



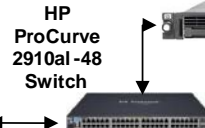
**HP ProLiant DL385 G7**  
**AMD Opteron 6282SE 2.60 GHz**  
**16 MB Cache**  
**C/S with 4 HP ProLiant DL360 G7**

TPC-C Rev. 5.11  
 TPC-Pricing 1.6.0  
 TPC-Energy 1.4.0

**Report Date: Nov 14, 2011**

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric
<b>USD \$1,046,759</b>	<b>1,207,982 tpmC</b>	<b>USD \$0.87</b>	<b>May 14, 2012</b>	<b>2.49 watts/ KtpmC</b>
Database Server Processors /Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
2/32/32 AMD Opteron <b>6282 SE 2.60 GHz</b> 16MB cache	Microsoft SQL Server 2005 Enterprise x64 Edition SP3	Windows Server 2008 R2 Enterprise Edition	Windows Server 2008 R2 Standard Edition	<b>992,000</b>

HP ProLiant DL385 G7 w/ 2 x AMD Opteron 6282 SE 2.60 GHz/512GB RAM, 1 x Smart Array P410i SAS RAID Controller, 2 x 72GB 15K SFF SAS Drives in internal bay, 5 x HP PCIe SAS HBAs, 1 x HP SC08e 6Gb 2-ports Ext PCIe SAS HBA



32 RTEs simulating 992,000 PCs



1 x HP V142 600mm 100 series Rack containing: 10 x D2700 StorageWorks Enclosures with 9 x 400GB SAS SSD (SLC) and 6 x 500GB 7.2K SFF SAS drives each, 2 x HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System containing 18 x 300GB 10K SFF SAS each

System Components	Server		Each Client	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	2	AMD Opteron 6282 SE 2.60GHz, 16MB cache, 16 cores /16 threads	2/6/12	X5670 2.93 GHz w/ 12MB cache
Memory	512 GB	16 x 16GB DDR3 8 x 32GB DDR3	24GB	12 x 2048 MB
Disk Controllers	1	Smart P410i Controller	1	Integrated Smart Array P410i Controller
	5	HP PCIe SAS HBA		
	1	HP SC08e 6Gb Dual Ext PCIe SAS HBA		
Disk Drives	90	400 GB SAS SSD (SLC)	4	300GB 10K SFF SAS
	60	500 GB 6G SAS 7.2K SFF		
	36	300 GB 10K SFF SAS		
	2	72 GB 15K SFF SAS		
Total Storage		76,944 GB		555.36 GB RAID 10



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Numerical Quantities For Reported Energy Configuration:

REC Idle Power: **2677 watts**

Average Power of REC: **3014 watts**

	Secondary Metrics	Additional Numerical Quantities				
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Full Load Watt Mins.	Idle Avg. Watts	Idle % of REC
Database Server	<b>0.50</b>	598.07	19.8%	71,769	415.76	15.5%
Storage	<b>1.20</b>	1,448.17	48.1%	173,780	1,406.40	52.5%
Application Server	<b>0.78</b>	939.60	31.2%	112,767	827.04	31%
Miscellaneous	<b>0.02</b>	28.00	0.9%	3,360	28.00	1.0%
<b>Total REC</b>	<b>2.49</b>	<b>3014</b>	100%	<b>361676</b>	<b>2677</b>	100.00%

Lowest ambient temperature at air inlet: **20.44°C**

Items in Priced Configuration not in the Reported Energy Configuration:

None

Items in Reported Energy Configuration not in the Measured Energy Configuration:

1 - HP 2011x 20" LED Monitor Part Number XP597AA#ABA

<b>Hewlett-Packard Company</b>		<b>HP ProLiant DL385 G7</b>			TPC-C Rev. 5.11		
							Report Date: November 14, 2011
Description	Part Number	Brand	Unit Price	Qty	Extended Price	3 yr. Maint. Price	
<b>Server Hardware</b>							
HP DL385G7 SFF CTO Chassis	573122-B21	1	1,261	1	1,261		
HP DL385G7 6282SE FIO Kit	654868-L21	1*	1,249	2	2,498		
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600 (DDR3-1333) Reg CAS-9 LP Kit	627808-B21	1	899	16	14,384		
HP 32GB (1x32GB) Quad Rank x4 PC3L-8500 (DDR3-1066) Reg CAS-7 LP Kit	627810-B21	1	2,999	8	23,992		
HP 72GB 6G SAS 15K SFF DP ENT HDD	512545-B21	1	279	2	558		
HP 2011x 20-inch LED Monitor	XP597AA#ABA	1	189	1	189		
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	1	39		
HP PCIe SAS HBA	631673-B21	1**	689	5	3,445		
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years , DL38x	U4545E	1	931	1		931	
HP SC08e 6Gb 2-ports Ext PCIe SAS Host Bus Adapter	614988-B21	1	199	1	199		
<b>Subtotal</b>					<b>46,565</b>	<b>931</b>	
<b>Server Storage</b>							
HP 500GB 6G SAS 7.2K SFF DP ENT HDD	507610-B21	1	349	60	20,940		
HP 400GB SAS 2.5in SSD SLC Drive	632494-B21	1	12,499	90	1,124,910		
HP 300GB 6G SAS 10K rpm SFF Quick-release DP Ent 3yr Warranty Hard Drive	507127-B21	1	369	36	13,284		
HP StorageWorks D2700 Disk Enclosure	AJ941A	1	3,399	10	33,990		
HP StorageWorks P2000 G3 SAS MSA Dual Controller SFF Array System	AW594A	1	9,350	2	18,700		
HP 3y 4h 24x7 D2000 Encl HW Support,D2000 Enclosures	UQ540E	1	1,980	10		19,800	
HP 3y 4h 24x7 MSA 2000 G3 HWSupp.MSA 2000 G3 Array	UV394E	1	3,223	2		6,446	
HP V142 600mm Pallet 100 series Rack	AF046A	1	789	1	789		
<b>Subtotal</b>					<b>1,212,613</b>	<b>26,246</b>	
<b>Server Software</b>							
Microsoft SQL Server 2005 Enterprise X64 Edition(per processor)	810-03134	2	23,432	2	46,864	Incl Below	
Microsoft Windows Server 2008 R2 Enterprise Edition	P72-04217	2	2,280	1	2,280	Incl Below	
Microsoft Problem Resolution Services		2	259	1		259	
<b>Subtotal</b>					<b>49,144</b>	<b>259</b>	
<b>Client Hardware</b>							
HP DL360G7 CTO Chassis	579237-B21	1	1,459	4	5,836		
HP X5670 DL360G6/G7 FIO Kit	588062-L21	1	1,999	8	15,992		
HP 460W CS HE Power Supply Kit	503296-B21	1	229	4	916		
HP NC365T 4-port Ethernet Server Adapter	593722-B21	1	439	8	3,512		
HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21	1	110	48	5,280		
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	1	295	16	4,720		
HP CP 3Y 4H 24x7 HW Entry300 4-Hour 24 Hour x 7 Day Coverage 3 Years	U4497E	1	750	4		3,000	
<b>Subtotal</b>					<b>36,256</b>	<b>3,000</b>	
<b>Client Software</b>							
Windows Server 2008 R2 Standard Edition	P73-04980	2	711	20	14,220	Incl. Above	
<b>Subtotal</b>					<b>14,220</b>	<b>0</b>	
<b>User Connectivity</b>							
HP ProCurve 2910al-48G Switch	J9147A#ABA	1	4,109	1	4,109		
HP 3y4h24x7 Networks Stack48 HW Support, including HP Holidays	H2893E	1	1,307	1		1,307	
CAT 6 7 Foot White Patch Cable	CB242-7W	3	2	36	56		
CAT 6 7 Foot White Patch Cable (spares)	CB242-7W	3	2	4		6	
<b>Subtotal</b>					<b>4,165</b>	<b>1,313</b>	
Large Purchase and Net 30 discount (See Note 1)	18.0%	1			(\$27,941)	(\$5,037)	
Large Purchase and Net 30 discount (See Note 2)	28.0%	1			(\$314,975)		
<b>Total</b>					<b>\$1,020,047</b>	<b>\$26,712</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 reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmark pricing 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.							
					<b>Three-Year Cost of Ownership: USD</b>	<b>\$1,046,759</b>	
					<b>tpmC Rating:</b>	<b>1,207,982</b>	
					<b>\$ / tpmC: USD</b>	<b>\$0.87</b>	
Pricing: 1=HP Direct 800-203-6748 2= Microsoft 3= deepsurplus.com							
Note 1 = Discount based on HP Direct guidance applies to all lines where pricing = 1 *ROM features available February 20, 2012 **HP PCIe SAS HBA will be available May 14, 2012							
Note 2 = Discount based on HP Direct guidance applies to SSD storage							
Note 3 = The benchmark results were audited by Lorna Livingtree of Performance Metrics							

## Numerical Quantities Summary

**MQTH, Computed Maximum Qualified Throughput**

**1,207,982 tpmC**

<b>Response Times (in seconds)</b>	<b>Average</b>	<b>90%</b>	<b>Maximum</b>
New-Order	0.33	0.49	38.10
Payment	0.25	0.48	35.95
Order-Status	0.25	0.48	26.15
Delivery (interactive portion)	0.18	0.21	24.31
Delivery (deferred portion)	0.03	0.07	30.92
Stock-Level	0.26	0.50	32.39
Menu	0.22	0.21	32.03

### **Transaction Mix, in percent of total transaction**

New-Order	44.94%
Payment	43.02%
Order-Status	4.02%
Delivery	4.01%
Stock-Level	4.01%

### **Emulation Delay (in seconds)**

**Resp.Time      Menu**

New-Order	0.10	0.10
Payment	0.10	0.10
Order-Status	0.10	0.10
Delivery (interactive)	0.10	0.10
Stock-Level	0.10	0.10

### **Keying/Think Times (in seconds)**

**Min.      Average      Max.**

New-Order	18.02/0.00	18.03/12.68	18.05/126.54
Payment	3.02/0.00	3.03/12.66	3.05/126.53
Order-Status	2.02 /0.00	2.03/10.52	2.05/105.53
Delivery (interactive)	2.02/0.00	2.03/5.31	2.05/53.03
Stock-Level	2.02/0.00	2.03/5.32	2.05/53.03

### **Test Duration**

Ramp-up time	40 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	322,536,009
Ramp down time	1 minutes

### **Checkpointing**

Number of checkpoints	4
Checkpoint interval	30 minutes