



## Bull Escala PL1660R

TPC-C Rev. 5.8



Report Date: December 16, 2007

<b>Total System Cost</b>	<b>TPC-C Throughput</b>	<b>Price/Performance</b>	<b>Availability Date</b>	
<b>1,419,019USD</b>	<b>404,462.54</b>	<b>\$3.51 USD</b>	<b>December 16, 2007</b>	
<b>Processor Chips/Cores/Threads</b>	<b>Database Manager</b>	<b>Operating System</b>	<b>Other Software</b>	<b>No. Users</b>
2/4/8 Power6 4.7GHz	Oracle Database 10g Enterprise Edition	AIX 5L V5.3	Microsoft Visual C++ Microsoft COM+	321,280

### SUT





16 Clients  
 IBM System x346  
 3.2GHz Intel ® Xeon™  
 2x2MB L2 Cache  
 2GB Memory  
 1 36GB Internal Drive  
 2 Integrated 10/100/1000 Ethernet

Bull Escala PL1660R  
 2x 4.7 GHz POWER6™  
 Dual-core processor chips  
 2x32MB L3 Cache  
 192GB Memory  
 1 Internal SAS DASD Controller  
 2 73.4GB Internal SAS Drives  
 5 IBM 4Gb dual -port FC Adapters  
 1 Dual port 10/100/1000 Ethernet Adapters

Storage  
 5 IBM TotalStorage DS4800  
 52 EXP810 Storage Expansion  
 780 36.4GB 15K RPM Drives

System Components	Server		Each of the 16 clients	
	Quantity	Description	Quantity	Description
<b>Processor Chips/Cores/Threads</b>	2/4/8	4.7GHz POWER6™	2/2/4	3.2GHz , 800MHz bus speed, 2MB L2 cache Xeon Processor
<b>Memory</b>	6	32GB	4	512 MB
<b>Disk Controllers</b>	1 5 5	Integrated SAS 4Gb Dual-port FC Adapters IBM System Storage DS4800	1	Ultra320 SCSI
<b>Disk Drives</b>	780 2	36.4GB 15K RPM 4Gb FC 73.4GB 15K RPM SAS	1	36 GB
<b>Total Storage</b>		25,603 GB		576 GB
<b>Terminals</b>	1	System Console	1	System Console

	<b>BULL</b> <b>EscaLa PL1660R</b>				<b>TPC-C Rev. 5.9</b>		
	<b>Report Date: December 16, 2007</b>						
<b>Description</b>	<b>MI Part Number</b>	<b>Brand</b>	<b>Pricing</b>	<b>Unit Price</b>	<b>Quantity</b>	<b>Extended Price</b>	<b>3-year Maint. Price</b>
<b>Server Hardware</b>							
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	0	
4.7GHZ P6, 2-CORE PROCESSOR CARD, 0-CORE ACTIVE	CPUG158-0D00	Bull	1	11 500	2	23 000	10 653
PROCESSOR POWER REGULATOR	REFG008-0000	Bull	1	1 500	3	4 500	
ACTIVATION OF 1GB DDR2 POWER6 MEMORY	CPKG437-0000	Bull	1	1 515	192	290 880	
ONE PROC.ACTIVATION FOR 2-CORE&4.7 (P6)	CPKG440-0000	Bull	1	23 000	4	92 000	20 065
EXPANSION PCI-X I/O DRAWER	DRWG100-0000	Bull	1	6 090	1	6 090	4 241
73 GB SAS DISK DRIVE (1*/15KRPM)	MSUG251-0000	Bull	1	659	2	1 318	
2X- 1GB VIRTUAL ETHERNET (RJ45) AND 2 SYSTEM PORT	DCIG012-0000	Bull	1	399	1	399	
4GB/S FIBRE CHANNEL PCI-X ADAPTER 2-PORT	DCCG196-0000	Bull	1	2 500	5	12 500	
2-PORT 10/100/1000 BASE-TX ETHERNET PCI-E ADAPT.	DCCG200-0000	Bull	1	699	1	699	
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	0	
17" FLAT PANEL MONITOR	DMUG024-1000	Bull	1	890	1	890	
FULL WIDTH QUIET TOUCH KEYBOARD - USB, FRENCH	KBUG009-000F	Bull	1	100	1	100	
ADDITIONAL POWER DISTRIBUTION UNIT - SINGLE PHASE	PSSG053-0000	Bull	1	1 000	1	1 000	
0/32GB (4X8GB) DDR2, 400MHZ, POD, 0GB ACTIVE	CMMG276-0D00	Bull	1	26 886	6	161 316	
MEDIA ENCLOSURE AND BACK PLANE	CKTG306-0000	Bull	1	185	1	185	
KIT CABLES/FIRST EXPANSION DRAWER	CKTG308-0000	Bull	1	515	1	515	
I/O DRAWER MOUNTING ENCLOSURE (TWO POSITIONS)	CKTG309-0000	Bull	1	525	1	525	
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), 24A IEC309, 32A PLUG	CBLG234-1700	Bull	1	240	2	480	
POWER CORD (14-FOOT) - DRAWER TO PDU	CBLG240-1700	Bull	1	15	4	60	
ADVANCED POWER VIRTUALIZATION (PER CPU)	CPFG055-0000	Bull	1	1 310	4	5 240	
<b>Subtotal</b>						<b>633 457</b>	<b>41 588</b>
<b>Storage</b>							
DS4800 Disk System Model 82	1815-82A	IBM	2	53995	5	269 975	
DS4800 8-Storage Partitions	8870	IBM	2	10000	5	50 000	
(22R4255) DS4800 AIX Host Kit	7711	IBM	2	7000	5	35 000	
DS4000 EXP810 Enclosure	1812-81A	IBM	2	6000	52	312 000	
36GB/15K Drive 4Gb FC disks	5412	IBM	2	892	780	695 760	
Short Wave SFP	2410	IBM	2	998	52	51 896	
Fiber Cable 25m	5625	IBM	2	189	10	1 890	
Fiber Cable 1m	5601	IBM	2	79	104	8 216	
3 Year Warranty Service Upgrade 1812-81A 24x7x4		IBM	2	960	52		49 920
3 Year Warranty Service Upgrade 1815-82A 24x7x4		IBM	2	3200	5		16 000
<b>Subtotal</b>						<b>1 424 737</b>	<b>65 920</b>
<b>Server Software</b>							
AIX 5.3 (media only)	UTSG191-VK00	Bull	1	50	1	50	
AIX Software per Processor	EXSG295-VF00	Bull	1	1 225	4	4 900	
Software Maintenance for AIX, 3 Year	SBYG014-IN01	Bull	1	2 274	4		9 096
Partition Load Manager SW Maint: 3 year	SBYG051-IN00	Bull	1	60	4		240
VIO Software Maintanance (3Y)	SBYG050-IN00	Bull	1	405	4		1 620
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
Oracle Database 10g Enterprise Edition, Per Processor, Unlimited Users, 3		Oracle	3	20 000	3	60 000	
Oracle Database Server Support Package for 3 years		Oracle	3	2 000	3		6 000
<b>Subtotal</b>						<b>66 030</b>	<b>17 876</b>
<b>Client Hardware</b>							
Base or packages: x346 Base w/3.2GHz,DVD,IO,POWER	8840AC1	IBM	2	1803	16	28 848	9 600
Additional processors: Additional 3.2GHz 800MHz 2MB L2	1356	IBM	2	699	16	11 184	
Memory: 512MB DDR-II SDRAM DIMM	541	IBM	2	135	64	8 640	
36GB 15K Hot Swap SCSI	5168	IBM	2	249	16	3 984	
NetBAY S2 42U Standard Rack Cabinet	93074RX	IBM	2	1489	4	5 956	
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	
<b>Subtotal</b>						<b>58 809</b>	<b>9 600</b>

		<b>BULL</b> <b>Escala PL1660R</b>			TPC-C Rev. 5.9 Report Date: December 16, 2007		
Description	MI Part Number	Brand	Pricing	Unit Price	Quantity	Extended Price	3-year Maint. Price
<b>Third party Hardware/Software</b>							
Visual C++ Standard Edition	254-00170	Microsoft	4	250	1	250	
Microsoft Windows 2003 Server	P73-00295	Microsoft	4	719	16	11 504	
Microsoft Problem Resolution Services		Microsoft	4	245	1	245	245
3Com Baseline Switch 2824 24-port unmanaged Gigabit	512294	3Com	1	411	3	1 232	
<b>Subtotal</b>						<b>13 231</b>	<b>245</b>
<b>TOTAL</b>						<b>2 196 264</b>	<b>135 229</b>
<b>Oracle Discount</b>							<b>-6 600</b>
<b>IBM Discount</b>							<b>-649 482</b>
<b>Bull Discount</b>							<b>-256 392</b>
<b>Notes:</b> Pricing: 1-Bull 2-IBM 3-Oracle 4-Microsoft				<b>Three-Year Cost of Ownership: \$1 419 019</b> <b>tpmC Rating: 404462</b>			
<b>Audited by Francois Raab of InfoSizing (www.sizing.com)</b>				<b>\$ / tpmC: 3,51</b>			
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: 404,462.54 tpmC

<u>Response Times (in seconds)</u>	<u>90<sup>th</sup> %</u>	<u>Average</u>	<u>Maximum</u>
New Order	0.69	0.34	15.02
Payment	0.68	0.33	6.39
Order-Status	0.69	0.34	5.67
Delivery (interactive)	0.10	0.10	4.91
Delivery (deferred)	0.03	0.02	0.4
Stock-Level	0.68	0.33	7.74
Menu	0.10	0.10	8.26

Response time delay added for emulated components 0.1 seconds

<u>Transaction Mix, in percent of total transactions</u>	<u>Percent</u>
New Order	44.96%
Payment	43.01%
Order-Status	4.00%
Delivery	4.00%
Stock-Level	4.00%

<u>Keying/Think Times (in seconds)</u>	<u>Min.</u>	<u>Average</u>	<u>Max.</u>
New Order	18.00/0.01	18.01/12.01	18.04/120.10
Payment	3.00/0.01	3.01/12.01	3.04/120.10
Order-Status	2.00/0.01	2.01/10.02	2.03/100.10
Delivery	2.00/0.01	2.01/5.01	2.03/50.10
Stock-Level	2.00/0.01	2.01/5.01	2.03/50.10

### Test Duration

Ramp-up Time	1 hour 2 minutes
Measurement interval	2 hours 00 minutes
Transactions during measurement interval (all types)	107,950,507
Ramp-down time	15 minutes

### Checkpoints

Number of checkpoints	4
Checkpoint interval	28.05 minutes