



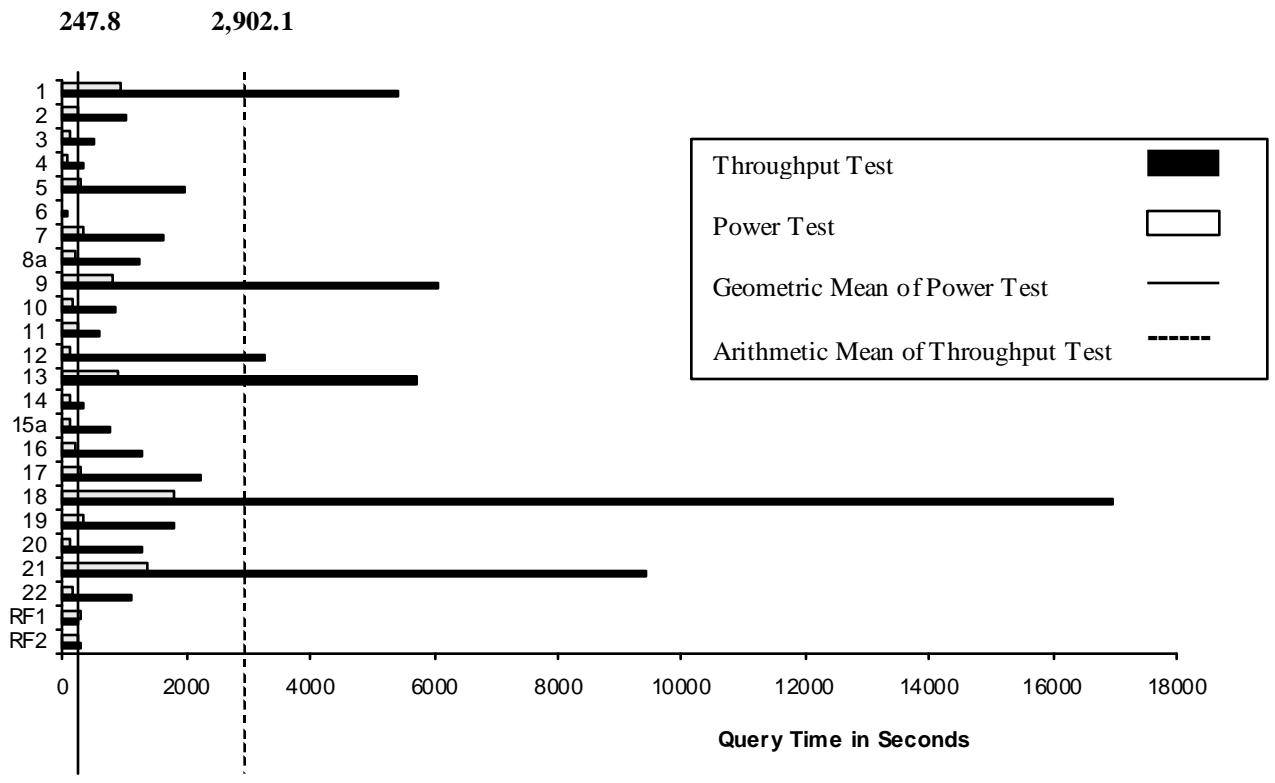
PRIMEPOWER 2500

With Oracle Database 10g

**TPC-H REV 2.0
EXECUTIVE SUMMARY**

Report Date: Jan 12, 2004

Total System Cost	Composite Query per Hour Metric	Price/Performance	
€ 5,541,011	34,345.4 QphH@ 3000GB	€161 €QphH@ 3000GB	
Database Size	Database Manager	Operating System	Other Software
3000GB	Oracle Database 10g Enterprise Edition	Solaris 9	Veritas Volume Mgr.3.5.0
			Availability Date
			Feb 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 2^30 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.
Server Hardware						
PRIMEPOWER 2500 So9 basic cabinet 64CPU	D:GPK25-GA73	1	590,000	1	590,000	102,600
Systemboard 1D f 8cpu 4mem f PW2500	D:GPK25-SE73	1	54,000	8	432,000	
Dual CPU modul 1.3GHz SLC2MB f PW 2500	D:GPK25-ZE90	1	58,000	32	1,856,000	315,648
Main memory expansi on 8 GB f 2500	D:GPK25-SP74	1	20,000	32	640,000	
Disk Drive 36 GB	D:GP71F-FP36	1	1,750	5	8,750	
Fibre Channel Contr. Single port 2 GB	D:GP70F-CF31	1	3,050	64	195,200	
FC cable MMF 20m Connector DLC-DLC	D:FCKAB-MM-C10L	1	130	64	8,896	
PCI/DISK box 10PCI slot 4HDD bayf PW2500	D:GPK25-BG63	1	49,000	16	784,000	150,912
I/O cabinet f 8xPCI/disk boxf PW2500	D:GPK25-BG71	1	21,775	2	43,550	
I/O cabinet joint A f PW2500 bc64	D:GPK25-BG72	1	17,225	1	17,225	
I/O cabinet joint B f PW2500 I/O-I/O	D:GPK25-BG73	1	17,225	1	17,225	
System expansion kit f PW2500 So9 64CPU	D:GPK25-SE55	1	18,500	1	18,500	
Cable for console connection unit	D:GP7KB-1805	1	190	2	380	
System Managem. Console (SMC package)	D:GPCON-TS25	1	12,890	1	12,890	4,428
Modem for Teleservice	D:GPON-MD01	1	230	1	230	
Subtotal					4,624,846	573,588
Server Software						
Solaris 9 CD set PRIMEPOWER	U24529-C509	1	300	1	300	
Sun One Studio 7 Compiler 1 User	U24539-C512	1	1,365	1	1,365	1,140
Veritas VM 3.5, Solaris 9	U24529-C312	1	81,780	1	81,780	66,240
Oracle Database 10g Enterprise Edition for 3 years, Named User Plus for 3 Years		2	11,682	64	747,648	
Partitioning for 3 years, Named User Plus		2	2,920	64	186,880	
Oracle Database Server Support Package for 3 Years		2				7,009
Oracle Mandatory E-Business Discount (license and support)		2			-188,307	
Subtotal					829,666	74,389
Storage						
FC-S80 Basis Shelf	D:S80-Base	1	3950	64	252,800	245,184
S80 RAID Controller 2 Gbit/s	D:S80FC-RDM	1	1,0450	64	668,800	87,552
S80 Disk, 73GB 10,000rpm	D:S80-HD7310	1	1,825	800	1,460,000	
PRIMECENTER Rack38 HE	D:GPRAC-BG52	1	3,950	6	23,700	
Subtotal					2,405,300	332,736
Large Configuration Discount and Support Prepayment*					-3,163,566	-135,949
Notes:					Total	€4,696,246
Source: 1=Fujitsu Siemens					3 Yr. Cost	€5,541,011
2=Oracle, contact: MaryBeth Pierantoni (see Appendix G)					QphH@3000GB	34,345.4
					€/QphH@3000GB	€161

*All discounts are based on EMEA 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. 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 Prize over 3 Years (EUR)	5,541,011	
TPC-H Price/Performance Metric (EUR/QphH@3000GB)	161	

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



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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