



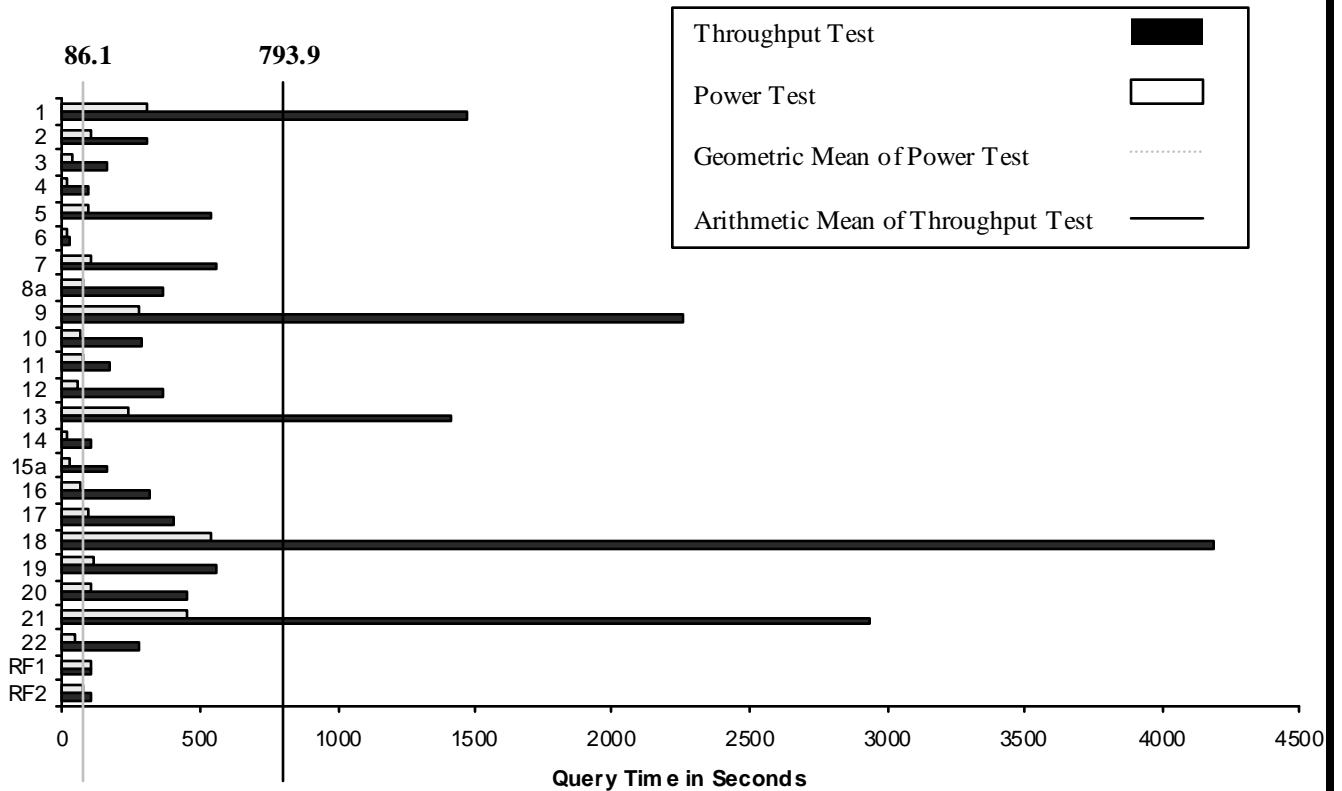
# PRIMEPOWER 2500

## 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            |   |
| <b>€ 5,380,411</b> | <b>34,492.5</b><br>QphH@1000GB                    | <b>€156</b><br>€/QphH@1000GB |   |
| Database Size      | Database Manager                                  | Operating System             | Other Software                          |
| <b>1000GB</b>      | <b>Oracle Database 10g<br/>Enterprise Edition</b> | <b>Solaris 9</b>             | <b>Veritas<br/>Volume<br/>Mgr.3.5.0</b> |
|                    |   |                              | Availability Date                       |
|                    |   |                              | <b>March 8,<br/>2004</b>                |



|                               |  |  |
|-------------------------------|--|--|
| Database Load time = 02:18:34 | Load Includes Backup: N                        | Total Data Storage/database Size=43.68 |
| RAID (base tables): N         | RAID (Base Tables & auxil. Data structures): N | RAID (A11): Y                          |

**System Configuration:** PRIMEPOWER 2500  
**Processors:** 64 Fujitsu SPARC64 V 1.3 GHz with 2 MB L2 cache  
**Memory:** 256 GB  
**Disks:** 5 internal disks 36 GB, 64 FibreCat S80 arrays with 640 disks 73 GB  
**Total Storage:** 43,679.04 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.      |
|--|-----------------|--------|------------|-----|----------------------|-------------------|
| <b>Server Hardware</b>   |                 |        |            |     |                      |                   |
| 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/diskboxf 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                  |                   |
| <b>Subtotal</b>  |                 |        |            |     | <b>4,624,846</b>     | <b>573,588</b>    |
| <b>Server Software</b>   |                 |        |            |     |                      |                   |
| 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,<br>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             |                   |
| <b>Subtotal</b>  |                 |        |            |     | <b>829,666</b>       | <b>74,389</b>     |
| <b>Storage</b>   |                 |        |            |     |                      |                   |
| FC-S80 Basis Shelf   | D:S80-Base      | 1      | 3950       | 64  | 252,800              | 245,184           |
| S80 RAID Controller 2 Gbit/s   | D:S80FC-RDM     | 1      | 10,450     | 64  | 668,800              | 87,552            |
| S80 Disk, 73GB 10,000rpm   | D:S80-HD7310    | 1      | 1,825      | 640 | 1,168,000            |                   |
| PRIMECENTER Rack38 HE  | D:GPRAC-BG52    | 1      | 3,950      | 6   | 23,700               |                   |
| <b>Subtotal</b>  |                 |        |            |     | <b>2,113,300</b>     | <b>332,736</b>    |
| Large Configuration Discount and Support Prepayment*                               |                 |        |            |     | -3,032,166           | -135,949          |
| <b>Notes:</b>  |                 |        |            |     | <b>Total</b>         | <b>€4,535,646</b> |
| Source: 1=Fujitsu Siemens  |                 |        |            |     | <b>3 Yr. Cost</b>    | <b>€5,380,411</b> |
| 2=Oracle, contact: MaryBeth Pierantoni (see Appendix G)                            |                 |        |            |     | <b>QphH@1000GB</b>   | <b>34,492.5</b>   |
|  |                 |        |            |     | <b>€/QphH@1000GB</b> | <b>€156</b>       |

\*All discounts are based on EMEA list prices and for similar quantities and configurations

Audited by: Francois Raab, 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.



# PRIMEPOWER 2500

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TPC-H REV 2.0  
EXECUTIVE SUMMARY

Report Date: Jan 12, 2004

### Numerical Quantities

#### Measurement Results:

|  |                     |
|--|---------------------|
| Database Scale Factor                            | 1000 GB             |
| Total Data Storage / Database Size               | 43.68               |
| Start of Database Load Time                      | 05.09.2003 08:08:28 |
| End of Database Load Time                        | 05.09.2003 10:27:02 |
| Database Load Time                               | 2:18:34             |
| Query Streams for Throughput Test                | 7                   |
| TPC-H Power                                      | 41,829.5            |
| TPC-H Throughput                                 | 28,442.4            |
| TPC-H Comp. Query-per-Hour-Rating (QphH@1000GB)  | 34,492.5            |
| Total System Prize over 3 Years (EUR)            | 5,380,411           |
| TPC-H Price/Performance Metric (EUR/QphH@1000GB) | 156                 |

#### Measurements Intervals:

|   |        |         |
|---|--------|---------|
| Measurement Interval in Throughput Test | 19,492 | Seconds |
|---|--------|---------|

#### Duration of Stream Execution:

| Stream ID | Seed      | Start Date | Start Time | End Date | End Time | Duration |
|-----------|-----------|------------|------------|----------|----------|----------|
| Stream 00 | 905102702 | 05. Sep    | 16:54:50   | 05. Sep  | 17:47:18 | 00:52:28 |
| Stream 01 | 905102703 | 05. Sep    | 17:47:39   | 05. Sep  | 22:36:06 | 04:48:27 |
| Stream 02 | 905102704 | 05. Sep    | 17:47:39   | 05. Sep  | 22:34:56 | 04:47:17 |
| Stream 03 | 905102705 | 05. Sep    | 17:47:39   | 05. Sep  | 22:36:15 | 04:48:36 |
| Stream 04 | 905102706 | 05. Sep    | 17:47:39   | 05. Sep  | 22:29:30 | 04:41:51 |
| Stream 05 | 905102707 | 05. Sep    | 17:47:39   | 05. Sep  | 22:45:16 | 04:57:37 |
| Stream 06 | 905102708 | 05. Sep    | 17:47:39   | 05. Sep  | 22:41:27 | 04:53:48 |
| Stream 07 | 905102709 | 05. Sep    | 17:47:39   | 05. Sep  | 22:47:51 | 05:00:12 |
| Refresh   |           | 05. Sep    | 22:47:51   | 05. Sep  | 23:12:31 | 00:24:40 |



# PRIMEPOWER 2500

## With Oracle Database 10g

TPC-H REV 2.0  
EXECUTIVE SUMMARY

Report Date: Jan 12, 2004

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

|           | 1      | 2     | 3     | 4     | 5     | 6    | 7     | 8a    | 9      | 10    | 11    | 12    |
|-----------|--------|-------|-------|-------|-------|------|-------|-------|--------|-------|-------|-------|
| Stream 00 | 306.0  | 105.6 | 33.3  | 23.3  | 94.7  | 13.8 | 101.4 | 71.9  | 276.1  | 64.3  | 81.3  | 61.2  |
| Stream 01 | 1161.7 | 315.4 | 120.0 | 38.6  | 645.9 | 19.5 | 660.4 | 501.4 | 2346.6 | 369.6 | 172.4 | 304.7 |
| Stream 02 | 1424.6 | 312.7 | 127.0 | 114.9 | 606.9 | 77.1 | 530.6 | 387.3 | 2110.3 | 289.3 | 144.3 | 370.9 |
| Stream 03 | 1351.7 | 267.5 | 104.0 | 112.3 | 662.1 | 24.1 | 580.2 | 432.4 | 1931.0 | 386.7 | 203.1 | 458.4 |
| Stream 04 | 1417.4 | 299.9 | 180.1 | 86.1  | 302.3 | 18.4 | 685.4 | 279.2 | 1960.1 | 387.5 | 176.2 | 358.5 |
| Stream 05 | 1671.0 | 375.3 | 160.7 | 98.3  | 709.5 | 21.5 | 643.2 | 364.3 | 2084.1 | 392.9 | 160.4 | 485.2 |
| Stream 06 | 1661.7 | 351.8 | 260.1 | 93.9  | 696.0 | 16.5 | 669.3 | 235.6 | 2351.3 | 165.1 | 147.2 | 532.1 |
| Stream 07 | 1633.0 | 283.1 | 165.1 | 94.9  | 143.0 | 17.1 | 125.8 | 341.1 | 3009.8 | 67.7  | 211.5 | 99.2  |
| Minimum   | 1161.7 | 267.5 | 104.0 | 38.6  | 143.0 | 16.5 | 125.8 | 235.6 | 1931.0 | 67.7  | 144.3 | 99.2  |
| Average   | 1474.4 | 315.1 | 159.6 | 91.3  | 538.0 | 27.7 | 556.4 | 363.0 | 2256.2 | 294.1 | 173.6 | 372.7 |
| Maximum   | 1671.0 | 375.3 | 260.1 | 114.9 | 709.5 | 77.1 | 685.4 | 501.4 | 3009.8 | 392.9 | 211.5 | 532.1 |

|           | 13     | 14    | 15a   | 16    | 17    | 18     | 19    | 20    | 21     | 22    | RF1   | RF2   |
|-----------|--------|-------|-------|-------|-------|--------|-------|-------|--------|-------|-------|-------|
| Stream 00 | 240.3  | 23.0  | 31.2  | 63.8  | 95.0  | 548.3  | 113.5 | 109.6 | 459.1  | 49.9  | 107.7 | 73.1  |
| Stream 01 | 1538.1 | 125.9 | 166.7 | 327.1 | 299.9 | 3855.2 | 496.3 | 525.8 | 2989.3 | 326.1 | 113.2 | 74.2  |
| Stream 02 | 1365.3 | 120.1 | 172.5 | 398.2 | 719.7 | 3877.1 | 618.4 | 301.8 | 2919.0 | 249.0 | 108.2 | 184.9 |
| Stream 03 | 1452.5 | 112.0 | 217.2 | 324.5 | 450.2 | 4020.4 | 609.2 | 289.6 | 2987.8 | 339.5 | 110.9 | 91.0  |
| Stream 04 | 1468.8 | 106.4 | 172.5 | 345.5 | 275.8 | 3923.4 | 536.1 | 830.5 | 2785.2 | 315.6 | 112.4 | 82.8  |
| Stream 05 | 1481.4 | 130.7 | 179.6 | 338.2 | 367.2 | 3726.2 | 504.2 | 245.7 | 3463.5 | 253.5 | 110.2 | 85.0  |
| Stream 06 | 1394.8 | 124.6 | 196.2 | 432.7 | 390.0 | 4047.7 | 585.5 | 281.5 | 2759.9 | 233.8 | 116.6 | 85.9  |
| Stream 07 | 1203.8 | 28.0  | 33.4  | 71.5  | 366.3 | 5879.4 | 589.4 | 689.3 | 2673.7 | 284.6 | 107.3 | 96.7  |
| Minimum   | 1203.8 | 28.0  | 33.4  | 71.5  | 275.8 | 3726.2 | 496.3 | 245.7 | 2673.7 | 233.8 | 107.3 | 74.2  |
| Average   | 1415.0 | 106.8 | 162.6 | 319.7 | 409.9 | 4189.9 | 562.7 | 452.0 | 2939.7 | 286.0 | 111.2 | 100.1 |
| Maximum   | 1538.1 | 130.7 | 217.2 | 432.7 | 719.7 | 5879.4 | 618.4 | 830.5 | 3463.5 | 339.5 | 116.6 | 184.9 |