

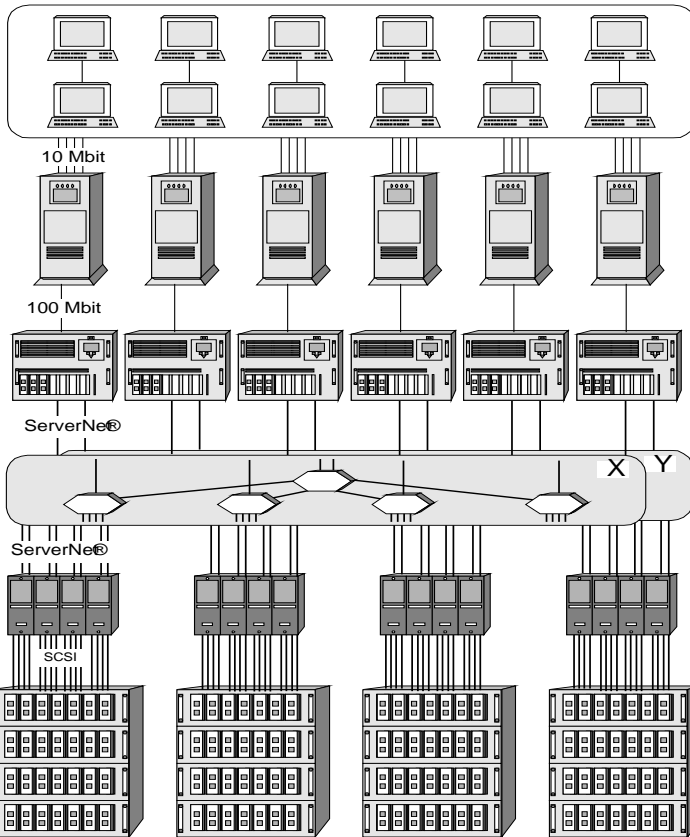


**Tandem ServerNet® Cluster with ProLiant 6500 6/200-1 Servers (c/s)**

**TPC-C Rev. 3.32**

Report Date: 9-Apr-1998

Total System Cost	TPC-C Throughput	Price Performance	Availability Date	
<b>\$1,958,088</b>	<b>27,383.40 tpmC</b>	<b>\$71.50 per tpmC</b>	<b>30-Sep-1998*</b>	
Processors	Database Manager	Operating System	Other Software	Users
Six 4-way 200 MHz Pentium®Pro	Oracle8 Enterprise Edition Version 8.0.4	Windows NT Enterprise Edition 4.0	NonStop Tuxedo CS for NT Server	<b>23,520</b>



- Users**  
23,520 PCs  
4 10Mbit LAN Segments per Client  
980 Users per LAN Segment
- Clients**  
6 Compaq Professional Workstation 6000  
Dual 300MHz Pentium® II Processors
- Servers**  
6 Compaq ProLiant 6500-1 4-Way  
200MHz Pentium® Pro Processors  
18 Compaq 4.3 GB SCSI-2 Disks
- Interconnect & Shared Disk Interface**  
10 Six-Port  
Tandem ServerNet® Switches
- Remote PCI Expansion Buses**  
16 Interlogic PCI Slide Modules  
16 Tandem ServerNet I/O Adapters  
60 QLogic Fast SCSI Adapters
- Disk Storage**  
48 Compaq ProLiant F1 Storage Systems  
6 Compaq ProLiant F2 Storage Systems  
147 Compaq 4.3 GB SCSI-2 Disks  
237 Compaq 9.1 GB SCSI-2 Disks

System Components	Clients		Servers			
	Qty	Description	Qty	Description		
Nodes	6	Client systems	6	Server Systems		
System	Per Node	1	Professional Workstation 6000	Per Node	1	ProLiant 6500-1
Processors		2	300 MHz Pentium®II, 512 KB L2 Cache		4	Pentium®Pro 200 MHz, 1 MB L2 Cache
Processor Memory		384 MB			3 GB	
Disk Controllers		1	Integrated Ultra SCSI Controller		60	QLogic Fast SCSI Adapter
PCI Expansion Bus			16	Interlogic Remote PCI Bus Extender		
Disk Drives	12	4.3 GB SCSI-2 Drive	165 237	4.3 GB SCSI-2 Drive 9.1GB SCSI-2 Drive		
Total Disk Storage	24 GB		2,716 GB			
Tape Drives			1	4/8 DAT Drive		

\* ServerNet Remote PCI I/O Package available September 30, 1998

Compaq Computer Corporation	Tandem ServerNet Cluster with			TPC-C REV 3.32			
	ProLiant 6500 6/200-1 Servers (c/s)			Report Date:	9-Apr-98		
Description	Part Number	Third Party	Unit Price	Qty	Extended Price	5 yr. Maint. Price	
<b>Server Hardware</b>							
ProLiant 6500 6/200-1 (1MB L2 Cache)	241750-001		17,033	6	102,197		
10/100 Ethernet Controller							
2 x Integrated Fast-SCSI-2 Controller							
CD-ROM, SmartStart							
ProLiant Warranty Upgrade	276535-000		1,075	6		6,450	
Onsite 5x8 4 Hr Response Maintenance						50,986	
6/200 - 1MB Processor Expansion Kit	296372-B21		4,945	18	89,010		
512 MB DIMM Kit (2x256 MB)	306541-B21		3,376	36	121,542		
Rack-mount ProLiant Storage System - F1	272800-001		1,712	48	82,182		
Rack-mount ProLiant Storage System - F2	272800-002		2,009	6	12,053		
ProLiant Storage Warranty Upgrade	276537-001		430	54		23,220	
4.3 GB Pluggable SCSI-2 Drive	272577-001		789	165	130,167		
9.1 GB Pluggable SCSI-2 Drive	199882-001		1,186	237	281,068		
Q-Logic SCSI Controller	QLA1040	QLogic	4	229	60	13,740	14,814
Interlogic Slide Module w/PCI Backplane + 2 spares	SM5058139-1	Interlogic	3	535	18	9,630	2,700
Interlogic Rack Mount Slide Chassis	SC500-00	Interlogic	3	225	4	900	Incl. Above
ServerNet Remote PCI I/O Package	SVNRIO1			65,920	1	65,920	3,800
ServerNet Ship I/O Cards	Incl. Above			1,995	16	0	Incl. Above
ServerNet Cables - 4M	Incl. Above			100	52	0	Incl. Above
ServerNet Switch - 6 Port	Incl. Above			3,400	10	0	Incl. Above
ServerNet PCI Adapter	N3106			995	6	0	Incl. Above
Compaq VGA V50 Color Monitor	264150-001		268	6	1,608		
Compaq 42U Rack	165753-001		1,712	9	15,409	1,849	
4/8GB DAT Drive	295353-B21		885	1	885		
				<b>Subtotal</b>	<b>926,311</b>	<b>103,820</b>	
<b>Server Software</b>							
Oracle8 Enterprise Edition 8.0.4		Oracle	1	333,480	1	333,480	333,480
ProLiant 6500 Parallel DB Cluster Kit V2	OCL6500			6,000	6	36,000	6,000
Microsoft Windows NT Enterprise v. 4.0		Microsoft	2	3,999	6	23,994	10,475
Microsoft Visual C++ and Subscription Service		Microsoft	2	499	1	499	Incl. Above
MKS Toolkit for NT				499	6	2,994	5 Yr WTY
				<b>Subtotal</b>	<b>396,967</b>	<b>349,955</b>	
<b>Client Hardware</b>							
Professional Workstation 6000 Mod-6300	269630-002		3,688	6	22,128	8,188	
32-Megabyte EDO DIMM Kit (Note 2)	271907-001		198	36	7,128	5,712	
Netelligent 10/100 UTP PCI NIC	169845-001		81	24	1,944		
Compaq VGA V50 Color Monitor	264150-001		268	6	1,608		
				<b>Subtotal</b>	<b>32,808</b>	<b>13,900</b>	
<b>Client Software</b>							
Microsoft Windows NT Server v. 4.0		Microsoft	2	809	6	4,854	Incl. Above
NonStop TUXEDO CS for NT Servers, 1-2 Nodes	SN64V1A			3,000	6	18,000	13,500
				<b>Subtotal</b>	<b>22,854</b>	<b>13,500</b>	
<b>User Connectivity</b>							
COMPEX MicroHub 5 PORT - 100TX Hub	DEH2604	DataComm	5	181	8	1,448	See Note 1
LANTech 8-port 10BaseT Workgroup Hub	DEH2948	DataComm	5	29.25	3300	96,525	See Note 1
				<b>Subtotal</b>	<b>97,973</b>	<b>0</b>	
				<b>Total</b>	<b>\$1,476,913</b>	<b>\$481,175</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 assumptions 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 benchmark pricing 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: \$1,958,088</b>			
				<b>tpmC Rating: 27,383.40</b>			
				<b>\$ / tpmC: \$71.50</b>			
(Pricing: 1 = Oracle 2 = Microsoft 3 = Interlogic 4 = QLogic 5 = Data Comm Warehouse) - Note 1: 5 Year warranty with 10% Spares, Note 2: Total of 60 units used (36 priced, 24 taken from base 6500 units)							
Note: The benchmark results and test methodology were audited by Tom Sawyer of Performance Metrics, Inc.							

## Numerical Quantities Summary

**MQTH, Computed Maximum Qualified Throughput:**

**27,383.40 tpmC**

% throughput difference, reported & reproducibility runs

0.31% (27,297.70 tpmC)

<b>Response Times (in seconds)</b>	<b>Average</b>	<b>90%</b>	<b>Maximum</b>
New-Order	1.68	2.88	142.92
Payment	1.37	2.39	91.40
Order-Status	1.34	2.25	34.14
Delivery (interactive portion)	0.87	1.40	32.84
Delivery (deferred portion)	0.99	1.52	17.61
Stock-Level	1.72	2.70	35.05
Menu	0.53	0.85	38.35

### **Transaction Mix, in percent of total transaction**

New-Order	44.60%
Payment	43.16%
Order-Status	4.08%
Delivery	4.08%
Stock-Level	4.08%

### **Emulation Delay (in seconds)**

	<b>Resp.Time</b>	<b>Menu</b>
New-Order	0.1	0.1
Payment	0.1	0.1
Order-Status	0.1	0.1
Delivery (interactive)	0.1	0.1
Stock-Level	0.1	0.1

### **Keying/Think Times (in seconds)**

	<b>Min.</b>	<b>Average</b>	<b>Max.</b>
New-Order	18.00/0.00	18.01/12.05	18.04/128.41
Payment	3.00/0.00	3.01/12.06	3.03/128.40
Order-Status	2.00/0.00	2.01/10.06	2.03/96.40
Delivery (interactive)	2.00/0.00	2.01/5.05	2.03/49.30
Stock-Level	2.00/0.00	2.01/5.07	2.03/53.50

### **Test Duration**

Ramp-up time	60 minutes
Measurement interval	116 minutes
Transactions (all types) completed during measurement interval	7,122,752
Ramp down time	5 minutes

### **Checkpointing**

Number of checkpoints	4
Checkpoint interval	29 minutes