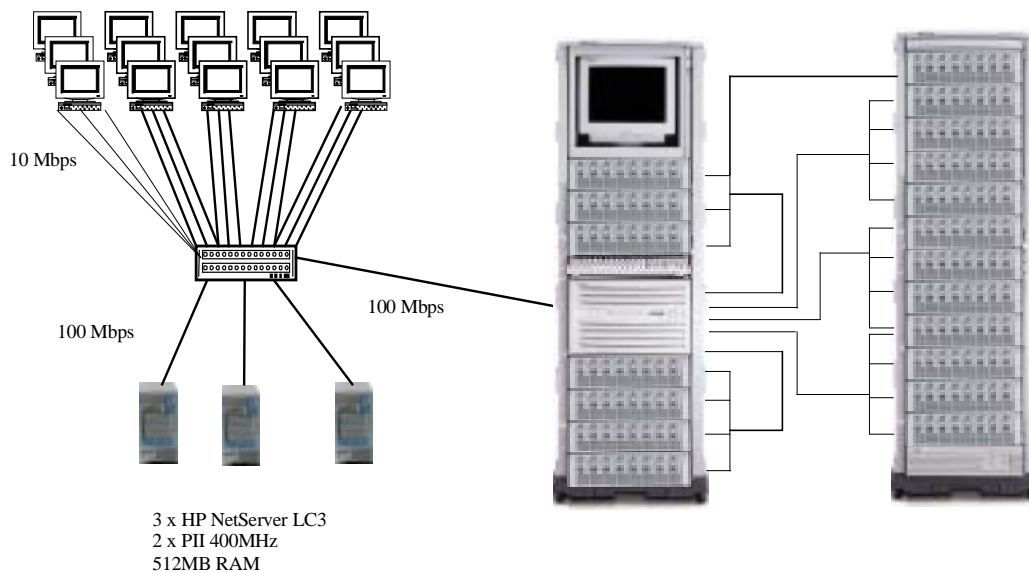
	<h1>HP NetServer LH 4r</h1> <h2>Client/Server</h2>			TPC-C Revision 3.4
	<b>Total System Cost</b> <b>\$440,047</b>	<b>TPC Throughput</b> <b>19050.17 tpmC</b>	<b>Price/Performance</b> <b>\$23.10 per tpmC</b>	<b>Report Date</b> January 15, 1999
<b>Processors</b> 4 Intel Pentium II Xeon 450MHz 1 Mbyte L2	<b>Database Manager</b> Microsoft SQLServer 7.0 Enterprise Edition	<b>Operating System</b> Microsoft NT 4.0 Enterprise Edition	<b>Other Software</b> Microsoft Visual C++ TUXEDO Transaction Monitor	<b>Number of Users</b> 15600

Total of 15,600 PCs

**HP NetServer LH 4r**  
 4 x Pentium II Xeon 450MHz/1MB  
 4 GB RAM  
 5 x Adaptec AAC364

**Storage:**  
 HP NetServer Rack Storage /8



System Components	Server		Each Client	
	Qty	Type	Qty	Type
<b>Processors</b>	4	450MHz Intel Pentium II Xeon	2	400MHz Pentium II
<b>Cache Memory</b>	each	1 Mbyte L2 cache	each	512kbyte L2 Cache
<b>Memory</b>	4	Gbyte	512	Mbyte
<b>Disk Controllers</b>	5	Adaptec AAC364	1	HP SCSI-2 Controller
<b>Disk Drives</b>	64	HP Hot-swap 9Gbyte 10krpm SCSI	1	4 Gbyte disk
	79	HP Hot-swap 9 Gbyte 7200rpm SCSI		
	12	HP Hot-swap 9Gbyte Ultra2 10krpm SCSI		
<b>Total Storage</b>	1.31	TB		
<b>Tape Drives</b>	1	HP Surestore DAT24i		
<b>Terminals</b>	1	Console Terminal	1	Console Terminal



# HP NetServer LH 4r

TPC-C Rev 3.4

Report Date: January 15, 1999

Description	Part Number	Brand	Price Key	Unit Price	Qty	Extended Price	Maint. Price
HP NetServer LH4	D6972A	HP	1	9,865	1	9865	
Pentium II Xeon 450MHz 1MB Cache	D6121A	HP	1	3985	3	11955	
1Gbyte DIMM kit	D6114A	HP	1	4285	4	17140	
Rkmt HP Ultra VGA 1280 17" Display	D2818A	HP	1,2	213	1	213	168
HP NetServer mini-DIN keyboard and mouse	D4950B/C3751B	HP	1	81	1	81	
HP 9.1 GB 10K HotSwap Wide Ultra2 SCSI Disk	D6107A	HP	1	1030	12	12360	
HP NetServer 10/100TX PCI LAN Adapter	D5013A	HP	1	83	1	83	
HP Keyboard Rack Mount Kit	E7713A	HP	1	155	1	155	
2.0 Meter Rack w/side panels,rear door+fan+pdu	J1487B/E4471A/E7	HP	1	1595	2	3190	
HP 19" Plain Shelf, for racks	E3666A	HP	1	65	1	65	
HP SureStore DAT24i Internal Tape Drive	C1555C	HP	1	967	1	967	
HP NetServer LH4 Warranty Upgrade	H5518A	HP	1,2				2959
<b>Server Hardware Subtotal</b>						<b>56074</b>	<b>3127</b>
HP NetServer Rack Storage/8+spares	D4902A	HP	1	2098	21	44058	
HP NetServer Rack Storage/8 Support	D4902A+02A	HP	2				20160
HP 9GB, 7200rpm Hot-swap disk module+spares	D4289A	HP	1	822	87	71514	
HP 9GB, 10krpm Hot-swap disk module+spares	D6019A	HP	1	1030	71	73130	
Adaptec aac364 DAC 32MB	AAC-364	Adaptec	4	2695	7	18865	1750
HP SCSI Cable 2.5m with offset connector	D6020A	HP	1	83	22	1826	
<b>Storage Subtotal</b>						<b>209393</b>	<b>21910</b>
Microsoft SQL Server 7.0 Enterprise Edition		MS	3	28999	1	28999	10475
Microsoft Windows NT Server 4.0 Enterprise Edition	Z85092	MS	1	3330	1	3330	
MKS Toolkit	323795	MKS	1	265	1	265	
<b>Server Software Subtotal</b>						<b>32594</b>	<b>10475</b>
HP Netserver LC 3	D6126T	HP	1	2475	3	7425	
HP Netserver LC 3 Warranty Upgrade	H5519A	HP	1,2				5157
LC 3 Pentium II 400-Mhz	D6092A	HP	1	1005	3	3015	
128MB DIMMs for LC 3	D6098A	HP	1	435	12	5220	
HP NetServer 10/100TX PCI LAN Adapter	D5013A	HP	1	83	3	249	
HP Ultra VGA 1280 17" Display	D2818A	HP	1,2	213	3	639	504
<b>Client Hardware Subtotal</b>						<b>16548</b>	<b>5661</b>
Microsoft Windows NT Server 4.0	Z85093	MS	1	568	3	1704	
Microsoft Visual C++	716856	MS	1	449	1	449	
Tuxedo Run Time		BEA	5	3000	3	9000	6750
<b>Client Software Subtotal</b>						<b>11153</b>	<b>6750</b>
HP Procurve Switch 2400M	J4122A	HP	1,2	1195	2	2390	1680
LANTech 8-port 10baseT hub (8+1 ports)	Z85094	Lantech	1	29	2148	62292	
<b>Connectivity Subtotal</b>						<b>64682</b>	<b>1680</b>
<b>Total</b>						<b>\$390,444</b>	<b>\$49,603</b>

Notes: Price key: 1=Software House, 2=Price from HP Corporate Price list

3=Microsoft, 4 = Adaptec, 5=BEA

Audited by Tom Sawyer Performance Metrics, Inc.

**5-yr Cost of Ownership: \$440,047**

**tpmC: 19050.17**

**\$/tpmC: 23.10**

Prices used in TPC benchmarks reflect 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 specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you.

## Numerical Quantities Summary for HP NetServer LH4r

**MQTH, Computed Maximum Qualified Throughput**

**19050.17 tpmC**

### Response Times (in seconds)

	90th %-ile	Maximum	Average
New-Order	1.06s	5.99s	0.61s
Payment	0.83s	4.62s	0.42s
Order-Status	0.88s	2.59s	0.49s
Delivery (interactive portion)	0.57s	2.37s	0.27s
Delivery (deferred portion)	1.21s	4.19s	0.75s
Stock-Level	4.81s	8.83s	3.56s
Menu	0.60s	4.65s	0.25s

Response time delay added for emulated components 0.1 seconds

### Transaction Mix, in percent of total transactions

New-Order	44.85%
Payment	43.09%
Order-Status	4.02%
Delivery	4.04%
Stock-Level	4.00%

### Keying/Think Times

	Keying Time			Think Time		
	Min	Avg	Max	Min	Avg	Max
New-Order	18.02s	18.03s	18.2s	0.01s	12.16s	142.72s
Payment	3.01s	3.02s	3.19s	0.01s	12.17s	170.04s
Order-Status	2.01s	2.02s	2.18s	0.01s	10.18s	112.11s
Delivery (interactive)	2.01s	2.02s	2.18s	0.01s	5.13s	63.12s
Stock-Level	2.01s	2.02s	2.18s	0.01s	5.14s	52.96s

### Test Duration

Ramp up time	93.7 minutes
Measurement interval	29 minutes
Transactions during measurement interval	1231662
Ramp down time	7.3 minutes

### Checkpointing

Number of checkpoints in measurement interval	1
Checkpoint Interval	29 minutes

### Reproducibility Run

Throughput	18995.21 tpmC
Relative to MQTH	-0.29%