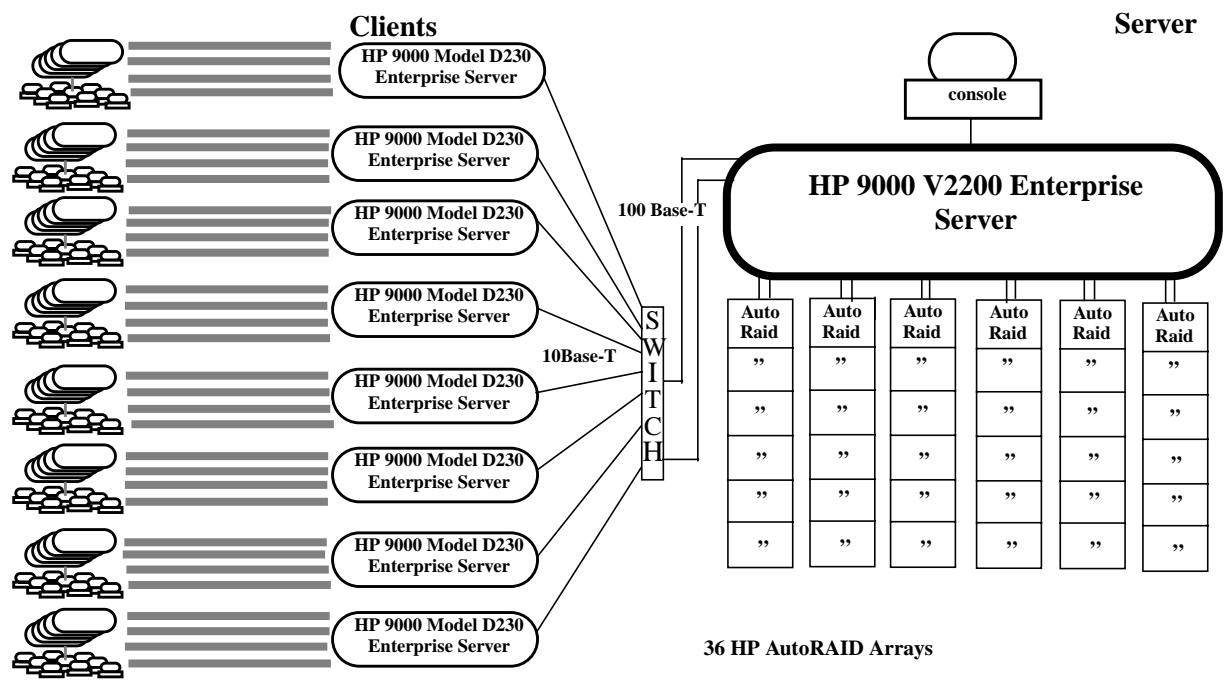


<b>Hewlett-Packard Co.</b>	<b>HP 9000 V2200 Enterprise Server Client/Server with 8 D230 front-ends</b>			TPC-C® Rev 3.3.2
				Report Date: September 15, 1997
Total System Cost	TPC-C® Throughput		Price/Performance	Availability Date
<b>\$3,717,105</b>	<b>39,469.47 tpmC®</b>		<b>\$94.18 / tpmC®</b>	<b>March 1, 1998</b>
Processors	Database Manager	Operating System	Other Software	Number of Users
16 PA-RISC 8200 200 MHz	Sybase Adaptive Server Enterprise 11.5 EBF 7532	HP-UX 11.00 64-bit	TUXEDO Transaction Monitor 4.2.2	32,640



System Components	Server (V2200)		Each Client of 8 (D230)	
	Qty	Type	Qty	Type
Processors	16 each	200 MHz PA-RISC 8200 2 MB I-cache, 2 MB D-cache	1	160 MHz PA-RISC 7300LC 1 MB combined L2 cache
Memory	16	GB	1	1 GB
Disk Controllers	12	HP-PCI FWD SCSI-2	1	HP-HSC
Disk Drives	36	HP AutoRAID Arrays	1	4 GB Disk
Total Storage (GB)	2,439	GB		
Tape Drives	1	DDS Storage System		
Terminals	1	Console terminal	1	Console terminal

Hardware and Software Pricing

Description	Part Number	3d Party		Unit Price	Qty.	Extended Price	5 Year Maint. \$
		Brand	\$				
<b>Server Hardware</b>							
HP 9000 V2200 Enterprise Server	A3726A		1	71,958	1	71,958	79,920
Additional PA RISC 8200 Processors	A3727A, Opt. 0D1		1	18,250	16	292,000	50,458
Hardware & Software Support, Year 1	Opt. 0S3		1				13,104
System Mgmt. Station	A4802A		1	8,380	1	8,380	
Memory board pair	A3730A		1	6,570	4	26,280	
128MB DIMM for a total of 1 GB	Opt. UTC		1	35,880	16	574,080	
Six slot PCI Card Cage	A3729A, Opt. 0D1		1	4,380	3	13,140	
PCI FWD SCSI-2 Card	A4800A, Opt. 0D1		1	945	12	11,340	
PCI 100 Base T LAN Adapter	A3738A Opt. 0D1		1	653	2	1,306	
4GB DDS-2 DAT Drive	A3183A, Opt. 0DZ		1	1,205	1	1,205	
HP-UX 11.0 Sys Media, CD-ROM	B3920EA, Opt. AAF		1	365	1	365	
PCI 64-port Mux card	J3593A Opt. 0D1		1	1,091	1	1,091	
16 port RS232 DB25 port module	J2485A		1	642	1	642	
25 ft. cable	J3595A		1	110	1	110	
5.5 kVA UPS	A3589A Opt. 002		1	7,300	1	7,300	2,700
1.3kVA HP UPS Rackmount	A2996A Opt. 002		1	1,825	9	16,425	1,555
1.6m Field Integrated Cabinet	C2786A		1	1,318	9	11,862	
Auto Raid Array Model 12H	A3700AZ		1	3,504	36	126,144	171,072
Two 96 MB controllers with Auto Raid	Opt. 203		1	11,972	36	430,992	
Twelve 4.3 GB disk modules	Opt. 112		1	11,136	13	144,768	
Twelve 9.1 GB disk modules	Opt. 132		1	17,400	23	400,200	
Hardware & Software Year 1-3	3Y3		1				94,647
0.9m 68-pin high density male connector	Opt. 801		1	88	54	4,752	
2.5m HDTS68 to HDTS68 Cable	C2924A		1	102	18	1,836	
<b>Subtotal</b>						<b>2,146,176</b>	<b>413,456</b>
<b>Server Software</b>							
Sybase Adaptive Server	Runtime	Sybase	2	295,000	1	295,000	244,316
Sybase development		Sybase	2	9,600	1	9,600	
Sybase open client		Sybase	2	795	1	795	
Sybase discount		Sybase	2			-30,540	
<b>Subtotal</b>						<b>274,855</b>	<b>244,316</b>
<b>Client Hardware</b>							
Hewlett Packard 9000 Model D230 Client	A3574A		1	6,899	8	55,192	11,059
Hardware & Software Support, Year 1	Opt. 0S3		1				7,997
1 MB cache	A3486A Opt. 0D1		1	1460	8	11680	
256 MB high-density memory	A3564A Opt. 0DZ		1	4234	32	135488	
Console	C1064GX		1	393	8	3,144	1,210
4 GB internal disk	A3643A Opt. 0D1		1	1,132	8	9,056	5,011
Combined 10baseT/100VG adapter card	A3402A Opt. 0D1		1	583	32	18,656	
<b>Subtotal</b>						<b>233,216</b>	<b>25,277</b>
<b>Client Software</b>							
HP C/ANSI C Compiler	B2412A, Opt. AH0			1,150	1	1,150	1,728
Support, Year 1	Opt. 0S3						158
BEA Tuxedo 4.2.2		Bea Sys.	3	9,000	8	72,000	54,000
<b>Subtotal</b>						<b>73,150</b>	<b>55,886</b>
<b>User Connectivity</b>							
(8+1) port 10Mbps Ethernet Hub, 409 spares	NX-H9+	Netlux	4	55	4497	247,335	
HP Advancestack 100Base T xevr, 2 spares	J3192B			199	3	597	
Advancestack Switch 208	J3175A			1,599	1	1,599	1,242
<b>Subtotal</b>						<b>249,531</b>	<b>1,242</b>
<b>Total</b>						<b>2,976,928</b>	<b>740,177</b>
<b>Notes:</b>				<b>Five Year Cost: \$3,717,105</b>			
1=Sun Data Corporation, 2=Sybase				<b>tpmC Rating: 39,469.47</b>			
3=BEA Systems, 4=Netlux				<b>\$/tpmC: \$94.18</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. 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.

Note: audited by Richard Gimarc of Performance Metrics, Inc.

## Numerical Quantities Summary for HP 9000 V2200 Enterprise Server

**MQTH, Computed Maximum Qualified Throughput** **39,469.47 tpmC®**

<b>Response Times (in seconds)</b>	<b>90th %-ile</b>	<b>Maximum</b>	<b>Average</b>
New-Order	2.16	24.52	1.21
Payment	2.04	24.27	1.07
Order-Status	2.15	22.53	1.17
Delivery (interactive portion)	0.26	4.81	0.17
Delivery (deferred portion)	2.42	22.65	1.43
Stock-Level	3.12	23.33	1.47
Menu	0.04	5.96	0.02

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

New-Order	44.79%
Payment	43.03%
Order-Status	4.07%
Delivery	4.07%
Stock-Level	4.04%

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

	<b>Keying Time</b>			<b>Think Time</b>		
	<b>Min.</b>	<b>Avg.</b>	<b>Max.</b>	<b>Min.</b>	<b>Avg.</b>	<b>Max.</b>
New-Order	18.02	18.03	18.06	0.02	12.14	156.78
Payment	3.02	3.03	3.06	0.02	12.07	165.65
Order-Status	2.02	2.03	2.05	0.02	10.10	108.48
Delivery (interactive)	2.02	2.03	2.06	0.02	5.07	60.90
Stock-Level	2.02	2.03	2.04	0.02	5.09	48.13

**Numerical Quantities Summary for  
HP 9000 V2200 Enterprise Server, continued**

**Test Duration**

Ramp-up time	30.75 minutes
Measurement interval	30 minutes
Transactions during measurement interval	2643758
Ramp down time	4 minutes

**Checkpointing**

Number of checkpoints in measurement interval	1
Checkpoint interval	30 minutes

<b>Reproducibility Run</b>	39,169.43 tpmC	- 0.76%
----------------------------	----------------	---------