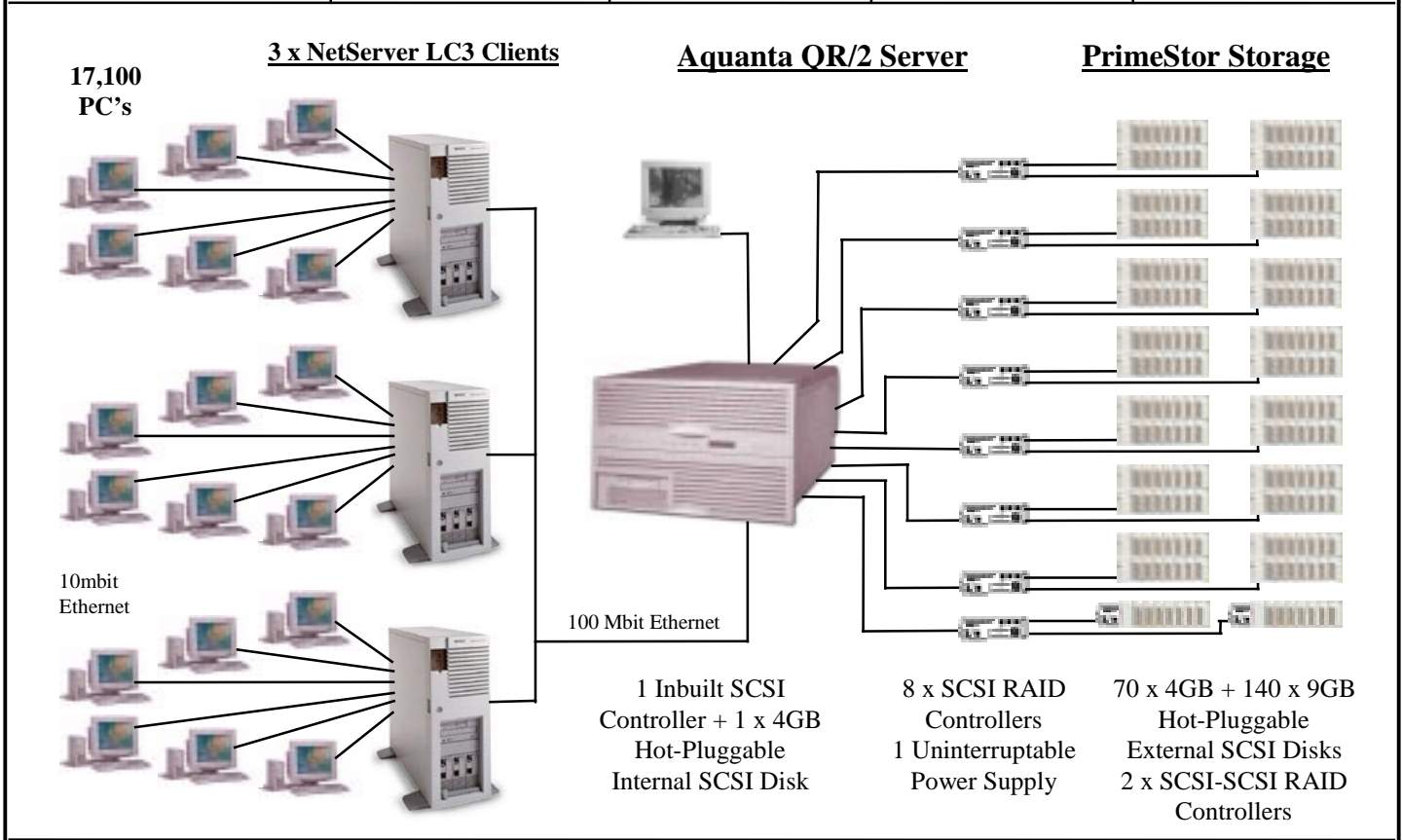


<b>UNISYS</b>	<b>Aquanta QR/2 Server C/S</b>		TPC-C Rev. 3.4
			Report Date: 4-Jan-1999
Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
<b>\$506,676</b>	<b>21,354.55 tpmC</b>	<b>\$23.73 per tpmC</b>	<b>5-Jan-1999</b>
Processors	Database Manager	Operating System	Other Software
4 Pentium® II Xeon 450 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
			<b>Number of Users</b>  <b>17,100</b>



System Components	Server		Clients	
	Quantity	Type	Quantity	Type
Processors	4	450 MHz Pentium® II Xeon with 2MB Level 2 Cache	3	2 x 450MHz Pentium® II with 512KB Level 2 Cache
Memory	1	4096MB	3	512MB
Disk Controllers	8 + 2	SCSI RAID Inbuilt SCSI	3	Inbuilt SCSI
Disk Drives	70 140 1	4.24 GB 8.48 GB 4.23 GB	3	3.97 GB
Total Storage		1487.98 GB		11.91 GB
CD-ROM / Tape	1	CD-ROM Drive	3	CD-ROM Drive

Unisys Corporation		Aquanata QR/2 Server C/S				TPC-C Rev 3.4 4-Jan-1999	
Description	Style	Third Party Brand Pricing	Unit Price	Qty.	Extended Price	5 Years Maint.	
<b>Server Hardware</b>							
SYS: Aquanata QR/2, w/ CDROM, 0 Proc, 0MB Mem	QR2000101-BAS		\$10,820	1	\$10,820	\$3,936	
PROC: 1x450MHz Pentium II /2MB Cache	XER2450-2MB		\$6,800	4	\$27,200	\$9,648	
ACC: Voltage Regulator Module, Processor	XEO24001-VRM		\$46	6	\$276		
MEM: 128 MB Memory Upgrade	DIM5072-128		\$459	32	\$14,688	\$8,448	
DISK: 4GB Drive, Ultra SCSI SCA	HDS417-CX1		\$746	1	\$746	\$264	
ETHERNET: 100Mbit/sec, PCI 32-bit	ETH1010051-PCI		\$117	1	\$117		
CDROM: 14-32x Speed, SCSI	CDR1432-SI		\$161	1	\$161	\$48	
MONITOR:15-inch Color	EVG2100-P		\$320	1	\$320		
KEYBD: 104 Key Spacesaver	PCK104-SKB		\$31	1	\$31		
MOUSE: 2 Button PS2	PWM1-PS2		\$23	1	\$23		
CTRL: RAID 3-Ch PCI w/ 32MB Mem&Bat.BU+10% spares	DAC1164PVX	Mylex	\$2,058	10	\$20,580	\$500	
			<b>Subtotal</b>		<b>\$74,962</b>	<b>\$22,844</b>	
<b>Storage Hardware</b>							
DISK: 4GB Drive, 10K, SCA + 10% spares	OSD4203-W45		\$625	77	\$48,125	spared	
DISK: 9GB Drive, 10K, SCA + 10% spares	OSD9203-W45		\$930	154	\$143,220	spared	
CAB: Disk, 7 SCA w/ 050 I/F & Cat-Cbl, 0 Disks, 3U	OSM310050-U05		\$1,345	14	\$18,830	\$10,752	
CAB: Disk, 7 SCA w/ 057 I/F, 0 Disks, 3U	OSM310057-U05		\$1,350	14	\$18,900	\$10,752	
CAB: Disk, 7 SCA w/ 100 I/F, 0MB, 0 Disks, 3U	OSM310100-U05		\$2,727	2	\$5,454	\$3,456	
MEM: 32MB OSM cache	OSM1000-C32		\$150	2	\$300	\$216	
PWR: 2nd Power Supply Upgrade, OSM Cabinet	OSM3000-APM		\$261	2	\$522	\$264	
PWR:3000 VA UPS, 3U	UPD30001-SXR		\$2,239	1	\$2,239	\$936	
PWR: Distribution Unit, 6 OSM Cabinets	RM1-PDU		\$379	6	\$2,274	\$3,600	
CBL: SCSI 68-pin HD->VHD Conn's	CBL2210-OSM		\$90	16	\$1,440		
CAB: Rackmount Kit for Disk Cages	OSM3000-RMK		\$84	30	\$2,520		
CAB: Rack Cabinet, w/ fill pnls, 36U	CAB361-SXR		\$1,384	3	\$4,152		
CAB: Bezel kit 36U	BEZ3611-CAB		\$206	3	\$618		
CAB: Stabilizer kit 0U	WGT39581-SXR		\$110	3	\$330		
PNL: L&R side panels 36U	PAN3621-SXR		\$192	3	\$576		
			<b>Subtotal</b>		<b>\$249,500</b>	<b>\$29,976</b>	
<b>Server Software</b>							
Microsoft NT Server Enterprise Edition 4.0, incl 25 CALs		Microsoft	\$3,999	1	\$3,999	\$0	
Microsoft SQL Server Enterprise Edtion 7.0, unlimited user license		Microsoft	\$28,999	1	\$28,999	\$10,475	
			<b>Subtotal</b>		<b>\$32,998</b>	<b>\$10,475</b>	
<b>Client Hardware</b>							
SYS: NetServer LC3, w/1 450MHz Proc & CDROM, 0MB Mem	D7026-AV		\$1,910	3	\$5,730	\$3,600	
PROC:1x450MHz Pentium II/512KB Cache UPG	D7032-AV		\$1,138	3	\$3,414	\$1,512	
MEM: 128 MB SDRAM Memory Upgrade	D6098-AV		\$358	12	\$4,296		
DISK: 4GB SCSI 3.5 Internal	D4910-AV		\$316	3	\$948	\$1,764	
ETHERNET: 10/100TX Mbit/sec, PCI 32-bit	D5013-AV		\$68	15	\$1,020		
ETHERNET: 100Mbit/sec, PCI 32-bit, Quad	SF1001-ET4		\$1,212	3	\$3,636	\$1,584	
MONITOR:15-inch Color	EVG2100-P		\$320	3	\$960		
			<b>Subtotal</b>		<b>\$20,004</b>	<b>\$8,460</b>	
<b>Client Software</b>							
Microsoft Windows NT Server 4.0, incl 5 CALs		Microsoft	\$809	3	\$2,427	\$0	
Microsoft Visual C++ Professional 5.0		Microsoft	\$499	1	\$499	\$0	
TUXEDO Core Functional Services 6.3 for NT		BEA	\$3,000	3	\$9,000	\$6,750	
			<b>Subtotal</b>		<b>\$11,926</b>	<b>\$6,750</b>	
<b>User Connectivity</b>							
Ethernet Hub, 8-Port 100TX TrueFast + 10% spares	NX-H8TX	Netlux	\$205	3	\$615	spared	
Ethernet Hub, 8-Port 10Base-T + 1-Port BNC + 10% spares	DEH2924	Compex	\$33	2353	\$77,649	spared	
			<b>Subtotal</b>		<b>\$78,264</b>	<b>\$0</b>	
			<b>Total</b>		<b>\$467,654</b>	<b>\$78,505</b>	
Unisys Service Pre-Pay Discount						(\$7,094)	
Western Micro discount							
					<b>(\$32,389)</b>		
<b>Notes:</b>							
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							
<b>The benchmark results and test methodology were audited by Richard Gimarc of Performance Metrics, Inc.</b>							
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.							
					<b>Five Year Cost of Ownership</b>	<b>\$506,676</b>	
					<b>TPC-C Throughput</b>	<b>21,354.55</b>	
					<b>\$/tpmC</b>	<b>\$23.73</b>	

**NUMERICAL QUANTITIES SUMMARY**  
 Unisys Aquanta QR/2 Server  
 Microsoft SQL Server Enterprise Edition 7.0

**MQTh, Computed Maximum Qualified Throughput:** **21354.55**  
 % throughput difference, reported & reproducibility runs: 0.25%

**Transaction Mix**

New Order	44.88%
Payment	43.06%
Delivery	4.04%
Stock-Level	4.01%
Order-Status	4.02%

**Response Times**

Transaction	Average	Maximum	90th %ile
New-Order	0.43	4.10	0.65
Payment	0.29	3.88	0.49
Delivery	0.12	0.71	0.12
Stock-Level	2.23	5.53	3.01
Order Status	0.33	3.79	0.54
Menu	0.12	3.06	0.12
Delivery (Deferred)	0.51	2.33	0.76

**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	18.07/120.3
Payment	3.00/0	3/12.03	3.04/120.31
Delivery	2.00/0	2/5.03	2.04/50.6
Stock-Level	2.00/0	2/5.01	2.04/44.85
Order-Status	2.00/0	2/10.1	2.02/100.71

**Test Duration**

Ramp up time	23 minutes
Measurement interval (M)	20 minutes
Transactions (all types) completed during measurement interval	951,653
Ramp-down time	39 minutes

**Checkpointing:**

Number of checkpoints	1
Checkpoint interval	20 minutes