

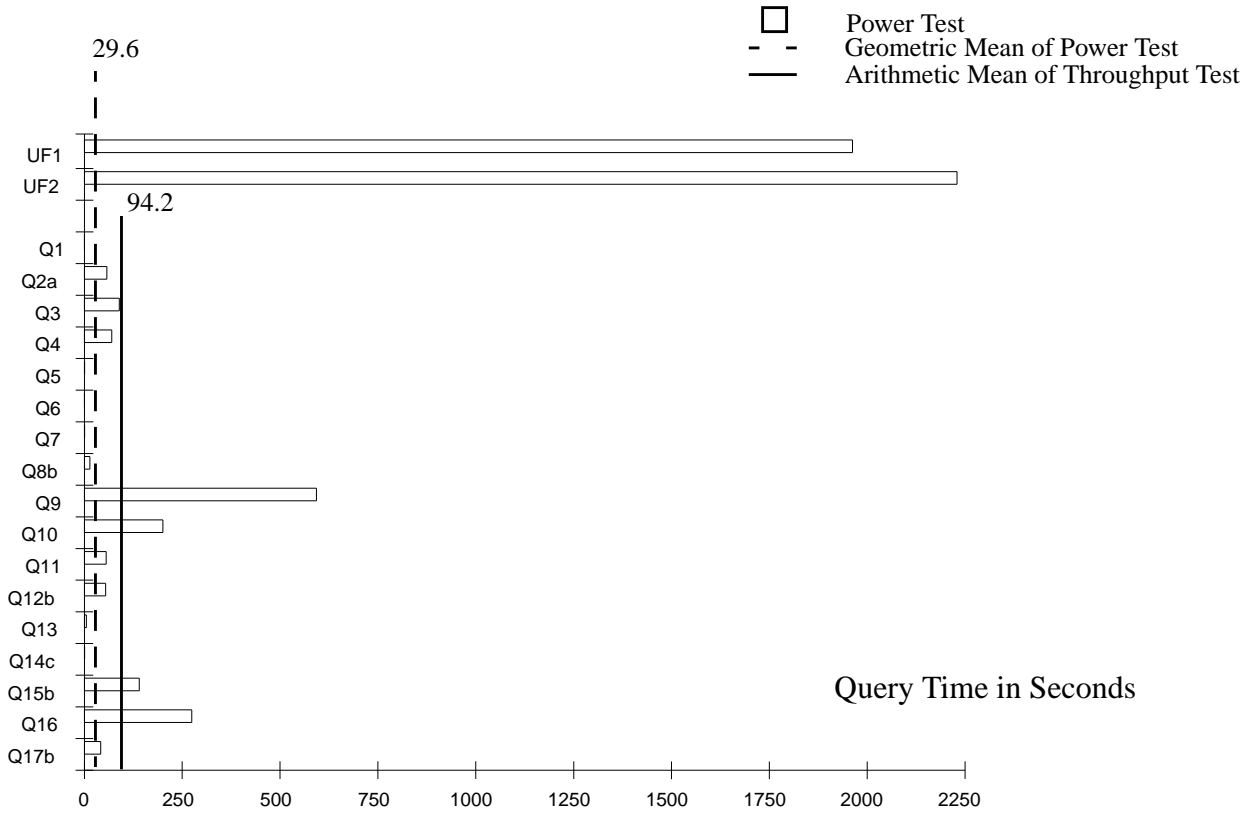


Sun Starfire Enterprise 10000 using Oracle8i

TPC-D 1.3.1

Report Date:
February 12, 1999

Total System Cost	TPC-D Power	TPC-D Throughput	Price/Performance	
\$10,161,744	121,824.7 QppD@1000GB	10,566.3 QthD@1000GB	\$283 per QphD@1000GB	
Database Size	Database Manager	Operating System	Other Software	Availability Date
1,000GB	Oracle8i v 8.1.5.2	Solaris 2.6	Veritas Volume Manager 2.6	August 1, 1999 See Note on next page



Database Load Time = 46 hours 59 minutes

Disk Size/Database Size = 9.81

RAID : Y

System Configuration:

- 64 400 Mhz UltraSPARC 64-bit CPUs each with 4MB Cache
- 60 GBytes memory
- 7 Sun StorEdge 1200GB A5200 with 6 x 22 x 9.1 GB drives each
- 4 SPARCStorage A3000 with 35 x 9.1 GB drives each
- 2 SPARCStorage RSM with 7 x 9.1GB drives each



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Description	Part Number	Source	Unit Price	Qty	Ext. Price	5 Yr. Maint.
Server Hardware						
E10000 Base Cabinet	E10000-3		165,000	1	165,000	475,669
System Board, unpopulated	2760A	2	48,750	16	780,000	818,196
CPU, 400MHz, 4MB L2\$	2570A	2	12,750	64	816,000	
Memory Board, unpopulated	7025A	2	7,500	15	112,500	
1GB for Ex000	7023A	2	7,125	60	427,500	
Dual SBus I/O daughter card	2730A	2	5,625	16	90,000	
System Service Proc	2751A	2	7,500	1	7,500	4,504
AC input module	3875A	2	2,250	4	9,000	
48 volt power supply	9685A	2	3,000	8	24,000	
Power Control Module	9681A	2	750	1	750	
Fan tray	9671A	2	1,500	16	24,000	
Control Board w/ Enet Cable	2720A	2	15,000	1	15,000	
Power Cord for System	3850A	2	0	4	0	
12 Meter SCSI cable	979A	2	199	2	398	
SBus Fast/Wide SCSI-2 (Diff)	1062A	2	971	2	1,943	
SBus Fibre Channel Host Adapter	6730A	2	2,025	42	85,050	
SBus Ultra Diff F/W SCSI	1065A	2	971	8	7,770	
Symmetra 16kva UPS	SX-SY16K	1	15,845	1	15,845	1,315
Subtotal					2,582,255	1,299,685
Storage						
StorEdge A3000 (15 X 9GB)	6534A	2	72,938	4	291,750	87,437
9.1 GByte Drive Module	X6516A	2	1,313	80	105,000	
Power Cord for A3000	3800A	2	0	4	0	
1200-GB Sun StorEdge A5200	SG-XARY523A-1200G	2	445,238	7	3,116,663	1,071,101
RSM Tray (7 X 9.1GB Disk)	6515AR4	2	13,950	2	27,900	
Subtotal					3,541,313	1,158,538
SunService Discount (10% Volume + 5% yearly prepayment)						(368,733)
Hardware Subtotal			371,011		6,123,568	2,089,489
Software						
Solaris 2.6 Media	SOLS-2.6MAR98	1	100	1	100	
S/W for SSP Version 3.1	SW-SSP-3.1	1	0	1	0	
SPARC Compiler, Single User Lic.	WCC-4.2-S	1	995	1	995	1,126
Sun StorEdge Vol Mgr. 2.6	VMR9S-260-R999	1	100	1	100	
RTU for E10000	VMR9S-260-S999	1	42,995	1	42,995	40,870
Oracle8i License (Version 8.1.5.2)		3	802,560	1	802,560	1,066,240
Subtotal					846,750	1,108,236
SunService Discount (10% Volume + 5% yearly prepayment)						(6,299)
Software Subtotal					846,750	1,101,937
Notes (Source):						
1. Sun Microsystems Inc.						
2. CAT Technology Inc						
3. Oracle Corp.						
Service for all hardware and software (except for Oracle Server) is from Sun Microsystems Inc.			Total		6,970,318	3,191,426
			5Yr. cost		\$10,161,744	
			QphD@1TB		35,878.1	
			\$/QphD@1TB		\$283	

Audited by: Francois Raab, Information Paradigm, Inc.

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. Special prices based on assumptions about past or future purchase 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 the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.

Note: Hardware and Sun Software Available Now; Oracle Software Available August 1, 1999.



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Numerical Quantity Summary

Measurement Results:

Database Scaling Factor (SF/Size)	= 1,000 GB
Total Data Storage / Database Size	= 9.81
Database Load Time	= 46 hours 59 minutes
Query Streams for Throughput Test	= 0
TPC-D Power Metric (QppD@1000GB)	= 121,824.7
TPC-D Throughput Metric (QthD@1000GB)	= 10,566.3
Composite QphD@1000GB	= 35,878.1
Total System Price Over 5 Years	= \$10,161,744
TPC-D Price/Performance Metric	= \$283

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 5,792 seconds
Duration of Stream Execution:	

Stream ID	Seed	Start Date	Start Time	End Date	End Time
Stream00	1259440881	Tuesday, February 9	23:22:18 PST	Wednesday, February 10	00:58:50 PST
UF1		Tuesday, February 9	23:22:18 PST	Tuesday, February 9	23:55:00 PST
UF2		Wednesday, February 10	00:21:41 PST	Wednesday, February 10	00:58:50 PST

TPC-D Timing Intervals (in seconds)

Q1	Q2a	Q3	Q4	Q5	Q6	Q7	Q8b	Q9	Q10
0.2	57.5	89.2	70.3	0.7	0.2	0.8	14.2	593.1	200.5

Q11	Q12b	Q13	Q14c	Q15b	Q16	Q17b	UF1	UF2
56.0	54.9	5.4	0.5	140.8	274.6	42.2	1962.0	2229.2