



HP 9000 Superdome Enterprise Server

TPC-C Revision 5

Report Date:
August 26, 2002

Total System Cost	TPC Throughput	Price/Performance		Availability Date
\$6,621,072	423,414.41 tpmC	\$15.64/tpmC		August 26, 2002
Processors	Database Manager	Operating System	Other Software	Number of Users
64 PA-RISC 8700 875MHz	Oracle9i Database Enterprise Edition v9.2.0.1	HP-UX 11.i 64-bit	TUXEDO 8.0	333,200

Server



Client 1 - 3

100 Base T
Procurve Switch
1000 Base T



Fiber Channel



78 HP Surestore Virtual Array 7100
-675 36GB 15K RPM Disk Drives
-495 18GB 15K RPM Disk Drives



Client 4 -28



HP 9000 Superdome Enterprise Server

64 - 875MHz PA-RISC 8700
w/.75MB I-cache/1.5MB D-cache
256GB Memory

Clients - 3 hp workstation c3700
25 hp rp2470 servers

System Components	Server (HP 9000 Superdome Enterprise Server)		each Client (3 C3700 and 25 rp2470)	
	Qty	Type	Qty	Type
Processors	64	875MHz PA-RISC 8700	1	750MHz PA-RISC 8700
Cache Memory	each	.75 MB I-cache, 1.5MB D-cache	each	.75MB I-cache/1.5 MB D-cache
Memory	256	GB	1	3 GB for C3700 8GB for rp2470
Disk Controllers	26	PCI Fibre Channel 2X	1	Ultra2 SCSI LVD
Disk Drives	78	Surestore Virtual Array 7100 with 495 18GB 15K RPM and 675 36GB 15K RPM	1	18 GB disk for C3700 36GB disk for rp2470
Total Storage	15126.96	GB		
Tape Drives	1	DVD ROM		
Terminals	1	Console Terminal	1	Console Terminal



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Description	Part Number	Brand	Price Key	US List Price	Qty	Price	3Year Main.Price
Server Hardware							
Super Dome left chassis	A5201A, Opt. 101		1	205,840	1	205,840	268,626
Super Dome right chassis	A5202A, Opt. 101		1	218,435	1	218,435	
Memory module - 2 GB	A5198A, Opt. 0D1		1	14,000	128	1,792,000	
I/O enclosures	A4856A, Opt. 0D1		1	14,805	3	44,415	
PDCA Redundant Power Source	A5800A, Opt. 0D1		1	578	2	1,156	
Cell Board with 4 PA-8700 875MHz Processors	A6862A		1	10,080	16	161,280	
ICOD right to use processor	A6885A Opt. 104		1	23,000	64	1,472,000	408,000
Super Dome PCI Core I/O card	A6865A		1	1,045	1	1,045	
PCI 1000BT Lan Adapter	A4926A, Opt. 0D1		1	2,135	1	2,135	
PCI Fibre Channel 2X	A5158A, Opt 0D1		1	2,240	26	58,240	
Rack Installation Kit	A5170A, Opt. 0D1		1	410	1	410	
DVD-ROM (includes SCSI-2 card, cables, enclosures)	C7499A		1	3,503	1	3,503	
HP9000 A500 Support Management Station (includes memory,CPU,Ian card,disk,OS, etc)	A5570B		1	11,780	1	11,780	
.5m 68pin SCSI Cable	Opt. 001		1	99	1	99	
WSE 68pin SCSI Terminator	Opt. 835		1	46	1	46	
HP-UX 11.i Sys Media, CD-ROM	B3920EA, Opt. AAF		1	520	1	520	
PowerTrust 12kVA UPS 230VUPS	A6585A		1	8,936	8	71,488	
PowerTrust 3.0VA UPS 230VUPS	A1356A		1	2,599	2	5,198	
Surestore VA 7100 w/dual controllers 512MB cache	A6262A		1	44,250	78	3,451,500	328,458
18GB 15K RPM FC HDD	A6191A, Opt. 0D1		1	914	495	452,430	
36GB 15K RPM FC HDD.	A6193A, Opt 0D1		1	1,349	675	910,575	
2 meter Fibre Optic Cable	A3583A		1	175	78	13,650	
16 meter Fibre Optic Cable	A3531A		1	200	27	5,400	
10 Port Short Wave Fibre Channel Hub	A3724A		1	9,690	26	251,940	
HP9000 Std. Rack System E41	A4902A		1	1,910	7	13,370	
Modular Power Dist.	A5137AZ		1	145	26	3,770	
200-240 Volts Power Option	A5137AZ, Opt AW4		1	94	26	2,444	
Subtotal						9,154,668	1,005,084
Server Software							
Oracle9i Database Enterprise Edition 2, v9.2.0.1.0 for HP-UX 11i, Processor 3 year term for (64) processors, Unlimited Users:	Runtime	Oracle	2	1,280,000	1	1,280,000	6,000
Oracle Database Server Support Package for 3 years			2				
Subtotal						1,280,000	6,000
Client Hardware							
hp workstation c3700 with 2GB Memory	A6057B		1	12,545	3	37,635	11,643
1 GB Memory Module	A6016A, Opt. 0D1		1	1,395	3	4,185	
Terminal Console	C1099A		1	550	1	550	
18 GB LVD 10K RPM Disk	A4998A, Opt. 0D1		1	595	3	1,785	
HP server rp2470	A6890A		1	1,965	25	49,125	88,625
750Mhz PA-RISC 8700 CPU	A6892A		1	5,100	25	127,500	
36GB 10K HotPlug Ultra 160 SCSI Internal Disk	A6742A		1	1,150	25	28,750	
2GB Memory Module	A6114A		1	6,000	100	600,000	
100BT Lan Adapter	A5230A		1	495	25	12,375	
HP-UX 11.i Sys Media, CD-ROM	B3920EA, Opt. AAF		1	520	28	14,560	
Subtotal						876,465	100,268
Client Software							
HP C/ANSI C Compiler	B3901BA, Option AH0		1	1600	1	1,600	170
BEA Tuxedo 8.0		Bea Sys.	3	2,850	28	79,800	52,920
Subtotal						81,400	53,090
User Connectivity							
HP ProCurve Switch 4000M	J4121A		1	2379	1	2,379	588
HP ProCurve Switch Gigabit-SX Module	J4113A		1	1189	1	1,189	
Subtotal						3,568	588
Oracle Mandatory E-Business Discount (license and support)				2	(321,500)	1	(321,500)
HP's Large configuration Discount and Support Prepayment*							(\$421,804)
Total						5,877,845	743,226
*All discounts are based on US list prices and for similar quantities and configurations							
1=HP 2= Oracle (Pricing Contact: MaryBeth Pierantoni (see Appendix F) 3=BEA Systems						Three Year Cost of Ownership: \$6,621,072	
Audited by Lorna Livingtree for Performance Metrics, Inc.						tpmC Rating: 423,414	
						\$/tpmC: \$15.64	

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 Superdome Enterprise Server

MQTH, Computed Maximum Qualified Throughput

423,414.41 tpmC

Response Times (in seconds)

	90th %-ile	Maximum	Average
New-Order	0.42s	17.04s	0.22s
Payment	0.39s	16.73s	0.19s
Order-Status	0.44s	15.74s	0.21s
Delivery (interactive portion)	0.10s	10.53s	0.10s
Delivery (deferred portion)	0.51s	10.77s	0.23s
Stock-Level	0.39s	14.42s	0.19s
Menu	0.10s	0.57s	0.001s

Transaction Mix, in percent of total transactions

New-Order	44.98%
Payment	43.01%
Order-Status	4.00%
Delivery	4.00%
Stock-Level	4.00%

Keying/Think Times

	Keying Time			Think Time		
	Min	Avg	Max	Min	Avg	Max
New-Order	18.02s	18.03s	18.19s	0.01s	12.02s	215.38s
Payment	3.01s	3.02s	3.18s	0.01s	12.02s	222.72s
Order-Status	2.01s	2.02s	2.18s	0.01s	10.04s	153.26s
Delivery (interactive)	2.01s	2.02s	2.18s	0.01s	5.02s	82.24s
Stock-Level	2.01s	2.02s	2.18s	0.01s	5.03s	75.63s

Test Duration

Ramp up time	43 minutes
Measurement interval	120 minutes
Transactions during measurement interval	112,966,787
Ramp down time	37.399 minutes

Checkpointing

Number of checkpoints in measurement interval	4
Checkpoint Interval	29.77 minutes