

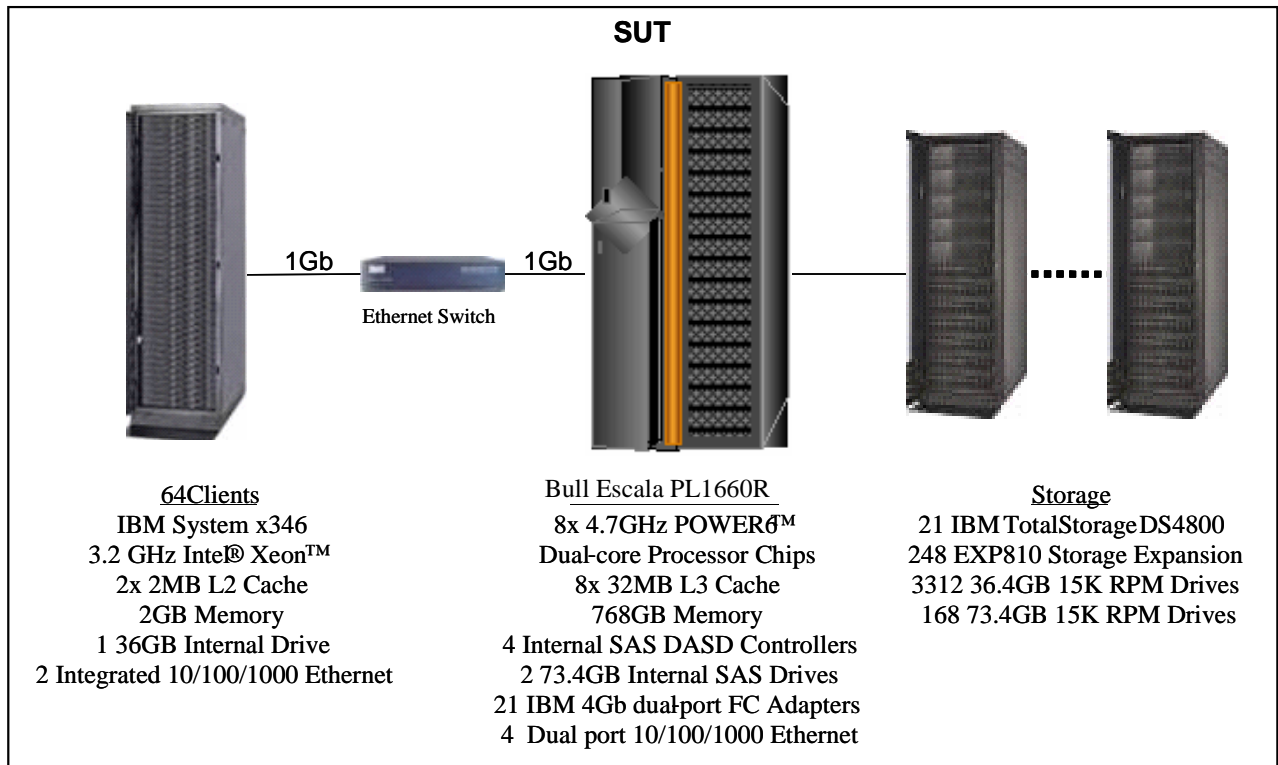


Bull Escala PL1660R

TPC-C Rev. 5.9

Report Date: December 16, 2007

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
5,716,286 USD	1,616,162	\$3.54 USD	December 16, 2007
Database Server Processor Chip/Core/Thread	Database Manager	Operating System	Other Software
8/16/32 POWER6 4.7GHz	DB2 9.1	AIX 5L V5.3	Microsoft Visual C++ Microsoft COM+
			No. Users
			1,279,200



System Components	Server		Each of the 64 Clients	
	Quantity	Description	Quantity	Description
Processors Chips /Cores/Threads	8/16/32	4.7GHz POWER6™	2/2/4	3.2GHz 1MB L3 Xeon Processor
Memory	24	32 GB	4	512 MB
Disk Controllers	4 21 21	Integrated SAS 4Gb Dual-port FC Adapters IBM System Storage DS4800	1	Ultra320 SCSI
Disk Drives	3312 168 2	36.4GB 15K RPM 4Gb FC 73.4GB 15K RPM 4Gb FC 73.4GB 15K RPM SAS	1	36GB
Total Storage		117.05 TB		2,304 GB
Terminals	1	System Console	1	System Console



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Description	Part Number	Brand	Pricing	Unit Price	Quantity	Extended Price	3-year Maint. Price
Server Hardware							
ESCALA NODE PL1660R (BASE DRAWER)	CPSG068-0000	Bull	1	23 737	1	23 737	3 620
INDICATOR SYSTEM PL1660R PACKAGE	PKHG032-0000	Bull	1	0	1		
4.7GHZ P6, 2-CORE PROCESSOR CARD, 0-CORE ACTI	CPUG158-0D00	Bull	1	11 500	8	92 000	42 610
PROCESSOR POWER REGULATOR	REFG008-0000	Bull	1	1 500	12	18 000	
ACTIVATION OF 256GB DDR2 POWER6 MEMORY	CPKG436-0000	Bull	1	387 840	3	1 163 520	
ONE PROC.ACTIVATION FOR 2-CORE&4.7 (P6)	CPKG440-0000	Bull	1	23 000	16	368 000	80 256
EXPANSION CPU DRAWER FOR PL1660R	DRWG098-0000	Bull	1	13 542	3	40 626	
EXPANSION PCI-X I/O DRAWER	DRWG100-0000	Bull	1	6 090	4	24 360	16 962
73 GB SAS DISK DRIVE (1"/15KRPM)	MSUG251-0000	Bull	1	659	2	1 318	
2X- 1GB VIRTUAL ETHERNET (RJ45) AND 2 SYSTEM P	DCIG012-0000	Bull	1	399	4	1 596	
10/100/1000 BASE-TX ETHERNET PCI-X ADAPTER	DCCG164-0000	Bull	1	530	4	2 120	
2-PORT 10/100/1000 ETHERNET PCI-X ADAPTER	DCCG168-0000	Bull	1	755	1	755	
4GB/S FIBRE CHANNEL PCI-X ADAPTER 2-PORT	DCCG196-0000	Bull	1	2 500	21	52 500	
GX DUAL PORT - 12X HCA	DCCG204-0000	Bull	1	1 499	1	1 499	
IDE SLIMLINE DVD-ROM DRIVE	CDRG032-0000	Bull	1	275	1	275	
RACK 36U (BLACK) WITH ONE PDU - 12 OUTLETS	RCKG018-0000	Bull	1	4 190	1	4 190	1 588
POWER SUPPLY TYPE EU	PSKG004-0002	Bull	1	0	1		
17" FLAT PANEL MONITOR	DMUG024-1000	Bull	1	890	1	890	
FULL WIDTH QUIET TOUCH KEYBOARD - USB, FR	KBUG009-000F	Bull	1	100	1	100	
ADDITIONAL POWER DISTRIBUTION UNIT - SINGLE PH	PSSG053-0000	Bull	1	1 000	1	1 000	
0/256GB (32X8GB) DDR2, 400MHZ, 0GB ACTIVE	CMMG277-0000	Bull	1	97 126	3	291 378	
MEDIA ENCLOSURE AND BACK PLANE	CKTG306-0000	Bull	1	185	1	185	
KIT INTERCONNECT FOUR-DRAWER CABLES	CKTG307-0004	Bull	1	30 000	1	30 000	
KIT CABLES/FIRST EXPANSION DRAWER	CKTG308-0000	Bull	1	515	1	515	
I/O DRAWER MOUNTING ENCLOSURE (2 POSITIONS)	CKTG309-0000	Bull	1	525	2	1 050	
OPERATOR PANEL	CKTG310-0000	Bull	1	199	1	199	
DESKSIDE HMC W/O MONITOR/KEYBOARD	CSKG018-0000	Bull	1	1 860	1	1 860	1 422
POWER CORD PDU/WALL (4.3M), 48A IEC309, 63A PLU	CBLG235-1700	Bull	1	240	2	480	
POWER CORD (14-FOOT) - DRAWER TO PDU	CBLG240-1700	Bull	1	15	16	240	
NUMBER OF AIX PARTITIONS	CPFG053-0000	Bull	1	0	1		
ADVANCED POWER VIRTUALIZATION (PER CPU)	CPFG055-0000	Bull	1	1 310	16	20 960	
3M cable IB 3M	NS17-1830	Bull	1	560	3	1 680	
Subtotal						2 145 033	146 459
Storage							
DS4800 Disk System Model 82	1815-82A	IBM	2	53995	21	1 133 895	
DS4800 8-Storage Partitions	8870	IBM	2	10000	21	210 000	
(22R4255) DS4800 AIX Host Kit	7711	IBM	2	7000	21	147 000	
DS4000 EXP810 Enclosure	1812-81A	IBM	2	6000	248	1 488 000	
72GB/15K Drive 4Gb FC disks	5413	IBM	2	1679	168	282 072	
36GB/15K Drive 4Gb FC disks	5412	IBM	2	892	3312	2 954 304	
Short Wave SFP	2410	IBM	2	998	185	184 630	
Fiber Cable 25m	5625	IBM	2	189	42	7 938	
Fiber Cable 1m	5601	IBM	2	79	496	39 184	
3 Year Warranty Service Upgrade 1812-81A 24x7x4		IBM	2	960	248		238 080
3 Year Warranty Service Upgrade 1815-82A 24x7x4		IBM	2	3200	21		67 200
Subtotal						6 447 023	305 280
Server Software							
AIX 5.3 (media only)	UTSG191-VK00	Bull	1	50	1	50	
AIX Software per Processor	EXSG295-VF00	Bull	1	1 225	16	19 600	
Software Maintenance for AIX, 3 Year	SBYG014-IN01	Bull	1	2 274	16		36 384
Partition Load Manager SW Maint: 3 year	SBYG051-IN00	Bull	1	60	16		960
VIO Software Maintenance (3Y)	SBYG050-IN00	Bull	1	405	16		6 480
Initial Installation PL1660R	GMHG141-0000	Bull	1	500	1		500
C for AIX user Lic+SW maint 12 MO	CLGG043-VA01	Bull	1	1 080	1	1 080	
C for AIX user annual SW maint renewal	SBYG031-IN00	Bull	1	210	2		420
DB2 Enterprise Proc 9 Lic/1 year Maintenance		IBM	2	271	1920	519 533	
DB2 9 Enterprise Edition Proc Maint Renew		IBM	2	13	3840		49 498
Subtotal						540 263	94 242



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Description	Part Number	Brand	Pricing	Unit Price	Quantity	Extended Price	3-year Maint. Price
Client Hardware							
xSeries 346 Express Model	884025U	IBM	2	2175	64	139 200	38 400
3.2GHz 800MHz 2MB L2 Cache Xeon Processor	40K2505	IBM	2	499	64	31 936	
1GB (2x512MB Kit) PC2-3200	39M5818	IBM	2	238	64	15 232	
36GB 15K Hot Swap SCSI	40K1026	IBM	2	269	64	17 216	
NetBAY S2 42U Standard Rack Cabinet	93074RX	IBM	2	1489	26	38 714	
Optical 3-Button Mouse - USB	40K9201	IBM	2	19	1	19	
Preferred Pro Full Size PS/2 Keyboard	40K9584	IBM	2	29	1	29	
IBM C117 17" CRT Monitor	49387NU	IBM	2	149	1	149	
Subtotal						242 495	38 400
Third party Hardware/Software							
Visual C++ Standard Edition	254-00170	Microsoft	3	250	1	250	
Microsoft Windows 2003 Server	P73-00295	Microsoft	3	719	64	46 016	
Microsoft Problem Resolution Services		Microsoft	3	245	1	245	245
3Com Baseline Switch 2824 24-port unmanaged Giga	512294	3Com	1	411	6	2 464	
Subtotal						48 975	245
TOTAL						9 423 789	584 626
IBM Discount							-3 420 052
Bull Discount							-872 077

Notes:

Pricing: 1-Bull 2-IBM 3-Microsoft

Audited by Francois Raab of InfoSizing (www.sizing.com)

Three-Year Cost of Ownership: \$5 716 286
tpmC Rating: 1616162

\$ / tpmC: 3,54

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 purchases are not permitted. All discounts reflects 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 the Bull Escala PL1660R

MQTH, computed Maximum Qualified Throughput: 1,616,162 tpmC

<u>Response Times (in seconds)</u>	<u>90th %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.48	0.25	20.91
Payment	0.46	0.24	20.43
Order-Status	0.47	0.25	16.9
Delivery (interactive)	0.10	0.10	19.62
Delivery (deferred)	0.14	0.24	2.55
Stock-Level	0.55	0.30	13.44
Menu	0.10	0.10	20.40

Response time delay added for emulated components was 0.1 seconds

<u>Transaction Mix, in percent of total transactions</u>	<u>Percent</u>
New Order	44.96%
Payment	43.01%
Order-Status	4.01%
Delivery	4.01%
Stock-Level	4.01%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.00/0.01	18.01/12.02	18.04/120.20
Payment	3.00/0.01	3.01/12.02	3.04/120.20
Order-Status	2.00/0.01	2.01/10.01	2.03/100.10
Delivery	2.00/0.01	2.01/5.02	2.03/50.20
Stock-Level	2.00/0.01	2.01/5.02	2.03/50.20

Test Duration

Ramp-up Time	19 minutes
Measurement interval	2 hours 20 minutes
Transactions during measurement interval (all types)	503,267,530
Ramp-down time	15 minutes

Checkpoints

Number of checkpoints	N/A
Checkpoint interval	N/A