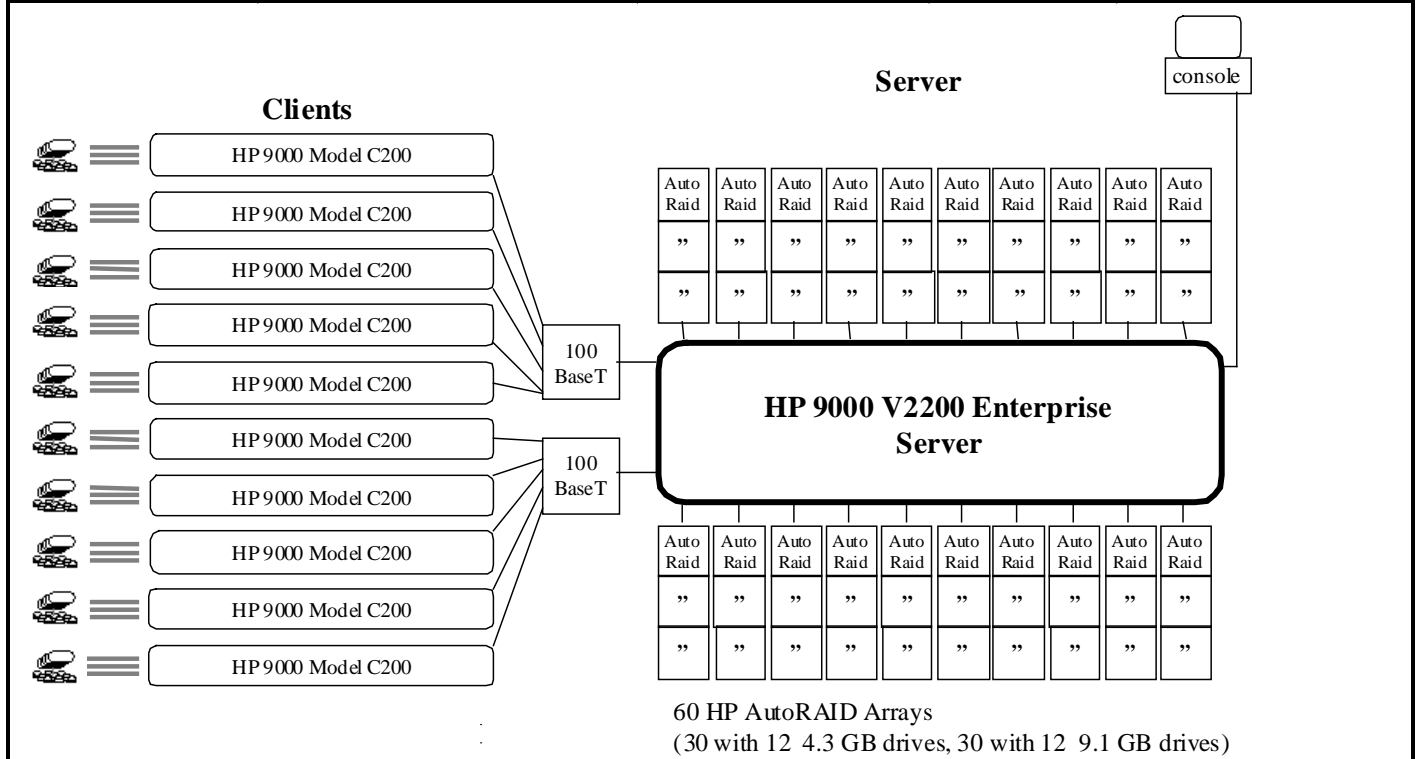
 <b>HEWLETT® PACKARD</b>	<b>HP 9000 V2200 Enterprise Server</b> <b>Client/Server with 10 C200 front-ends</b>			TPC-C Revision 3.4
				Report Date: February 26, 1999
Total System Cost	TPC Throughput	Price/Performance		Availability Date
<b>\$4,219,345</b>	<b>40,794.36 tpmC</b>	<b>\$103.43/tpmC</b>		<b>April 20, 1999</b>
Processors	Database Manager	Operating System	Other Software	Number of Users
<b>16 PA-RISC 8200 200MHz</b>	<b>Oracle8 Enterprise Database Server v8.1.5</b>	<b>HP-UX 11.0 64-bit Extension Pack 9812</b>	<b>TUXEDO 6.4</b>	<b>33,000</b>



System Components	Server (V2200)		Each Client (10 C200s)	
	Qty	Type	Qty	Type
<b>Processors</b>	16	200MHz PA-RISC 8200	1	200MHz PA-RISC 8200
<b>Cache Memory</b>	each	2 MB I-cache, 2 MB D-cache	each	512 KB I-cache/1 MB D-cache
<b>Memory</b>	16	GB	1	1536 MB
<b>Disk Controllers</b>	20	HP-PCI FWD SCSI-2	1	Ultra Wide SCSI
<b>Disk Drives</b>	30	HP AutoRaid Arrays with 12 9.1 drives	1	4 GB disk
	30	HP AutoRaid Arrays with 12 4.3 drives		
<b>Total Storage</b>	3655	GB		
<b>Tape Drives</b>	1	DDS Storage System		
<b>Terminals</b>	1	Console Terminal	1	Console Terminal



**HEWLETT®  
PACKARD**

**HP 9000 V2200  
Enterprise Server**

TPC-C Rev 3.4

Report Date: February 26, 1999

Description	Part Number	Brand	Price Key	Unit Price	Qty	5 Year Price	Main.Price
<b>Server Hardware</b>							
HP 9000 V2200 Enterprise Server	A3726A			1	85,400	1	85,400 84,960
Add1 200 MHz PARISC 8200 CPUs	A3727A Opt. 0D1			1	17,500	16	280,000 70,272
System Mgmt. Station	A4802B			1	8,036	1	8,036
Memory carrier	A3730A			1	6,300	4	25,200
128MB DIMM for a total of 1 GB	Option UTC			1	11,200	16	179,200
Six slot PCI Card Cage	A3729A, Opt. 0D1			1	4,200	3	12,600
PCI FWD SCSI-2 Card	A4800A, Opt. 0D1			1	840	20	16,800
PCI 100BT LAN Adapter	A3738A Opt 0D1			1	606	2	1,212
4GB DDS-2 DAT Drive	A3183A, Opt 0DZ			1	1,156	1	1,156
PCI 64-port Mux card	J3593A Opt. 0D1			1	1,047	1	1,047
16 port RS232 DB25 port module	J2485A			1	616	1	616
25 ft cable	J3595A			1	105	1	105
5.5 kVA UPS	A3589A Opt. 002			1	7,000	1	7,000 194
1.8kVA HP UPS Rackmount	A2997A Opt. 002			1	2,310	30	69,300 5,190
2.0m Field Integrated Cabinet	C2787A			1	1,400	18	25,200
Auto Raid Array Model 12H	A3700AZ			1	4,270	60	256,200 287,880
Two 96 MB controllers with Auto Raid	Opt. 203			1	9,200	60	552,000
Twelve 4.3 GB disk modules	Option 112			1	10,080	30	302,400
Twelve 9.1 GB disk modules	Option 132			1	15,540	30	466,200
0.9m 68-pin high density male connec.	Option 801			1	84	40	3,360
2.5m HDTS68 to HDTS68 Cable	C2924A			1	97	20	1,940
					<b>Subtotal</b>		<b>2,294,972 448,496</b>
<b>Server Software</b>							
Oracle Server	Runtime	Oracle		2	512,100	1	512,100 512,100
HP-UX 11.0 Sys Media, CD-ROM	B3920EA, Opt AAF			1	364	1	364
					<b>Subtotal</b>		<b>512,464 512,100</b>
<b>Client Hardware</b>							
Hewlett Packard Model C200 Workstation	A4318A			1	9,100	10	91,000 52,170
256 MB ECC memory module	A4517A			1	1607	60	96420
Console	C1064GX			1	377	10	3,770 1,080
4 GB ultra SCSI disk	A4569A			1	700	10	7,000
100 Base T PCI LAN Adapter, 4 spares	B5509BA			1	242	40	9,680 2,360
					<b>Subtotal</b>		<b>207,870 55,610</b>
<b>Client Software</b>							
HP C/ANSI C Compiler	B3901BA, Option AH0			1	1,103	1	1,103 980
BEA Tuxedo 6.3		Bea Sys.		3	3,000	10	30,000 20,250
					<b>Subtotal</b>		<b>31,103 21,230</b>
<b>User Connectivity</b>							
(8+1) port 10Mbps Ethernet Hub, 413 spares	DEH2924	Micro W.		4	28.95	4543	131,520
Cisco 100BT Hub WS-C112T, 2 spares	WS-C112T			1	995	4	3,980
					<b>Subtotal</b>		<b>135,500 0</b>
					<b>Other discounts*</b>		<b>0 \$0</b>
					<b>Total</b>		<b>3,181,909 1,037,436</b>

Notes: 1=Sun Data, 2=Oracle  
3=BEA Systems, 4=Micro Warehouse

Audited by Tom Sawyer for Performance Metrics, Inc.

<b>Five Year Cost of Ownership:</b>	<b>\$4,219,345</b>
<b>tpmC Rating:</b>	<b>40,794.36</b>
<b>\$/tpmC:</b>	<b>\$103.43</b>

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. Thank you.

# Numerical Quantities Summary for HP 9000 V2200 Enterprise Server

**MQTH, Computed Maximum Qualified Throughput**

**40,794.36 tpmC**

**Response Times (in seconds)**

	90th %-ile	Maximum	Average
New-Order	1.77s	10.02s	0.71s
Payment	1.60s	9.11s	0.60s
Order-Status	1.66s	7.59s	0.64s
Delivery (interactive portion)	0.24s	5.52s	0.14s
Delivery (deferred portion)	1.94s	5.93s	0.86s
Stock-Level	2.15s	7.60s	0.90s
Menu	0.10s	7.44s	0.015s

**Transaction Mix, in percent of total transactions**

New-Order	44.82%
Payment	43.04%
Order-Status	4.04%
Delivery	4.05%
Stock-Level	4.06%

**Keying/Think Times**

	Keying Time			Think Time		
	Min	Avg	Max	Min	Avg	Max
New-Order	18.02s	18.03s	18.04s	0.01s	12.15s	171.12s
Payment	3.01s	3.02s	3.04s	0.01s	12.09s	164.07s
Order-Status	2.01s	2.02s	2.03s	0.01s	10.09s	115.59s
Delivery (interactive)	2.01s	2.02s	2.03s	0.01s	5.05s	79.61s
Stock-Level	2.01s	2.02s	2.03s	0.01s	5.07s	55.86s

**Test Duration**

Ramp up time	76.91 minutes
Measurement interval	25 minutes
Transactions during measurement interval	2,275,356
Ramp down time	13.42 minutes

**Checkpointing**

Number of checkpoints in measurement interval	1
Checkpoint Interval	25 minutes

**Reproducibility Run**

Throughput	40,480.48 tpmC
Relative to MQTH	-0.77%