



# PRIMEPOWER 2500

## With Oracle Database 10g

TPC-H REV 2.0  
EXECUTIVE SUMMARY

Report Date: Jan. 14, 2004

Total System Cost  
**\$ 5,038,936**

Composite Query per Hour Metric  
**34,345.4**  
QphH@3000GB

Price/Performance  
**\$147**  
\$/QphH@3000GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

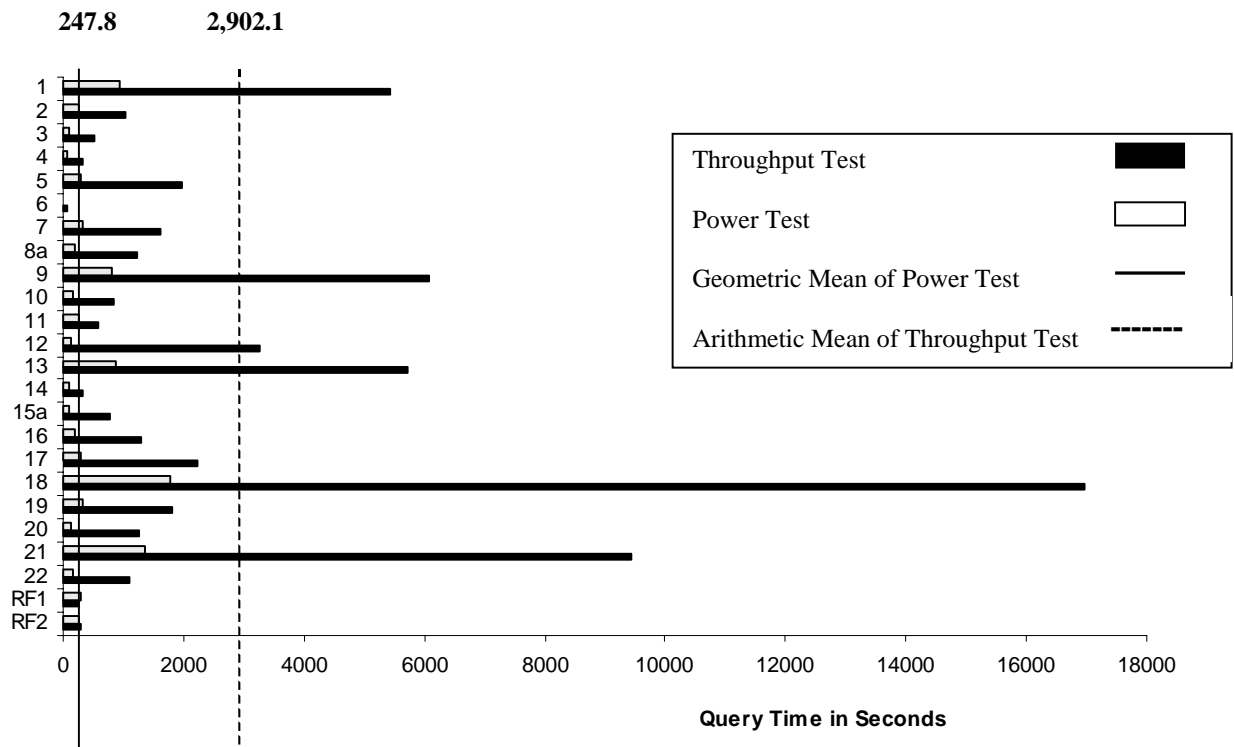
**3000GB**

**Oracle Database 10g  
Enterprise Edition**

**Solaris 9**

**Veritas  
Volume  
Mgr.3.5.0**

**February  
22, 2004**



Database Load time = 06:26

Load Includes Backup: N

Total Data Storage/database Size=18.19

RAID (base tables): N

RAID (Base Tables & auxil. Data  
structures): N

RAID (A11): Y

System Configuration:

PRIMEPOWER 2500

Processors:

64 SPARC64 V 1.3 GHz with 2 MB L2 Cache

Memory:

256 GB

Disks:

5 internal disks 36 GB, 64 FibreCat S80 arrays with 800 disks 73 GB

Total Storage:

54,559.65 GB ( 1GB defined as 2<sup>30</sup> bytes )

Database Size includes only raw data ( e.g., no temp, index, redundant storage space, etc. )



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Description	Part Number	Source	Unit Price	Qty	Ext. Price	3 Yr. Maint.
<b>Server Hardware</b>						
PRIMEPOWER2500 (1.3GHz/2MB\$) (For 8-64CPU) - Solaris 9	PW2K0BP7U	1	504450	1	504450	457776
System Board	PW2K7SB11U	1	37500	8	300000	
CPU Module (SPARC64 V 1.3GHz/2MB x 2)	PW2K1B12U	1	42510	32	1360320	
Additional Memory (8GB)	PW2K2M41U	1	14800	32	473600	
Additional Disk Unit (36.4GB)	PW0R3D24	1	1000	5	5000	
PCI / Disk Box	PW2K7BD1U	1	27500	16	440000	
I/O Rack Unit	PW2K7RK3U	1	24500	2	49000	
I/O Rack Unit Connection Kit	PW2K7RK93U	1	9500	1	9500	
I/O Rack Unit Connection Kit	PW2K7RK94U	1	9500	1	9500	
Fibre Channel Card(2Gb)	PW028FC3	1	2795	64	178880	
System Expansion Kit (w/ Solaris 9 RTU)	PW2K7ER6U	1	4900	1	4900	
Fibre Channel cable	DCL-FCA20U	1	780	64	49920	
PRIMEPOWER 100 for System Console	PW087MC4AU	1	13500	1	13500	
<b>Subtotal</b>					<b>3398570</b>	<b>457776</b>
<b>Server Software</b>						
Solaris 9 CD set PRIMEPOWER		1	100	1	100	
Sun ONE Studio 7, Compiler Collection Slim Kits 1 User Slim Kit	D23QBB0H1H	1	987	1	987	
Volume Manager, Solaris, v3.5, License, Tier 4C	A08974F-M0000	2	60195	1	60195	
Volume Manager, Solaris, v3.5 Tier 4C Extended Support, 3 Yr 24x7	W08974F-M00236	2	41535	1		41535
Storage Solution, Solaris v3.5 Maintenance Pack 1, English, Media Kit	N09665F	2	100	1	100	
Volume Manager, Solaris, Administrator's Guide, v3.5 English Manual	N08836F	2	50	1	50	
Oracle Database 10g Enterprise Edition for 3 years, Named User Plus		3	10000	64	640000	
Partitioning for 3 years, Named User Plus		3	2500	64	160000	
Database Server Support Package for 3 years		3	6000	1		6000
Oracle Mandatory E-Business Discount (license and support)		3			-161200	
<b>Subtotal</b>					<b>700232</b>	<b>47535</b>
<b>Storage</b>						
FC-S80 Basis Shelf	D:S80-Base	4	3650	64	233600	225000
S80 RAID Controller 2 Gbit/s	D:S80FC-RDM	4	9675	64	619200	80000
S80 Disk, 73GB 10.000rpm	D:S80-HD7310	4	1700	800	1360000	
PRIMECENTER Rack 38 HE	D:GPRAC-BG52	4	2350	6	14100	
<b>Subtotal</b>					<b>2226900</b>	<b>305000</b>
Large Configuration Discount and Support Prepayment*					-2022002	-75075
<b>Notes:</b>		<b>Total</b>			<b>\$4,303,700</b>	<b>\$735,236</b>
Source: 1=Fujitsu		<b>3 Yr. Cost</b>			<b>\$5,038,936</b>	
2=Veritas, contact: Nicole K. Zakhari (see Appendix G)		<b>QphH@3000GB</b>			<b>34,345.4</b>	
3=Oracle, contact: MaryBeth Pierantoni (see Appendix G)		<b>\$/QphH@3000GB</b>			<b>\$147</b>	
4=Fujitsu Siemens, contact: Jürgen Binder (see Appendix G)						
*All discounts are based on US list prices and for similar quantities and configurations						

Audited by: Bradley J. Askins, InfoSizing, Inc. (www.sizing.com)

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the standard 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 that the stated prices are not available according to these terms, please inform the TPC at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you.



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### Numerical Quantities

#### Measurement Results:

Database Scale Factor	3000 GB	
Total Data Storage / Database Size	18.19	
Start of Database Load Time	16.08.2003	10:28:37
End of Database Load Time	16.08.2003	16:54:05
Database Load Time	6:26	
Query Streams for Throughput Test	8	
TPC-H Power	43,574.8	
TPC-H Throughput	27,070.8	
TPC-H Composite Query-per-Hour-Rating (QphH@3000GB)	34,345.4	
Total System Price over 3 Years (US\$)	5,038,936	

#### Measurements Intervals:

Measurement Interval in Throughput Test	70,216	seconds
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#### Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 00	816165405	17. Aug	16:37:40	17. Aug	19:14:40	02:37:00
Stream 01	816165406	17. Aug	19:15:06	18. Aug	12:29:45	17:14:39
Stream 02	816165407	17. Aug	19:15:06	18. Aug	12:56:22	17:41:16
Stream 03	816165408	17. Aug	19:15:06	18. Aug	12:34:33	17:19:27
Stream 04	816165409	17. Aug	19:15:06	18. Aug	13:05:14	17:50:08
Stream 05	816165410	17. Aug	19:15:06	18. Aug	13:31:26	18:16:20
Stream 06	816165411	17. Aug	19:15:06	18. Aug	13:18:20	18:03:14
Stream 07	816165412	17. Aug	19:15:07	18. Aug	13:05:46	17:50:39
Stream 08	816165413	17. Aug	19:15:07	18. Aug	13:52:11	18:37:04
Refresh		18. Aug	13:31:26	18. Aug	14:45:22	01:13:56

TPC-H Price/Performance Metric (US\$/QphH@3000GB)

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### TPC-H Timing Intervals (in seconds)

	1	2	3	4	5	6	7	8a	9	10	11	12
Stream 00	923.2	274.5	109.6	68.7	296.8	36.2	336.1	181.6	816.0	163.1	251.6	130.8
Stream 01	5329.3	1018.1	588.2	400.0	2170.8	57.0	1638.5	1024.3	6110.7	1058.1	624.1	799.4
Stream 02	5408.3	1146.2	456.2	368.2	1766.8	95.4	1604.1	1046.2	6567.3	828.8	592.8	1993.7
Stream 03	5416.3	935.4	524.5	365.5	2257.8	62.4	1731.2	1322.0	6076.2	796.6	605.0	3161.0
Stream 04	5287.3	1045.4	216.8	239.0	1192.5	45.5	1724.7	1347.7	6075.7	816.4	668.3	4682.6
Stream 05	5745.4	966.0	515.5	310.4	1948.0	55.4	1698.3	1428.4	4424.9	854.5	582.2	6457.5
Stream 06	5104.4	1359.0	857.9	289.0	2148.8	58.4	1352.9	1449.1	6818.1	494.8	562.1	6149.1
Stream 07	5482.4	932.0	533.9	366.2	2282.2	53.3	1640.0	1150.7	6616.9	953.9	641.4	541.0
Stream 08	5640.1	986.6	478.2	355.6	2100.4	58.4	1558.1	1181.7	5840.9	854.6	415.9	2289.9
Minimum	5104.4	932.0	216.8	239.0	1192.5	45.5	1352.9	1024.3	4424.9	494.8	415.9	541.0
Average	5426.7	1048.6	521.4	336.7	1983.4	60.7	1618.5	1243.8	6066.3	832.2	586.5	3259.3
Maximum	5745.4	1359.0	857.9	400.0	2282.2	95.4	1731.2	1449.1	6818.1	1058.1	668.3	6457.5

	13	14	15a	16	17	18	19	20	21	22	RF1	RF2
Stream 00	885.6	83.5	112.0	187.4	278.2	1767.1	318.4	145.2	1368.9	156.5	276.5	252.3
Stream 01	5768.8	318.9	813.6	1201.9	2202.4	15984.6	1809.6	2069.8	9753.7	1337.0	252.7	501.3
Stream 02	6467.6	350.6	848.1	1566.4	2868.2	17025.5	1748.3	829.5	9137.0	960.5	265.7	273.4
Stream 03	5707.1	376.5	768.9	1493.2	2433.3	15145.8	1620.0	796.6	9499.5	1271.7	272.4	259.8
Stream 04	5731.8	284.9	820.2	1385.0	2103.6	17794.3	1685.9	314.8	10104.2	640.7	257.3	260.7
Stream 05	5297.5	303.1	738.4	1164.4	2026.7	14714.8	1647.5	2780.2	10969.7	1150.5	262.5	260.9
Stream 06	5640.4	304.2	1013.8	1323.7	2160.4	15476.4	1724.5	1869.2	7797.4	1039.9	264.7	262.4
Stream 07	5743.1	228.1	200.9	717.1	1917.3	21958.9	1606.5	718.0	8815.7	1139.1	258.4	258.0
Stream 08	5415.7	289.8	946.7	1391.4	2069.9	17589.8	2688.2	754.9	9343.8	1173.9	259.4	263.4
Minimum	5297.5	228.1	200.9	717.1	1917.3	14714.8	1606.5	314.8	7797.4	640.7	252.7	258.0
Average	5721.5	307.0	768.8	1280.4	2222.7	16961.3	1816.3	1266.6	9427.6	1089.2	261.6	292.5
Maximum	6467.6	376.5	1013.8	1566.4	2868.2	21958.9	2688.2	2780.2	10969.7	1337.0	272.4	501.3