



HP ProLiant DL980 G7

TPC-H Rev. 2.14.0
 TPC Pricing Rev. 1.5.0

Report Date:
 August 30, 2011

Total System Cost

Composite Query per Hour Rating

Price/Performance

\$408,080 USD

219,887.9

\$1.86 USD

QphH @ 1000G

\$/ QphH @1000G

Database Size

Database Manager

Operating System

Other Software

Availability Date

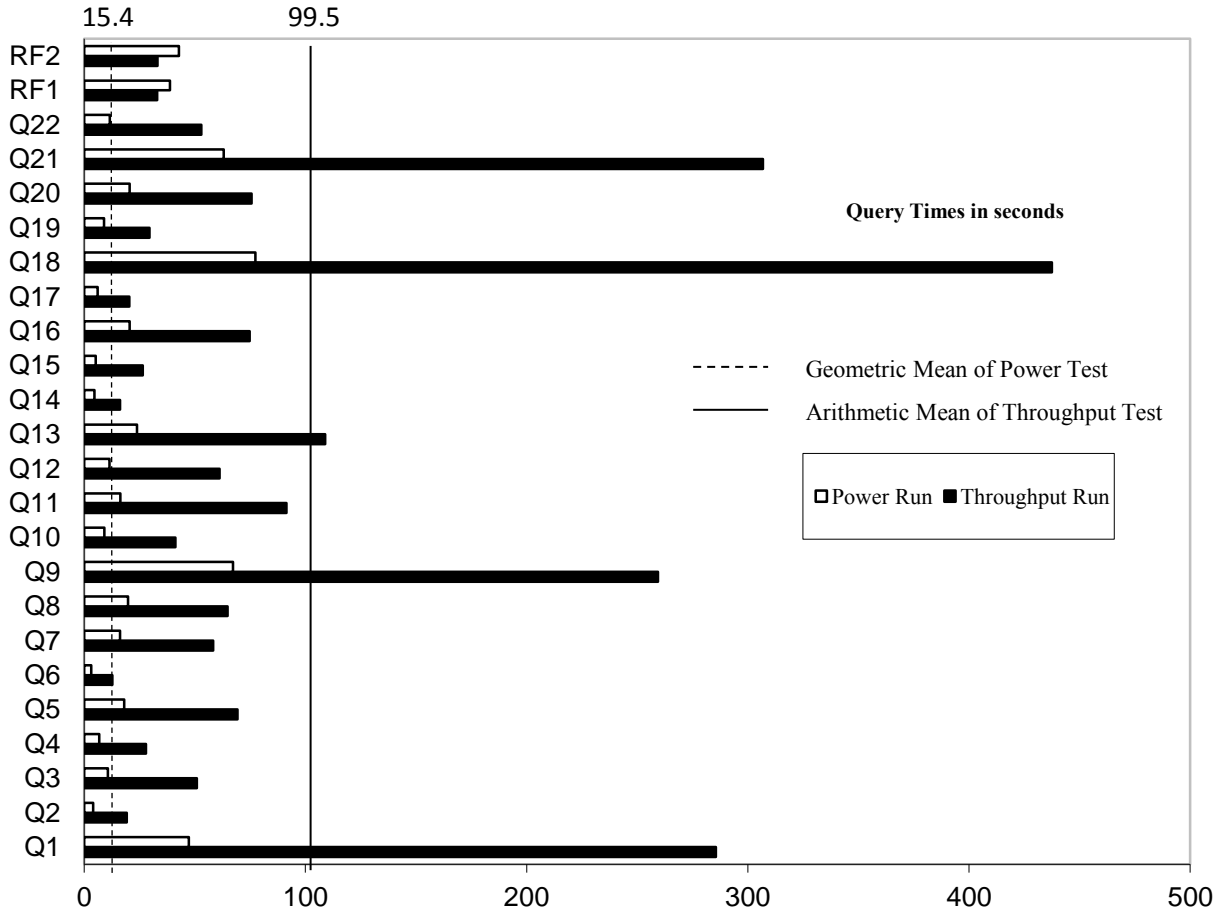
1000GB

SQL Server 2008 R2
 Enterprise Edition

Windows Server 2008
 R2 Enterprise Edition

None

August 30, 2011



Database Load Time = 1d 11h 43m 33s	Storage Redundancy Level	
Load included backup: Y	Base Tables and Auxiliary Data Structures	0
Total Data Storage / Database Size = 28.72	DBMS Temporary Space	0
Memory/Database Size = 200%	OS and DBMS Software	1

System Components	System Total	Per Node
Nodes:	1	n.a.
Intel(R) Xeon(R) CPU E7-4870 @ 2.40GHz:	8	8
Cores/Threads:	80/160	80/160
Memory:	2048GB	2048GB
OS Disk Drives(internal):	4	4
Network Interfaces (on-board GigE):	2	2
Storage Controllers LSI SAS 9200 / P411 / HP 82E 8Gb Dual FC:	10 / 3 / 1	10 / 3 / 1
MSA P2000	1	n.a.
Storage Shelves D2700:	26	n.a.
Storage Subsystem Disk Drives:	416	n.a.
Total Storage:	28,711.69 GB	n.a.



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Description	Price Key	Part Number	Unit Price	Qty.	Extended Price	3 Yr Maint Price	
Server Hardware							
HP ProLiant DL980 G7 CTO system-E7 proc	1	AM451A	\$13,199	1	\$13,199		
HP DL980 G7 E7-4870 FIO 4-processor Kit	1	650770-L21	\$34,559	1	\$34,559		
HP DL980 G7 E7-4870 4-processor Kit	1	650770-B21#0D1	\$34,559	1	\$34,559		
HP DL980 CPU Installation Assembly for E7	1	AM450A#0D1	\$3,999	1	\$3,999		
HP 16GB 4Rx4 PC3-8500R-7 Kit	1	500666-B21	\$899	128	\$115,072		
HP DL580G7/DL980G7 (E7) Memory Cartridge	1	644172-B21#0D1	\$200	8	\$1,600		
HP Slim 12.7mm SATA DVDRW Optical Kit	1	481043-B21#0D1	\$109	1	\$109		
HP PCI Express Kit	1	588137-B21#0D1	\$349	1	\$349		
HP DL980 LP PCIe I/O Expansion Module	1	AM434A#0D1	\$399	1	\$399		
HP P410i 512MB Flash Backed Write Cache	1	534916-B21#0D1	\$429	1	\$429		
HP 146GB 6G SAS 15K 2.5in DP ENT HDD	1	512547-B21#0D1	\$369	4	\$1,476		
HP 3year 4h 24x7 ProLiant DL980 HW Support	1	UV298E	\$3,205	1		\$3,205	
HP 17" FlatPanel Monitor	1	GV537A8	\$130	1	\$130		
HP PS/2 Keyboard And Mouse Bundle	1	RC464AA	\$39	1	\$39		
					Subtotal	\$205,919	\$3,205
Storage							
HP Universal Rack 10642 G2 Shock Rack	1	AF002A	\$1,489	2	\$2,978		
HP 24A High Voltage US/JP Modular PDU	1	252663-D72	\$299	2	\$598		
HP Smart Array Controller P411	1	462832-B21	\$599	3	\$1,797		
HP Smart Array Controller P411 (10% Spares)	1	462832-B21	\$599	2	\$1,198		
LSI 9200-8e SAS HBA	3	LSI00188	\$273	10	\$2,730		
LSI 9200-8e SAS HBA (10% Spares)	3	LSI00188	\$273	2	\$546		
HP Ext Mini SAS 2m Cable	1	407339-B21	\$111	26	\$2,886		
HP StorageWorks D2700 Disk Enclosure	1	AJ941A	\$3,399	26	\$88,374		
HP StorageWorks D2700 Disk Enclosure (10% Spares)	1	AJ941A	\$3,399	3	\$10,197		
HP 72GB 15k 2.5" Dual Port 6G SAS Drive	1	512545-B21	\$279	400	\$111,600		
HP 72GB 15k 2.5" Dual Port 6G SAS Drive (10% Spares)	1	512545-B21	\$279	40	\$11,160		
HP 82E 8Gb Dual-port PCI-e FC HBA	1	AJ763A	\$1,999	1	\$1,999		
HP 82E 8Gb Dual-port PCI-e FC HBA (10% Spares)	1	AJ763A	\$1,999	2	\$3,998		
HP 2m Multi-mode OM2 LC/LC FC Cable	1	221692-B21	\$75	2	\$75		
HP P2000 G3 MSA FC Dual Cntrl SFF Array	1	AP846A	\$10,350	1	\$10,350		
HP 72GB 15k 2.5" Dual Port 6G SAS Drive 3yr Warranty HD	1	512545-B21	\$279	16	\$4,464		
HP 3y 4h 24x7 MSA 2000 G3 HWSupp	1	UV394E	\$2,079	1		\$2,079	
					Subtotal	\$254,950	\$2,079
Server Software							
Windows Server 2008 R2 Enterprise Edition	2	P72-04217	\$2,280	1	\$2,280		
SQL Server 2008 R2 Enterprise Edition Server License w/ 25 CALs	2	810-08553	\$8,318	1	\$8,318	\$259	
SQL Server 2008 R2 Client Access License	2	359-05354	\$114	45	\$5,130		
					Subtotal	\$15,728	\$259
					Total Extended Price	\$476,597	\$5,543
					Total Discounts	\$73,215	\$845

Price Key: 1 - HP , 2 - Microsoft, 3 - ALLHDD.com Audited by Francois Raab of InfoSizing, Inc. (www.sizing.com)	<table border="0"> <tr> <td>Grand Total</td> <td>\$403,382</td> <td>\$4,698</td> </tr> </table>	Grand Total	\$403,382	\$4,698						
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All discounts are based on US list prices and for similar quantities and configurations. A 16% discount was based on the overall specific components pricing from vendor 1 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 configuration.	<table border="0"> <tr> <td>3 year cost of ownership USD:</td> <td>\$408,080</td> <td></td> </tr> <tr> <td>QphH @ 1000GB:</td> <td>219,887.9</td> <td></td> </tr> <tr> <td>\$ USD/QphH @ 1000GB</td> <td>\$1.86</td> <td></td> </tr> </table>	3 year cost of ownership USD:	\$408,080		QphH @ 1000GB:	219,887.9		\$ USD/QphH @ 1000GB	\$1.86	
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Sales contact: HP Sales Development, 19111 Pruneridge Ave., Cupertino, CA 95014 (408) 447 2320 or H-P direct: 800-203-6748										
<p>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 specifications. If you find that the stated prices are not available according to these terms, please inform at pricing@tpc.org. Thank you.</p>										



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Numerical Quantities

Measurement Results

Database Scale Factor	1000
Total Data Storage / Database Size	28.72
Start of Database Load	2011-08-23 20:08:42
End of Database Load	2011-08-25 07:52:15
Database Load Time	1d 11h 43m 33s
Query Streams for Throughput Test	7
TPC-H Power	233,119.3
TPC-H Throughput	207,407.4
TPC-H Composite Query-per-Hour (QphH@1000GB)	219,887.9
Total System Price over 3 Years	\$408,080 USD
TPC-H Price/Performance Metric (\$ USD / QphH@1000GB)	\$ 1.86 USD / QphH@1000GB

Measurement Interval

Measurement Interval in Throughput Test 2,672.3 seconds

Duration of Stream Execution

Power Stream	Seed	RF1 Start Time		Query Start Time		RF2 Start Time		Duration
		RF1 End Time	Query End Time	RF2 End Time				
	825075215	08/25/11	7:56:55	08/25/11	7:57:34	08/25/11	8:05:26	0:09:13
		08/25/11	7:57:34	08/25/11	8:05:26	08/25/11	8:06:09	

Throughput Stream	Seed	Query Start Time		Duration	RF1 Start Time		RF2 Start Time	
		Query End Time	RF1 End Time		RF2 End Time			
1	825075216	08/25/11	8:06:09	0:36:14	08/25/11	8:42:54	08/25/11	8:43:28
		08/25/11	8:42:23		08/25/11	8:43:28	08/25/11	8:44:06
2	825075217	08/25/11	8:06:09	0:36:45	08/25/11	8:44:06	08/25/11	8:44:40
		08/25/11	8:42:53		08/25/11	8:44:40	08/25/11	8:45:16
3	825075218	08/25/11	8:06:09	0:36:44	08/25/11	8:45:17	08/25/11	8:45:49
		08/25/11	8:42:53		08/25/11	8:45:49	08/25/11	8:46:23
4	825075219	08/25/11	8:06:09	0:36:06	08/25/11	8:46:24	08/25/11	8:46:56
		08/25/11	8:42:15		08/25/11	8:46:56	08/25/11	8:47:26
5	825075220	08/25/11	8:06:09	0:36:32	08/25/11	8:47:27	08/25/11	8:48:00
		08/25/11	8:42:42		08/25/11	8:48:00	08/25/11	8:48:34
6	825075221	08/25/11	8:06:09	0:36:41	08/25/11	8:48:34	08/25/11	8:49:07
		08/25/11	8:42:50		08/25/11	8:49:07	08/25/11	8:49:37
7	825075222	08/25/11	8:06:10	0:36:28	08/25/11	8:49:38	08/25/11	8:50:10
		08/25/11	8:42:38		08/25/11	8:50:10	08/25/11	8:50:41



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TPC-H Timing Intervals (in seconds):

Query	Stream 0	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5	Stream 6	Stream 7	Min Qi	Max Qi	Avg. Qi
Q1	47.2	290.6	298.5	292.9	294.4	283.0	288.9	250.5	250.5	298.5	285.5
Q2	4.0	20.0	24.4	21.4	17.1	16.9	18.5	16.3	16.3	24.4	19.2
Q3	10.6	59.6	42.7	30.8	61.0	45.7	63.8	52.6	30.8	63.8	50.9
Q4	6.7	23.0	34.1	27.4	27.5	27.9	30.6	24.3	23.0	34.1	27.8
Q5	18.0	63.0	63.4	64.4	75.6	80.0	83.8	54.2	54.2	83.8	69.2
Q6	3.2	11.3	9.1	13.7	10.0	14.3	15.4	14.6	9.1	15.4	12.6
Q7	16.2	59.1	58.6	68.0	57.9	57.6	54.2	52.4	52.4	68.0	58.3
Q8	19.8	63.0	53.8	65.2	66.8	67.9	69.1	67.4	53.8	69.1	64.7
Q9	67.2	256.3	279.6	261.2	259.6	273.2	228.5	256.8	228.5	279.6	259.3
Q10	9.1	36.8	39.5	37.2	35.6	30.4	59.1	49.5	30.4	59.1	41.2
Q11	16.3	66.7	98.2	114.0	60.8	79.8	108.4	111.4	60.8	114.0	91.3
Q12	11.4	80.0	57.8	54.3	56.1	58.8	57.4	64.0	54.3	80.0	61.2
Q13	23.9	99.3	99.4	127.8	92.9	129.7	123.9	89.8	89.8	129.7	109.0
Q14	4.6	13.5	21.3	17.4	16.6	13.5	15.1	15.4	13.5	21.3	16.1
Q15	5.1	24.2	28.2	25.2	26.4	28.7	27.6	24.3	24.2	28.7	26.4
Q16	20.5	82.8	75.8	73.3	66.2	66.7	74.7	83.8	66.2	83.8	74.8
Q17	6.1	20.7	24.3	23.1	24.6	17.2	14.5	17.7	14.5	24.6	20.3
Q18	77.3	440.6	439.1	442.6	392.1	436.5	408.7	502.3	392.1	502.3	437.4
Q19	8.9	32.0	32.0	23.2	30.9	30.2	25.3	33.2	23.2	33.2	29.5
Q20	20.5	61.3	79.9	91.1	84.7	71.9	76.9	63.1	61.3	91.1	75.6
Q21	63.1	319.8	286.8	282.6	339.1	321.9	302.7	294.5	282.6	339.1	306.8
Q22	11.6	49.9	58.0	47.0	70.3	40.4	54.1	50.2	40.4	70.3	52.8
RF1	38.8	33.9	33.8	32.2	32.2	33.3	32.6	32.6	32.2	33.9	32.9
RF2	42.8	38.0	35.9	34.1	30.1	33.6	29.8	30.5	29.8	38.0	33.1