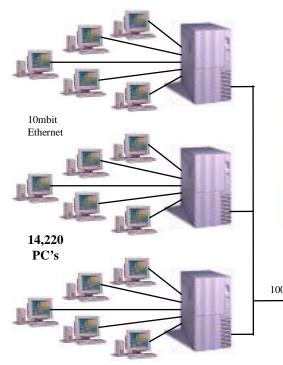
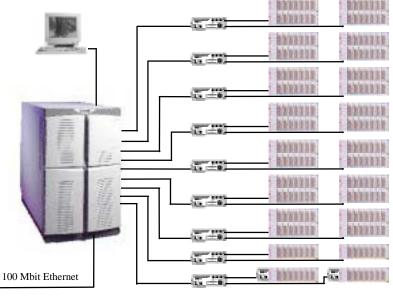
unisys	Aquanta QS/2 Server C/S				TPC-C Rev. 3.3 Report Date: 29-Jun-1998
Total System Cost	TPC-C Throughput	Price/Performance			Availability Date
\$463,958	17,700.43 tpi	mС	\$26.2	21 per tpmC	29-Dec-1998 *
Processors	Database Manager	Operating System		Other Software	Number of Users
4 Pentium [®] II 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	14,220

3 x Aquanta GPS Clients

Aquanta QS/2 Server





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

9 x SCSI RAID Controllers 1 Uninterruptable Power Supply

150 x 4GB + 67 x 9GB Hot-Pluggable External SCSI Disks 2 x SCSI-SCSI RAID Controlers

S C 4	Server		Clients		
System Components	Quantity	Туре	Quantity	Туре	
Processors	4	400 MHz Pentium [®] II Xeon with 1MB Level 2 Cache	3	2 x 266MHz Pentium [®] II with 512KB Level 2 Cache	
Memory	1	4096MB	3	256MB	
Disk Controllers	9 + 2 1	SCSI RAID Inbuilt SCSI	3	Inbuilt SCSI	
Disk Drives	150 67 1	4.24 GB 8.48 GB 4.23 GB	3	2.02 GB	
Total Storage		1207.96 GB		6.06 GB	
CD-ROM / Tape	1	CD-ROM Drive	3	CD-ROM Drive	
* All Components Except MS SQL Server EE 7.0 Available 7/17/98					

Section State St	Unisys Corporation			-	anta QS			TPC-C Rev 3.3
Description			Title	Clie		r		
Server Hardware	Description	Style	•	rina		Otv		5 Years Maint
PROC. 1	Server Hardware	Style	Drana i no	Jilig	riice	Qty.	FIICE	Wallit
PROC. 1		QS2000111-BAS		1	\$8,125	1	\$8.125	\$864
MEMERIC Defender places (Jobb Mem MEMBERI	PROC: 1x400MHz Pentium II /1MB Cache							\$11,040
MEM. 128 M. Memory Upgrade	ACC: Voltage Regulator Module, Processor	XEO24001-VRM		1	\$50	6	\$300	\$288
DISK - 4 GID Prive, Units SCSI SCA	MEM:ECC Memory Board, 0MB Mem	MEM241-MBD		1	\$519	2	\$1,038	\$144
ETHERNET: 100Mb/brace, PCI 22-bit ETHERNET: 100Mb/brace, PCI 22-bit S150 1 S15	MEM: 128 MB Memory Upgrade	DIM5072-128		1	\$1,139	32	\$36,448	\$6,144
DROME 14-20 Speed SCS	DISK: 4GB Drive, Ultra SCSI SCA	HDS417-CX1		1	\$680	1	\$680	\$408
MONITOR 15-min Color	ETHERNET: 100Mbit/sec, PCI 32-bit	ETH1010051-PCI		1	\$150	1	\$150	\$48
MCFMBD 104 May Spancesaver	CDROM: 14-32x Speed, SCSI	CDR1432-SI		1	\$178	1	\$178	\$120
MOUSE I: Bulton PS2 PWM + PS2 1 \$25 1 \$25 \$25 \$35	MONITOR:15-inch Color							
CTRL R.A.D. (17-S.CS.2-) Ultra PCI, OMB Mem. R.A.D. R.A.D.D. R.A.D. R.A.D. R.A.D.D. R.A.D. R.A.D.D. R.A.D.D.D. R.A.D.D.D. R.A.D.D.D. R.A.D.D.D.D. R.A.D.D.D.D.D. R.A.D.D.D.D.D.D.D.D.D.D.D. R.A.D.D.D.D.D.D.D.D.	• •							
MEM. 14 MB ECC EDO Memory Upgrade RAD816 AMEM 1 \$230 9 \$1,000 50								
Selection Sel	,							\$3,672
Spice Spi	,			•				\$432
Sign Sign Dinks Cit Sign Cit	•							
DABLY SCAD Pilok Cappe w/0 500 IF A Cat Chil, 3U OSM31005-U1005	•							spared
DABLY SCAD Pilok Cappe wt 000 FV FS 3U OSM310057-U05	•							spared
CAB. P. SCAD Joik Cappe w/ 100 UF, DMB, 3U								
MEM: 32MB OSM cache OSM 1000-C32	•							\$1,920 \$240
CAB. Rackmount Kit for Disc Cages OSMS000-FMK 1 \$82 32 \$2,824 PWR: CSM 2nd Pwens Supply OSMS000-4PM 1 \$2,379 1 \$2,379 \$5 CAB. Rack Cabinet, will plints, 36U CAB. Stack Cabinet, will plints, 36U CAB. Stack Cabinet, will plints, 36U CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$15,30 3 \$4,990 CAB. Back Link Kit of Sol Cabinets LINK 361-5XR 1 \$15,00 3 \$510 CAB. Back Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$510 CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$510 CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$510 CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$510 CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$510 CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$510 CAB. Stack Link Kit of Sol Cabinets LINK 361-5XR 1 \$170 3 \$331,147 \$322 Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Microsoft Sol. Server Enterprise Edition 4.0, Incl 25 CALs NTE4084-L Server Software Client Hardware Server	3							\$240 \$192
PWR: OSM 2nd Power Supply PWR: 300M 2nd Power Su				-				\$192
PWR.200 VA UPS, 3U	•							\$816
CABS tack Cabinet, w/ III pinks, 36U	***							\$264
ABE Linek kif rof 96U cabinels ABE 36811-CAB BEZ8611-CAB BEZ8611								Ψ204
CAB: Stabilizer kitl 0 U WGT39561+SXR 1 \$170 3 \$350 C PAL CAB Stabilizer kitl 0 U WGT39561+SXR 1 \$1 \$120 3 \$350 C PAL CAB Stabilizer kitl 0 U WGT39561+SXR 1 \$1 \$120 3 \$350 C PAL CAB Stabilizer kitl 0 U PAN3621+SXR 1 \$1 \$120 3 \$350 C PAL CAB Stabilizer kitl 0 U PAN3621+SXR 1 \$1 \$120 3 \$350 C PAL CAB STABILIZER STABILI	• •							
ABB Shabilizer kin QU				-				
PRUL L&R side panels 36U PAN 3621 - SXR Server Software Microsoft NT Server Enterprise Edition 4.0, incl 25 CALs NTE 4008-L Microsoft NT Server Enterprise Edition 4.0, incl 25 CALs NTE 4008-L Microsoft SQL Server Enterprise Edition 7.0, incl 25 CALs NTE 4008-L SERVER SERVER SERVER Enterprise Edition 7.0, incl 25 CALs NTE 4008-L NTE 4008-L SERVER SER								
Subtotal						1		
Server Software						Subtotal		\$32,626
Microsoft SQL Server Enterprise Edition 7.0, incl 25 CALs Microsoft 2 \$28,999 1 \$28,999 \$10, \$32,998 \$10, \$32,	Server Software						·	·
Subtract	Microsoft NT Server Enterprise Edition 4.0, incl 25 CALs	NTE4008-L		1	\$3,999	1	\$3,999	\$0
SPS: Aquanta GPS, 0 Proc, 0MB Mem	Microsoft SQL Server Enterprise Editon 7.0, incl 25 CALs		Microsoft	2	\$28,999	1	\$28,999	\$10,475
SYS: Aquanta GPS, 0 Proc, 0MB Mem						Subtotal	\$32,998	\$10,475
PROC:1x266MHz Pentium II/512KB Cache	Client Hardware							
UPGRD: GPS P-II 2nd CPU Supt.	SYS: Aquanta GPS, 0 Proc, 0MB Mem	GPS60071-BAS		1	\$1,077	3	\$3,231	\$936
MEM: 128 MB Memory Upgrade DIM672-128 1 \$1,048 6 \$6,288 \$1,058.12 6 DIK6. 128 MB Memory Upgrade DIM672-128 1 \$5,558 3 \$1,674 \$\$. DISK. 2GB Ultra SCS1 3.5 Internal HDS2000-SW7 1 \$5,558 3 \$1,674 \$\$. CDR1200-SI 1 \$1,509 3 \$4,77 \$\$. CDR1200-SI 1 \$1,007 6 \$5,642 \$\$. ETHERNET: 100Mbit/sec, PCI 32-bit ETH101007-PCI 1 \$1,007 6 \$5,642 \$\$. ETHERNET: 100Mbit/sec, PCI 32-bit, Quad \$F1,014-ET4 1 \$1,011 3 \$3,033 \$\$. MONITOR:15-inch Color EVC2000-E 1 \$3,00 3 \$9,00 \$\$. EVS2000-E 1 \$3,00 3 \$9,00 \$\$. MONITOR:15-inch Color EVC2000-E 1 \$3,00 3 \$9,00 \$\$. EVS2000-E 1 \$5,000 \$\$. MONITOR:15-inch Color EVC2000-E 1 \$5,000 \$\$. EVS2000-E 1 \$5,000 \$\$. MONITOR:15-inch Color EVC2000-E 1 \$5,000 \$\$. EVS2000-E 1 \$5,000 \$\$. MONITOR:15-inch Color EVC2000-E 1 \$5,000 \$\$. EVS2000-E 1 \$5,000 \$\$. MONITOR:15-inch Color EVC2000-E 1 \$5,000 \$\$. EVS2000-E 1 \$5,00	PROC:1x266MHz Pentium II/512KB Cache							\$1,296
DISK: 2GB Ultra SCS1 3.5 Internal	•							\$144
CDROM: Twelve Speed								\$1,008
ETHERNET: 100Mbit/sec, PCI 32-bit ETH101007-PCI 1 \$107 6 \$642 ETHERNET: 100Mbit/sec, PCI 32-bit, Quad SF1001-ET4 1 \$1,011 3 \$3,033 \$\$ MONITOR:15-inch Color EVG200-E 1 \$3,00 3 \$9,000 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 \$3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 \$3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$3,00 \$3 \$900 KEYBD: 104 Key Spacesaver PCK104-SkB 1 \$1,00 Key Spacesaver PCK104-SkB 1 \$1,00 Key Spaces PCK104-SkB 1				-				\$864
### STHERNET: 100Mbit/sec, PCI 32-bit, Quad								\$360
MONITOR:15-inch Color								•
Notes: Note in the level: Standard Performance-Gold. Notes:				1				\$720
MOUSE: 2 Button PS2 PWM1-PS2 1 \$25 3 \$35.00 \$20,682 \$5.00 \$5.00 \$20,682 \$5.00				1				
Subtotal	* *							
Client Software Client Software Client Software Microsoft Windows NT Server 4.0, incl 5 CALs Microsoft Windows NT Server 4.0, incl 5 CALs Microsoft Visual C++ 32-bit edition (subscription) Microsoft 2	INOUSE. 2 BUILDIT PS2	PWWI-P52		1	\$25			\$5,328
Microsoft Windows NT Server 4.0, incl 5 CALs Microsoft Visual C++ 32-bit edition (subscription) Microsoft Visual C++ 32-	Client Software						Ψ20,002	φυ,υ20
Microsoft Visual C++ 32-bit edition (subscription) Microsoft 2 \$499 1 \$499 5 DEFINITION OF Functional Services 6.3 for NT BEA 3 \$3,000 3 \$9,000 \$6.00 Subtotal \$11,926 \$6.00 Total \$66,713 \$900 Subtotal \$66,713 \$900			Microsoft	2	\$200	3	\$2 427	\$0
Subtotal	,							\$0
Subtotal \$11,926 \$6,000 \$11,926 \$6,000 \$11,926 \$6,000 \$11,926 \$6,000 \$11,926 \$, , ,							\$6,750
Step Connectivity Step State	767.22 6 6676 7 G.163.67.61 667.71666 676 767.717		527.	Ü	φο,σσσ			\$6,750
Ethernet Hub, 8-Port 100TX TrueFast + 10% spares NX-H8TX Netlux 4 \$229 3 \$687 spare Step of 100TX TrueFast + 10% spares DEH2924 DataComm W/H 5 \$33 1961 \$64,713 spare Step of 100TX TrueFast + 1-Port BNC + 10% spares DEH2924 DataComm W/H 5 \$33 1961 \$65,400 Subtotal	User Connectivity						Ţ::, 0=0	40,.00
Ethernet Hub, 8-Port 10Base-T + 1-Port BNC + 10% spares DEH2924 DataComm W/H 5 \$33 1961 \$64,713 spares Subtotal \$65,400 Total \$65,400 Total \$462,153 \$55, Western Micro discount 1 \$(\$53,374)\$ Notes: 1. HW Maintenance - 1st 36 months included in Unisys product costs. The next 24 months are at the 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 \$100 \text{ par Cost of Ownership } \$463,90 \text{ TPC-C Throughput } \$17,700. \$26.	•	NX-H8TX	Netlux	4	\$229	3	\$687	spared
Subtotal \$65,400 Total \$462,153 \$55,700 Western Micro discount 1 \$(\$53,374) Notes: 1. HW Maintenance - 1st 36 months included in Unisys product costs. The next 24 months are at the 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 \$100 months of the subtraction of the	Ethernet Hub, 8-Port 10Base-T + 1-Port BNC + 10% spares	DEH2924						spared
Western Micro discount Notes: 1. HW Maintenance - 1st 36 months included in Unisys product costs. The next 24 months are at the 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 1. (\$53,374) Five Year Cost of Ownership \$463,9 TPC-C Throughput 17,700. \$\$/tpmC\$ \$26.	•					Subtotal		\$0
Notes: 1. HW Maintenance - 1st 36 months included in Unisys product costs. The next 24 months are at the 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 Five Year Cost of Ownership TPC-C Throughput 17,700. \$463,9 TPC-C Throughput \$17,700. \$26.						Total	\$462,153	\$55,179
Notes: 1. HW Maintenance - 1st 36 months included in Unisys product costs. The next 24 months are at the 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 Five Year Cost of Ownership \$463,9 TPC-C Throughput 17,700. \$700.	Western Micro discount			1_				
are at the 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 Five Year Cost of Ownership TPC-C Throughput \$7,700. \$7,700.	Notes:							
2. All Microsoft maintenance is covered by the maintenance cost of Microsoft SQL Server. TPC-C Throughput 17,700. \$/tpmC \$26.	1. HW Maintenance - 1st 36 months included in Unisys product c	osts. The next 24 months						
3. 10% or minimum 2 spares are added in place of onsite service (products have a five \$/tpmC	are at the level: Standard Performance-Gold.			Fiv	e Year C	Cost of Own	ership	\$463,958
	2. All Microsoft maintenance is covered by the maintenance cost	of Microsoft SQL Server.		TP	C-C Thr	oughput		17,700.43
year return-to-vendor warranty)	3. 10% or minimum 2 spares are added in place of onsite service	(products have a five		\$/t	pmC			\$26.21
•	year return-to-vendor warranty)							

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.

The benchmark results and test methodology were audited by Richard Gimarc of Performance Metrics, Inc.

NUMERICAL OUANTITIES SUMMARY Unisys Aquanta QS/2 Server

Microsoft SQL Server Enterprise Edition 7.0

MQTh, Computed Maximum Qualified Throughput:

17700.43

% throughput difference, reported & reproducibility runs:

0.35%

Transaction Mix

New Order	44.83%
Payment	43.11%
Delivery	4.02%
Stock-Level	4.03%
Order-Status	4.01%

Response Times

Transaction	Average	Maximum	90th %ile	
New-Order	0.45	5.78	0.63	
Payment	0.28	5.81	0.41	
Delivery	0.13	1.80	0.16	
Stock-Level	2.64	6.27	3.24	
Order Status	0.33	3.17	0.47	
Menu	0.12	3.50	0.13	
Delivery (Deferred)	0.62	5.14	0.93	

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	18.01/12.08	18.06/120.41
Payment	3.00/0	3/12.05	3.08/120.41
Delivery	2.00/0	2/5.06	2.03/50.7
Stock-Level	2.00/0	2/5.05	2.03/50.7
Order-Status	2.00/0	2/10.14	2.03/93.61

Test Duration

Ramp up time	64 minutes
Measurement interval (M)	30 minutes
Transactions (all types) completed during measurement interval	1184569
Ramp-down time	29 minutes

Checkpointing:

Number of checkpoints	1
Checkpoint interval	30 minutes