

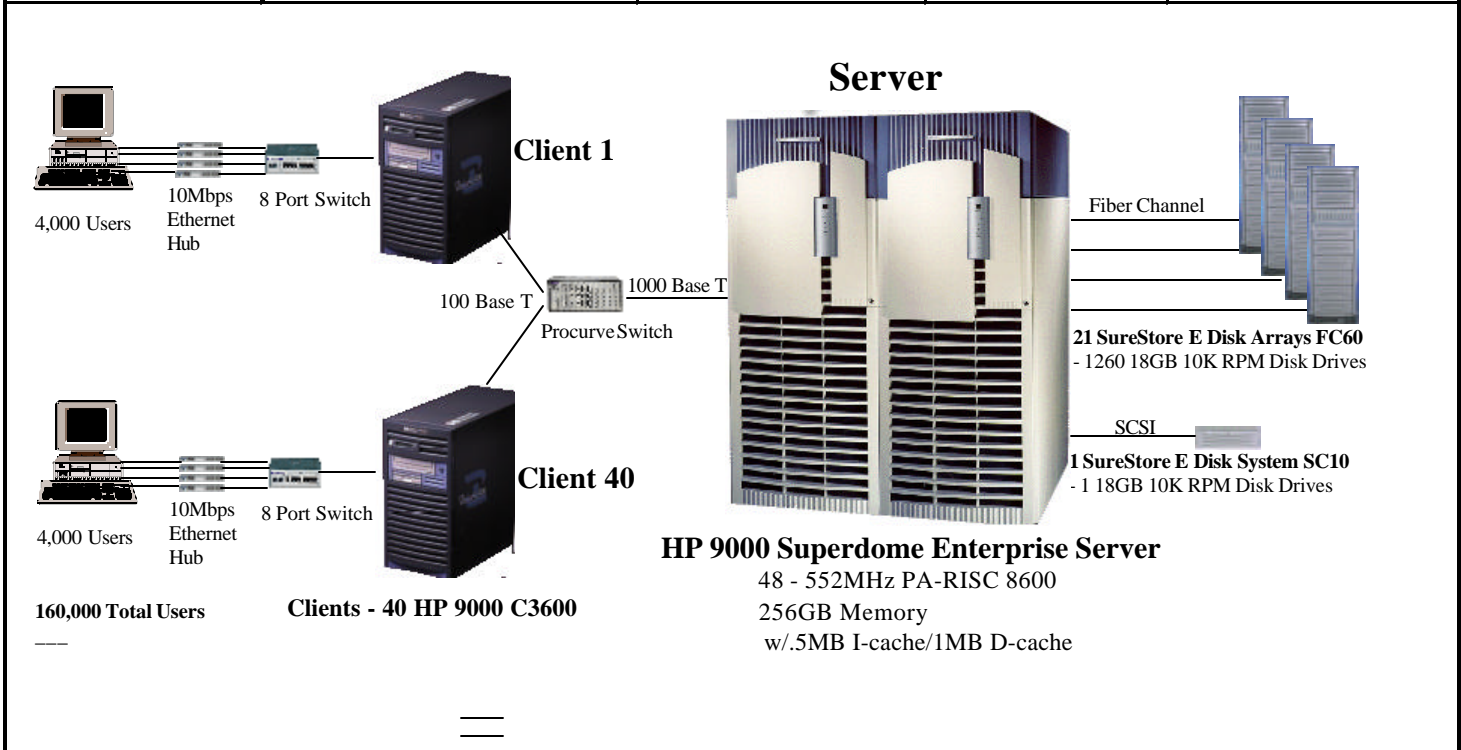


# HP 9000 Superdome Enterprise Server

TPC-C Revision 5

Report Date:  
June 12, 2002

Total System Cost	TPC Throughput	Price/Performance		Availability Date
<b>\$5,392,559</b>	<b>197,024.17 tpmC</b>	<b>\$27.37/tpmC</b>		<b>Now</b>
Processors	Database Manager	Operating System	Other Software	Number of Users
<b>48 PA-RISC 8600 552MHz</b>	<b>Oracle8 Enterprise Database Server v8.1.7.1</b>	<b>HP-UX 11.i 64-bit</b>	<b>TUXEDO 6.4</b>	<b>160,000</b>



System Components	Server (Superdome)		each Client (40 C3600s)	
	Qty	Type	Qty	Type
<b>Processors</b>	48	552MHz PA-RISC 8600	1	552MHz PA-RISC 8600
<b>Cache Memory</b>	each	.5 MB I-cache, 1 MB D-cache	each	512 KB I-cache/1 MB D-cache
<b>Memory</b>	256	GB	1	3 GB
<b>Disk Controllers</b>	42	PCI Fibre Channel 2X	1	Ultra2 SCSI LVD
<b>Disk Drives</b>	1	SureStore E Disk System SC10 with 1 18GB 10K RPM drive	1	18 GB disk
	21	SureStore E Disk Array FC 60 with 1260 18GB 10K RPM drives		
<b>Total Storage</b>	19289	GB		
<b>Tape Drives</b>	1	DVD ROM		
<b>Terminals</b>	1	Console Terminal	1	Console Terminal



ORACLE

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Description	Part Number	Brand	Price Key	Unit Price	Qty	Price	3 Year Main.Price
<b>Server Hardware</b>							
Super Dome left chassis	A5201A, Opt. 101		1	317,429	1	317,429	147,264
Super Dome right chassis	A5202A, Opt. 101		1	235,655	1	235,655	
Memory module - 2 GB	A5198A, Opt. 0D1		1	14,000	128	1,792,000	
I/O enclosures	A4856A, Opt. 0D1		1	14,805	4	59,220	
PDCA Redundant Power Source	A5800A, Opt. 0D1		1	578	2	1,156	
Cell Board with 4 PA-8600 552MHz Processors	A5206A, Opt. 0D1		1	14,600	16	233,600	
ICOD right to use processor	A6161A, Opt 104		1	21,806	48	1,046,688	263,808
ICOD right to access processor	A6162A		1	4,000	16	64,000	
Super Dome PCI Core I/O card	A6855A, Opt. 0D1		1	1,045	1	1,045	
PCI Dual FWD SCSI-2 Card	A5159A, Opt 0D1		1	1,245	1	1,245	
PCI 1000BT Lan Adapter	A4926A, Opt. 0D1		1	2,135	1	2,135	
PCI Fibre Channel 2X	A5158A, Opt 0D1		1	2,240	42	94,080	
Rack Installation Kit	A5170A, Opt. 0D1		1	410	1	410	
HP Smart 2U Storage Enclosure	C4317A		1	450	1	450	
DVD-ROM	C7499A		1	3,738	1	3,738	
(includes SCSI-2 card, cables, enclosures)							
HP9000 A500 Support Management Station	A5570B		1	11,780	1	11,780	
(includes memory,CPU,lan card,disk,OS, etc)							
.5m 68pin SCSI Terminator	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	
8kW 12kVA UPS 230V	A6585A		1	10,999	8	87,992	4,382
5M Ultra SCSI Cable	A5277A, Opt. 861		1	190	1	190	
SureStore E Disk Array FC60	A5277A		1	5,160	21	108,360	179,046
HP Rack System/E33 Inc. Rear & Foot	A4901A		1	2,240	21	47,040	
Dual Controllers	A5277A, Opt 204		1	32,080	21	673,680	
SureStore E Disk System SC10	A5294A		1	6,400	127	812,800	
16m Fibre Channel Cable	A5277A, Opt AFY		1	160	42	6,720	
18GB 10K RPM Disk Drive	A6272A		1	1,600	1260	2,016,000	
				<b>Subtotal</b>		<b>7,618,077</b>	<b>594,500</b>
<b>Server Software</b>							
Oracle8i Database Enterprise Edition (8.1.7.1) for HP-UX 11i	Runtime	Oracle	2	741,600	1	741,600	
Server Support Package: Database		Oracle	2				6,000
				<b>Subtotal</b>		<b>741,600</b>	<b>6,000</b>
<b>Client Hardware</b>							
Hewlett Packard Model C3600 Workstation	A5992A		1	11,995	40	479,800	155,240
1 GB Memory Moudle	A6016A, Opt. 0D1		1	1,395	80	111,600	
512MB Memory Module	A4995A, Opt. 0D1		1	695	40	27,800	
700/96 Console	C1099A		1	550	1	550	
18 GB LVD 10K RPM Disk	A4998A, Opt. 0D1		1	595	40	23,800	
				<b>Subtotal</b>		<b>643,550</b>	<b>155,240</b>
<b>Client Software</b>							
HP C/ANSI C Compiler	B3901BA, Option AH0		1	1,600	1	1,600	170
BEA Tuxedo 6.4		Bea Sys.	3	2,700	40	108,000	82,800
				<b>Subtotal</b>		<b>109,600</b>	<b>82,970</b>
<b>User Connectivity</b>							
HP ProCurve Switch 4000M	J4121A		1	2,379	1	2,379	588
HP ProCurve Switch Gigabit-SX Module	J4113A		1	1,189	1	1,189	
				<b>Subtotal</b>		<b>3,568</b>	<b>588</b>
Large Configuration Discoun and Support Payment							
						(4,312,598)	(250,537)
<b>*All discounts are based on US list prices and for similar quantities and configurations</b>						<b>Total</b>	<b>4,803,798</b>
<b>Notes: 1=HP, 2=Oracle pricing includes defect support and product updates for 3 years.</b>							
<b>3=BEA Systems</b>							
Audited by Lorna Livingtree for Performance Metrics, Inc.						<b>Five Year Cost of Ownership:</b>	<b>\$5,392,559</b>
						<b>tpmC Rating:</b>	<b>197,024</b>
						<b>\$/tpmC:</b>	<b>\$27.37</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 Superdome Enterprise Server

**MQTH, Computed Maximum Qualified Throughput**

**197,024.17 tpmC**

**Response Times (in seconds)**

	90th %-ile	Maximum	Average
New-Order	1.46s	7.91s	0.83s
Payment	1.38s	7.38s	0.75s
Order-Status	1.40s	7.31s	0.77s
Delivery (interactive portion)	0.08s	0.18s	0.08s
Delivery (deferred portion)	1.49s	7.27s	0.85s
Stock-Level	1.31s	5.13s	0.69s
Menu	0.10s	0.29s	0.001s

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

New-Order	44.80%
Payment	43.06%
Order-Status	4.05%
Delivery	4.05%
Stock-Level	4.05%

**Keying/Think Times**

	Keying Time			Think Time		
	Min	Avg	Max	Min	Avg	Max
New-Order	18.02s	18.03s	18.04s	0.01s	12.13s	191.14s
Payment	3.01s	3.02s	3.03s	0.01s	12.06s	205.68s
Order-Status	2.01s	2.02s	2.03s	0.01s	10.12s	154.63s
Delivery (interactive)	2.01s	2.02s	2.03s	0.01s	5.07s	79.61s
Stock-Level	2.01s	2.02s	2.03s	0.01s	5.06s	67.56s

**Test Duration**

Ramp up time	37 minutes
Measurement interval	112 minutes
Transactions during measurement interval	49,257,556
Ramp down time	8.65 minutes

**Checkpointing**

Number of checkpoints in measurement interval	4
Checkpoint Interval	28 minutes

**Reproducibility Run**

Throughput	195,575.23 tpmC
Relative to MQTH	-0.74%