



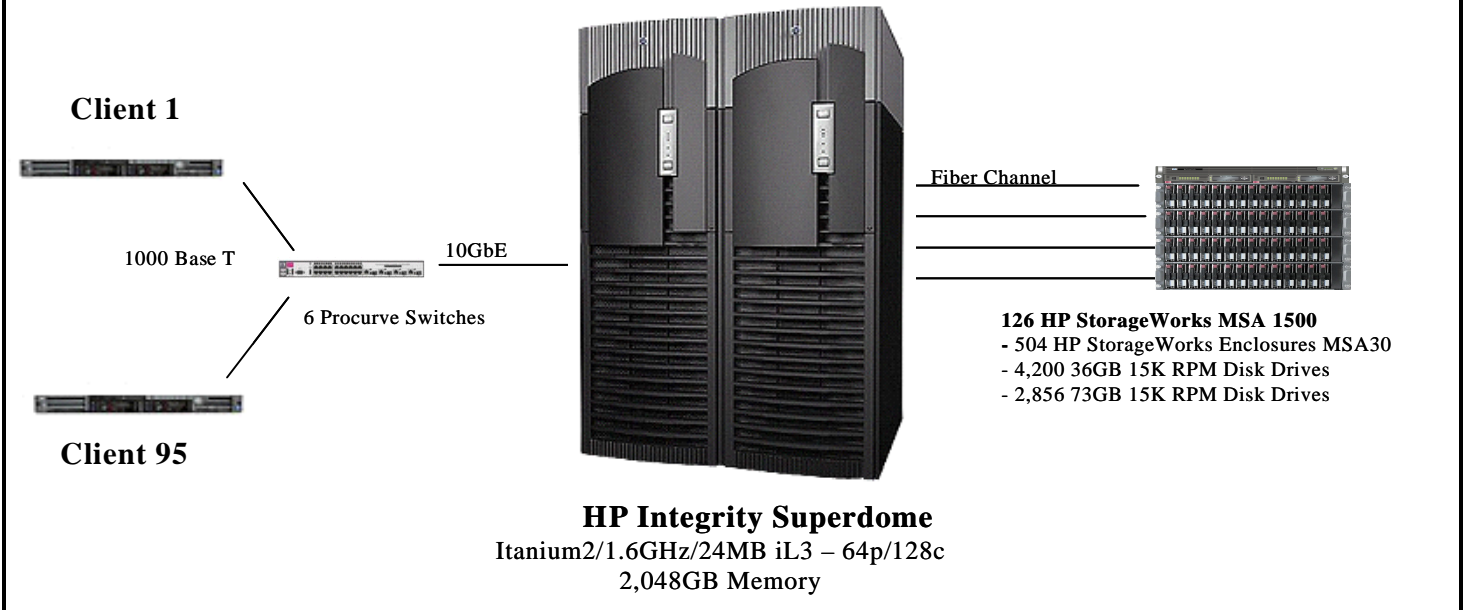
HP Integrity Superdome - Itanium2/1.6GHz/24MB iL3 - 64p/128c

TPC-C Revision 5.8

Report Date:
August 21, 2007

| | | | |
|---|---|------------------------|------------------------|
| Total System Cost | TPC Throughput | Price/Performance | Availability Date |
| USD \$11,978,134 | 4,092,799 tpmC | USD \$2.93/tpmC | August 6, 2007 |
| Server Processors/Cores/Threads | Database Manager | Operating System | Other Software |
| 64/128/256 Intel Itanium2 1.6GHz | Oracle Database 10g Release 2 Enterprise Edition with Partitioning | HP-UX 11i v3 | TUXEDO 8.1 |
| | | | Number of Users |
| | | | 3,226,200 |

Server



| System Components | Server (HP Integrity Superdome - Itanium2/1.6GHz/24MB iL3 - 64p/128c) | | each Client (95 rx1620) | |
|---------------------------------|---|---|-------------------------|-----------------------|
| | Qty | Type | Qty | Type |
| Processors/Cores/Threads | 64/128/256 | 1.6GHz Intel Itanium2 | 2/2/2 | 1.3GHz Intel Itanium2 |
| Cache Memory | 2 | 12MB iL3 Cache | each | 3M iL3 cache |
| Memory | 2048 | GB | 8 | GB |
| Disk Controllers | 40 | PCI-X 4Gb Fibre Channel Adapter (dual port) | 1 | Ultra2 SCSI LVD |
| Disk Drives | 126 | HP StorageWorks Modular Smart Array 1500 with 4200 36GB 15K RPM and 2856 73GB 15K RPM | 1 | 36 GB |
| | 1 | HP Surestore Disk System 2120 with 1 36GB LP 15K HDD | | |
| Total Storage | | 320974 GB | | |
| Tape Drives | 1 | DVD ROM | | |
| Terminals | 1 | HP Server Thin Client | | |



HP Integrity Superdome - Itanium2/1.6GHz/24MB iL3 - 64p/128c

TPC-C Rev 5.8

Report Date: 39315, 2007

| Description | Part Number | Brand | Price US List Key Price | Qty | Price | 3Year Main.Price |
|--|------------------|-------|----------------------------|------|------------------|---------------------|
| Server Hardware | | | | | | |
| Superdome left chassis | A9834A, Opt 429 | | 1 235,950 | 1 | 235,950 | |
| Superdome right chassis | A9835A, Opt 429 | | 1 249,950 | 1 | 249,950 | |
| Superdome sx2000 Cell Board | A9837A | | 1 19,250 | 16 | 308,000 | |
| 3 Year Svc & Support Price (Hardware and Software) | | | | | | \$1,376,539 |
| Dual-Core Intel Itanium2 9050/1.6GHz/24MB L3 | A9840A | | 1 31,500 | 64 | 2,016,000 | |
| 512GB Memory Bundle (128x4GB dimms) | A9857A | | 1 1,599,078 | 4 | 6,396,312 | |
| 12-Slot PCI-X I/O Chassis | A9836A | | 1 16,950 | 16 | 271,200 | |
| I/O Chassis Enclosure for 12-Slot PCI-X Chassis | A9852A | | 1 25,750 | 4 | 103,000 | |
| Graphite I/O expansion power subsystem | A5861D | | 1 34,860 | 2 | 69,720 | |
| HP Surestore Disk System 2120 | A7382A | | 1 995 | 1 | 995 | |
| 36GB LP 15K HDD | A7527A | | 1 966 | 1 | 966 | |
| HP Universal Rack10642 G2 Pallet Rack | AF001A | | 1 1,249 | 1 | 1,249 | |
| Modular Power Dist Unit for std racks | A5137AZ | | 1 145 | 1 | 145 | |
| 200-240 volts North America | A5137AZ, Opt AW4 | | 1 94 | 1 | 94 | |
| PCI-X Dual Ultra320 SCSI Adapter | A7173A | | 1 795 | 1 | 795 | |
| PCI-X 4Gb Fibre Channel Adapter (dual port) | AB379B | | 1 3,495 | 40 | 139,800 | |
| HP DVD + RW Array Field Module | Q1592B | | 1 649 | 1 | 649 | |
| HP rx2620 Server Solution (inc memory, disk, monitor, keyboard/mouse) | AB332A | | 1 5,315 | 1 | \$5,315 | |
| Subtotal | | | | | 9,800,140 | 1,376,539 |
| Server Software | | | | | | |
| Oracle Database 10g Release 2 Enterprise Edition, Unlimited Users, Per Processor, 3 yrs | Runtime | | 2 20,000 | 64** | 1,280,000 | |
| Partitioning, Unlimited Users, Per Processor, 3 yrs | | | 2 5,000 | 64** | 320,000 | |
| Oracle Database Server Support Package for 3 years | | | 2 2,000 | 3 | | 6,000 |
| HP-UX 11i v3 Foundation Operating Environment | B9429AC | | 1 2,370 | 128 | 303,360 | |
| HP-UX 11i v3 HP9000 Integrity FOE Media | BA489AA, Opt AJR | | 1 565 | 1 | 565 | |
| Subtotal | | | | | 1,903,925 | 6,000 |
| Storage | | | | | | |
| Rack System/E R3000 XR UPS | 192186-001 | | 1 1,365 | 1 | 1,365 | |
| 5 meter Fibre Optic Cable | 221691-B22 | | 1 82 | 346 | 28,372 | |
| 15 meter Fibre Optic Cable | 221691-B23 | | 1 103 | 30 | 3,090 | |
| HP StorageWorks MSA 1500 w/MSA30 Enc (126+ 13 spares) | AD510A | | 1 8,995 | 139 | 1,250,305 | |
| HP StorageWorks Enclosures MSA30 (378+38 spares) | 302969-B21 | | 1 2,829 | 416 | 1,176,864 | |
| HP StorageWorks MSA 1000 Controller (126+13 spares) | 218231-B22 | | 1 4,290 | 139 | 596,310 | |
| MSA1500 Fibre Channel I/O Module 126+13 spares) | AA987A | | 1 375 | 139 | 52,125 | |
| MSA1500 Dual Channel SCSI I/O Module (378 + 38 spares) | AA988A | | 1 525 | 416 | 218,400 | |
| 3 Yr Support Price for MSA1000, MSA30, disks, switches | | | | | | INCLUDED |
| 73GB 15K Ultra320 Hard Drive (2856 + 286 spares) | 286778-B22 | | 1 439 | 3142 | 1,379,338 | |
| 36GB 15K Ultra320 Hard Drive (4200 + 420 spares) | 286776-B22 | | 1 319 | 4620 | 1,473,780 | |
| HP StorageWorks 4/64 Full SAN Switch | AG457A | | 1 62,999 | 2 | 125,998 | |
| HP StrgWrks4gbSW SnglPK SFP Transcvr | A7446B | | 1 199 | 124 | 24,676 | |
| HP StrgWrks2gbSW SnglPK SFP Transcvr | 221470-B21 | | 1 199 | 296 | 58,904 | |
| HP StorageWorks SAN Switch 4/8 | A8000A | | 1 4,999 | 60 | 299,940 | |
| HP Universal Rack10642 G2 Pallet Rack | AF001A | | 1 1,249 | 44 | 54,956 | |
| Subtotal | | | | | 6,744,423 | 0 |
| Client Hardware | | | | | | |



HP Integrity Superdome - Itanium2/1.6GHz/24MB iL3 - 64p/128c

TPC-C Rev 5.8

Report Date: 39315, 2007

| Description | Part Number | Brand | Price US List Key Price | Qty | Price | 3Year Main.Price | |
|--|-------------------|-------|----------------------------|-----|--|---------------------|----------------|
| Client Hardware | | | | | | | |
| HP Integrity rx1620 w 1.3GHz Intel Itanium 2 Processor | AB430A | | 1 3,445 | 95 | 327,275 | | |
| 1.3GHz Intel Itanium 2 Processor | AB481A | | 1 1,650 | 95 | 156,750 | | |
| 3 Year Support Price (Hardware & Software) | | | | | | 444,192 | |
| 36GB 15K RPM Ultra320 SCSI Internal Disk | AB420A | | 1 389 | 95 | 36,955 | | |
| 2GB Memory Module (2 x 1GB DIMMS) | AB223A | | 1 1,275 | 380 | 484,500 | | |
| HP Server Thin Client (monitor, keyboard/mouse, cable inc.) | AB300B | | 1 1,250 | 1 | 1,250 | | |
| HP Univerisal Rack 10642 G2 Shock Rack | AF001A | | 1 1,249 | 4 | 4,944 | | |
| Modular Power Dist. | 252663-24 | | 1 299 | 16 | 4,734 | | |
| HP-UX Fndn OE DVD Media | B9106AA, Opt. AJR | | 1 565 | 1 | 565 | | |
| HP-UX Fndn OE DVD Media, Factory Integrated | B9106AA, Opt. OD1 | | 1 199 | 1 | 199 | | |
| HP-UX Fndn OE Integrity PPL max2CPU w/sys | B9430AC | | 455 | 190 | 86,450 | | |
| Subtotal | | | | | 1,103,622 | 444,192 | |
| Client Software | | | | | | | |
| HP C++/ANSI C Developer's Bundle | B9007AA, Opt. 2AH | | 1 966 | 1 | 966 | 170 | |
| BEA Tuxedo 8.1 | | | 3 1,200 | 95 | 114,000 | 71,820 | |
| Subtotal | | | | | 114,966 | 71,990 | |
| User Connectivity | | | | | | | |
| HP ProCurve Switch 2724 (24-port) | J4897A | | 1 1,599 | 4 | 6,396 | | |
| HP ProCurve Switch 3400cl-24G | J4905A | | 1 3,795 | 2 | 7,590 | | |
| ProCurve 10-GbE X2-SC SR Optic transceivers | J8436A | | 1 2,999 | 4 | 11,996 | | |
| HP ProCurve 10GbE Meida Flex Module | J8435A | | 1 2,699 | 2 | 5,398 | | |
| Subtotal | | | | | 31,380 | 0 | |
| Oracle Mandatory E-Business Discount (license and support) | | | 2 | | (401,500) | | |
| BEA 10% Mandatory Discount | | | 3 | | (11,400) | | |
| HP's Large configuration Discount and Support Prepayment* | | | | | (\$8,279,746) | (\$926,397) | |
| *** These components are not immediately orderable. See the FDR for more information. | | | | | Total | 11,005,810 | 972,324 |
| **2 = 0.50 * 4. Explanation: For the purposes of counting the number of processors which require licensing, an Intel multicore chip with "n" cores shall be determined by multiplying "n" cores by a factor of 0.50. | | | | | | | |
| *A 46.7% discount was based on the overall value of the specific components from HP (Price Key) in this single quotation. Discounts for similarly sized configurations will be similar to those quoted here, but may vary based on the components in the quotation. Prices are for US dollars and similar quantities. | | | | | | | |
| 1=HP 2= Oracle 3=BEA | | | | | Three Year Cost of Ownership (USD): | | |
| | | | | | \$11,978,134 | | |
| | | | | | tpmC Rating: | | |
| | | | | | 4,092,799 | | |
| Audited by Lorna Livingtree of Performance Metrics, Inc. | | | | | \$/tpmC (USD): | | |
| | | | | | \$2.93 | | |
| 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 Integrity Superdome - Itanium2/1.6GHz/24MB iL3 - 64p/128c

MQTH, Computed Maximum Qualified Throughput

4,092,799 tpmC

Response Times (in seconds)

| | 90th %-ile | Maximum | Average |
|--------------------------------|------------|---------|---------|
| New-Order | 0.51s | 84.83s | 0.24s |
| Payment | 0.49s | 85.20s | 0.23s |
| Order-Status | 0.51s | 79.95s | 0.23s |
| Delivery (interactive portion) | 0.10s | 81.97s | 0.14s |
| Delivery (deferred portion) | 0.50s | 82.38s | 0.21s |
| Stock-Level | 0.61s | 81.88s | 0.31s |
| Menu | 0.10s | 0.28s | 0.07s |

Transaction Mix, in percent of total transactions

| | |
|--------------|--------|
| New-Order | 44.95% |
| Payment | 43.01% |
| Order-Status | 4.01% |
| Delivery | 4.02% |
| Stock-Level | 4.01% |

Keying/Think Times

| | Keying Time | | | Think Time | | |
|------------------------|-------------|--------|--------|------------|--------|---------|
| | Min | Avg | Max | Min | Avg | Max |
| New-Order | 18.01s | 18.02s | 18.19s | 0.02s | 12.02s | 251.71s |
| Payment | 3.01s | 3.02s | 3.19s | 0.02s | 12.02s | 246.09s |
| Order-Status | 2.01s | 2.02s | 2.18s | 0.02s | 10.02s | 171.08s |
| Delivery (interactive) | 2.01s | 2.02s | 2.19s | 0.02s | 5.03s | 95.32s |
| Stock-Level | 2.01s | 2.02s | 2.19s | 0.02s | 5.02s | 89.68s |

Test Duration

| | |
|--|----------------|
| Ramp up time | 42 minutes |
| Measurement interval | 120 minutes |
| Transactions during measurement interval | 1,092,597,205 |
| Ramp down time | 23.338 minutes |

Checkpointing

| | |
|---|---------------|
| Number of checkpoints in measurement interval | 4 |
| Checkpoint Interval | 29.45 minutes |