Hardware							
CBL: SCSI 68-pin HD->VHD Conn's	CBL2210-OSM		1	$90	12	$1,080	
DISK: 9GB Drive, 10K, SCA + 10% spares	OSD9203-W45		1	$930	169	$157,170	spared
CAB: Disk, 7 SCA w/ 050 I/F & Cat-Cbl, 0 Disks, 3U	OSM310050-U05		1	$1,345	10	$13,450	$7,680
CAB: Disk, 7 SCA w/ 057 I/F, 0 Disks, 3U	OSM310057-U05		1	$1,350	10	$13,500	$7,680
CAB: Disk, 7 SCA w/ 100 I/F, 0MB, 0 Disks, 3U	OSM310100-U05		1	$2,727	2	$5,454	$3,456
MEM: 32MB OSM cache	OSM1000-C32		1	$150	2	$300	$216
CAB: Rackmount Kit for Disk Cages	OSM3000-RMK		1	$84	22	$1,848	
PWR: 2nd Power Supply Upgrade, OSM Cabinet	OSM3000-APM		1	$261	2	$522	$264
PWR:3000 VA UPS, 3U	UPD30001-SXR		1	$2,239	1	$2,239	$936
CAB: Rack Cabinet, w/ fill pnls, 36U	CAB361-SXR		1	$1,384	2	$2,768	
CAB: Bezel kit 36U	BEZ3611-CAB		1	$206	2	$412	
CAB: Stabilizer kit 0U	WGT39581-SXR		1	$110	2	$220	
PNL: L&R side panels 36U	PAN3621-SXR		1	$192	2	$384	
					Subtotal	$199,347	$20,232
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: Aquanta GPS, 0 Proc, 0MB Mem	GPS600071-BAS		1	$945	3	$2,835	$1,368
PROC:1x300MHz Pentium II/512KB Cache	GPS2300-512		1	$863	6	$5,178	$2,736
UPGRD: GPS P-II 2nd CPU Supt.	GPS600071-P2U		1	$32	3	$96	$144
MEM: 128 MB Memory Upgrade	DIM672-128		1	$741	6	$4,446	$1,584
DISK: 2GB Ultra SCSI 3.5 Internal	HDS2000-SW7		1	$573	3	$1,719	$1,584
CDROM: 14-32x Speed, SCSI	CDR1432-SI		1	$161	3	$483	$144
ETHERNET: 100Mbit/sec, PCI 32-bit	ETH101007-PCI		1	$101	6	$606	
ETHERNET: 100Mbit/sec, PCI 32-bit, Quad	SF1001-ET4		1	$1,212	3	$3,636	$1,188
MONITOR:15-inch Color	EVG2100-P		1	$320	3	$960	
KEYBD: 104 Key Spacesaver	PCK104-SKB		1	$31	3	$93	
MOUSE: 2 Button PS2	PWM1-PS2		1	$23	3	$69	
					Subtotal	$20,121	$8,748
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	$6,750
					Subtotal	$11,926	$6,750
User Connectivity							
Ethernet Hub, 8-Port 100TX TrueFast + 10% spares	NX-H8TX	Netlux	5	$205	3	$615	spared
Ethernet Hub, 8-Port 10Base-T + 1-Port BNC + 10% spares	DEH2924	DataComm	6	$33	2106	$69,498	spared
					Subtotal	$70,113	$0
					Total	$393,899	$59,229
Unisys Service Pre-Pay Discount			1				($4,837)
Western Micro discount			1			($25,616)	

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 = DataComm Whse

Five Year Cost of Ownership	**$422,675**
TPC-C Throughput	**19,118.37**
$/tpmC	**$22.11**

The benchmark results and test methodology were audited by Richard Gimarc 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

Unisys Aquanta QR/2 Server
Microsoft SQL Server Enterprise Edition 7.0

MQTh, Computed Maximum Qualified Throughput: **19118.37**

% throughput difference, reported & reproducibility runs: 0.08%

Transaction Mix

New Order	44.82%
Payment	43.14%
Delivery	4.02%
Stock-Level	4.01%
Order-Status	4.00%

Response Times

Transaction	Average	Maximum	90th %ile
New-Order	0.41	5.90	0.55
Payment	0.24	4.83	0.34
Delivery	0.13	1.91	0.14
Stock-Level	2.34	7.79	3.19
Order Status	0.30	4.88	0.41
Menu	0.12	3.21	0.13
Delivery (Deferred)	0.56	4.73	0.84

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	18.01/12.03	18.09/120.31
Payment	3.00/0	3/12.03	3.09/120.31
Delivery	2.00/0	2/5.07	2.06/50.6
Stock-Level	2.00/0	2/5.09	2.08/50.6
Order-Status	2.00/0	2/10.06	2.05/100.72

Test Duration

Ramp up time	47 minutes
Measurement interval (M)	30 minutes
Transactions (all types) completed during measurement interval	1279540
Ramp-down time	47 minutes

Checkpointing:

Number of checkpoints	1
Checkpoint interval	30 minutes