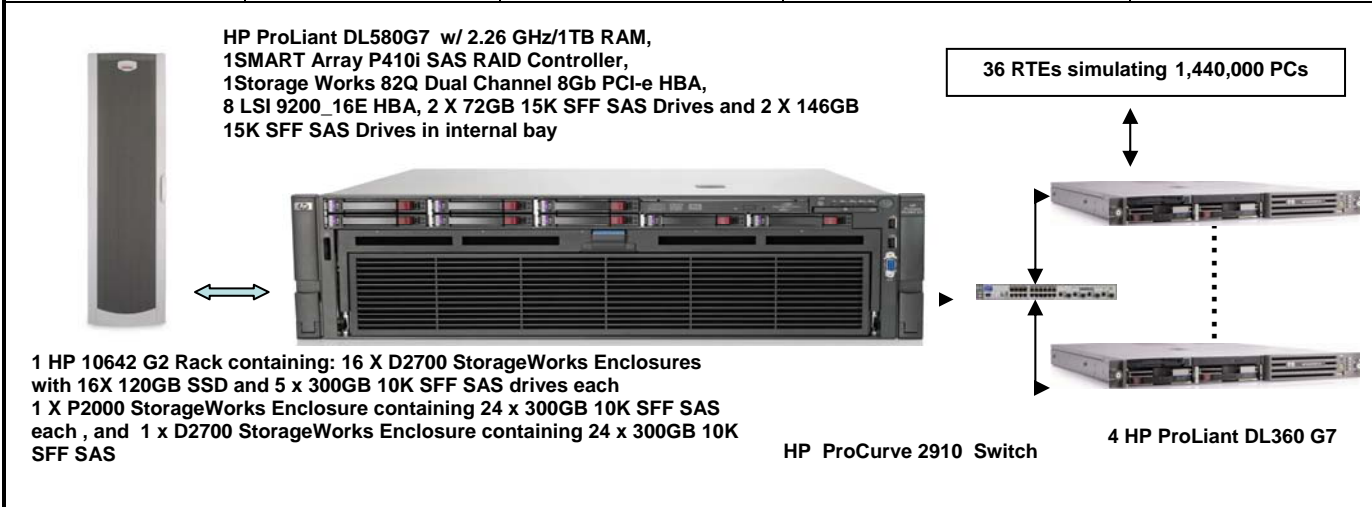


Hewlett-Packard	HP ProLiant DL580G7 2.26 GHz 24MB L3			TPC-C Rev. 5.11 TPC-Pricing 1.5.0 TPC-Energy 1.20
	Company	C/S with 4 HP ProLiant DL360 G7		Report Date: Aug 27, 2010

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric
USD \$879,563	1,807,347 tpmC	USD \$0.49	Oct 15, 2010	2.46 watts/KtpmC

Database Server Processors /Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
4/32/64 Intel 2.26 GHz 24MB cache	Microsoft SQL Server 2005 Enterprise x64 Edition SP3	Windows Server 2008 R2 Enterprise Edition	Microsoft Visual Studio 2008 Microsoft COM+	1,440,000



	Server		Each Client	
System Components	Quantity	Description	Quantity	Description
Processors/Cores/Threads	4	Intel 2.26GHz 24MB L3 cache - 8 cores /16 threads	2/6/12	2.93 GHz Intel Xeon w/ 12MB cache
Memory	1 TB	64 x 16GB DDR3	24GB	12 x 2048 MB
Disk Controllers	1	Smart P410i Controller	1	Integrated Smart Array P410i Controller
	8	LSI 9200_16E HBA		
	1	82Q 8Gb Dual Channel		
Disk Drives	128	300GB 10K SFF SAS 6G	4	300GB 10K SFF SAS
	256	120 GB SSD		
	2	146 GB 15K SFF SAS		
	2	72 GB 15K SFF SAS		
Total Storage		64,649.72 GB		555.36 GB

Hewlett-Packard		HP ProLiant DL580G7 2.26 GHz 24GB L3		TPC-C Rev. 5.11 TPC-Pricing 1.5.0 TPC-Energy 1.2.0	
Company		C/S with 4 HP ProLiant DL360 G7		Report Date: Aug 27, 2010	
Total System Cost	TPC-C Throughput	Price/Performance	Availability Date	TPC-Energy Metric	
USD \$879,563	1,807,347KtpmC	USD \$0.49	October 15, 2010	2.46 watts/ KtpmC	

Numerical Quanties For Reported Energy Configuration:

REC Idle Power: 3844 watts

Average Power of REC: 4441watts

	Secondary Metrics	Additional Numerical Quanties			
	Watts / KtpmC	Full Load Avg Watts	Full Load % of REC	Idle Avg. Watts	Idle % of REC
Database Server	0.90	1,629.61	36.7%	1,286.63	33.5%
Storage	0.93	1,677.23	37.8%	1,614.07	42.0%
Application Server	0.55	993.96	22.4%	803.76	20.9%
Miscellaneous	0.08	140.00	3.2%	140.00	3.6%
Total REC	2.46	4441	100%	3844	100%

Lowest ambient temperature at air inlet: 21.28C

Items in Priced Configuration not in the Reported Energy Configuration:

None

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

5 HP LE1851w 18.5-Inch wide Monitor Part Number NK033AA#ABA

Hewlett-Packard Company	HP ProLiant DL580G7			TPC-C Rev. 5.11		
				Report Date	27-Aug-10	
Description	Part Number	Brand	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
HP ProLiant DL580 G7 Configure-to-order Server	588857-B21	1	4,597	1	4,597	
HP DL580 G7 Intel Xeon X7560 (2.26GHz/8-core/24MB/130W) FIO 2-processor Kit	588143-L21	1	10,000	1	10,000	
HP DL580 G7 Intel Xeon X7560 (2.26GHz/8-core/24MB/130W) Processor Kit	588143-B21	1	4,999	2	9,998	
HP 16GB 4Rx4 PC3-8500R-7 Kit	500666-B21	1	1,349	64	86,336	
HP DL580G7 Memory Board	588141-B21	1	200	6	1,200	
HP DL580 G7 PCI Express Kit	588137-B21	1	349	1	349	
HP StorageWorks 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ764A	1	2,250	1	2,250	
HP LE1851w 18.5-Inch wide Monitor	NK033AA#ABA	1	159	1	159	
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	1	39	
HP 10642 G2 Pallet Universal Rack	AF001A	1	1,249	1	1,249	
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	1	519	128	66,432	
HP 120GB 3G SATA 2.5in MDL	572073-B21	1	2,199	256	562,944	
HP 72GB 6G SAS 15K SFF (2.5-inch)	512545-B21	1	349	2	698	
HP 146GB 6G SAS 15K SFF (2.5-inch)	512547-B21	1	459	2	918	
HP StorageWorks D2700 Disk Enclosure	AJ941A	1*	3,399	17	57,783	
HP 3y 4h 24x7 D2000 Encl HW Support,D2000 Enclosures	UQ540E	1	1,904	17		32,368
HP StorageWorks P2000 G3 MSA FC Dual Controller SFF	AP846A	1	10,350	1	10,350	
HP 3y 4h 24x7 MSA 2000 G3 HWSupp,MSA 2000 G3 Array	UV394E	1	1,999	1		1,999
4-Hour On-site Service, 7-Day x 24-Hour Coverage, 3 Years , DL580	U4608E	1	1,397	1		1,397
LSI 9200_16e	LSI00189	4	498	8	3,984	
LSI 9200_16e (10% spares)	LSI00189	4	498	2		996
Subtotal					819,286	36,760
Server Software						
Microsoft SQL Server 2005 Enterprise X64 Edition(per processor)	810-03134	2	23,432	4	93,728	Incl Below
Visual Studio 2008 Standard Edition	127-00166	2	275	1	275	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
Subtotal					96,283	259
Client Hardware						
HP DL360G7 CTO Chassis	579237-B21	1	1,441	4	5,764	
HP X5670 DL360G6/G7 FIO Kit	588062-L21	1	1,999	8	15,992	
HP 460W CS HE Power Supply Kit	503296-B21	1	249	4	996	
HP NC365T 4-port Ethernet Server Adapter	593722-B21	1	439	8	3,512	
HP 2GB 2Rx8 PC3-10600R-9 Kit	500656-B21	1	120	48	5,760	
HP 300GB 6G SAS 10K SFF (2.5-inch) Dual Port Enterprise 3yr Warranty	507127-B21	1	519	16	8,304	
HP LE1851w 18.5-Inch wide Monitor	NK033AA#ABA	1	159	4	636	
HP PS/2 Keyboard And Mouse Bundle	RC464AA#ABA	1	39	4	156	
HP CP 3Y 4H 24x7 HW Entry300 4-Hour 24 Hour x 7 Day Coverage 3 Years	U4497E	1	750	4		3,000
Subtotal					41,120	3,000
Client Software						
Windows Server 2008 R2 Enterprise Edition	P72-04217	2	2,280	8	18,240	Incl. Above
Windows Server 2008 R2 Standard Edition	P73-04980	2	711	4	2,844	Incl. Above
Subtotal					21,084	0
User Connectivity						
HP ProCurve 2910a-48G Switch	J9147A#ABA	1	4,569	1	4,569	
HP ProCurve3 Yr 4 hr/24x7 Onsite	H2893E	1	1,307	1		1,307
CAT 6 7 Foot Pink Patch Cable	CB242-7PK	3	2	36	58	
CAT 6 7 Foot Pink Patch Cable (spares)	CB242-7PK	3	2	4		6
Subtotal					4,627	1,313
Large Purchase and Net 30 discount (See Note 1)	16.0%	1			(\$137,759)	(\$6,411)
Total					\$844,641	\$34,921
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.						
					Three-Year Cost of Ownership: USD	\$879,563
					tpmC Rating:	1,807,347
					\$/ tpmC: USD	\$0.49
Pricing: 1=HP Direct 800-203-6748 2= Microsoft 3= deepsurplus.com 4= Microland Electronics						
Note 1 = Discount based on HP Direct guidance applies to all lines where pricing = 1 * SSD drive support in this enclosure will be available Oct 15 2010 see appendix F						
Note 2= (S) One or more component of the measured configuration have been substituted in the priced configuration. See FDR for details.						
Note 3 = The benchmark results were audited by Lorna Livingtree of Performance Metrics						
One or more components of the measured configuration have been substituted in the Priced Configuration. See the FDR for details.						

Numerical Quantities Summary

MQTH, Computed Maximum Qualified Throughput

1,807,347 tpmC

Response Times (in seconds)	Average	90%	Maximum
New-Order	0.25	0.49	10.41
Payment	0.23	0.46	21.88
Order-Status	0.26	0.49	9.83
Delivery (interactive portion)	0.18	0.32	6.40
Delivery (deferred portion)	0.09	0.18	5.20
Stock-Level	0.29	0.53	9.01
Menu	0.18	0.33	120.20

Transaction Mix, in percent of total transaction

New-Order	44.96%
Payment	43.02%
Order-Status	4.00%
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	18.03/12.06	18.06/120.53
Payment	3.02/0.00	3.03/12.06	3.05/120.53
Order-Status	2.02/0.00	2.03/10.02	2.05/100.53
Delivery (interactive)	2.02/0.00	2.03/5.07	2.06/50.53
Stock-Level	2.02/0.00	2.03/5.07	2.05/50.53

Test Duration

Ramp-up time	23 minutes
Measurement interval	120 minutes
Transactions (all types) completed during measurement interval	482,367,379
Ramp down time	9.29 minutes

Checkpointing

Number of checkpoints	4
Checkpoint interval	30 minutes