



HP ProLiant DL380 G6

TPC-H Rev. 2.8.0

Report Date:
Aug 27, 2009

Total System Cost

\$54,859 USD

Composite Query per Hour Metric

51,422.4
QphH@100GB

Price / Performance

\$1.07 USD
\$/QphH@100GB

Database Size

100GB

Database Manager

Microsoft SQL Server 2008 Enterprise x64 Edition SP1

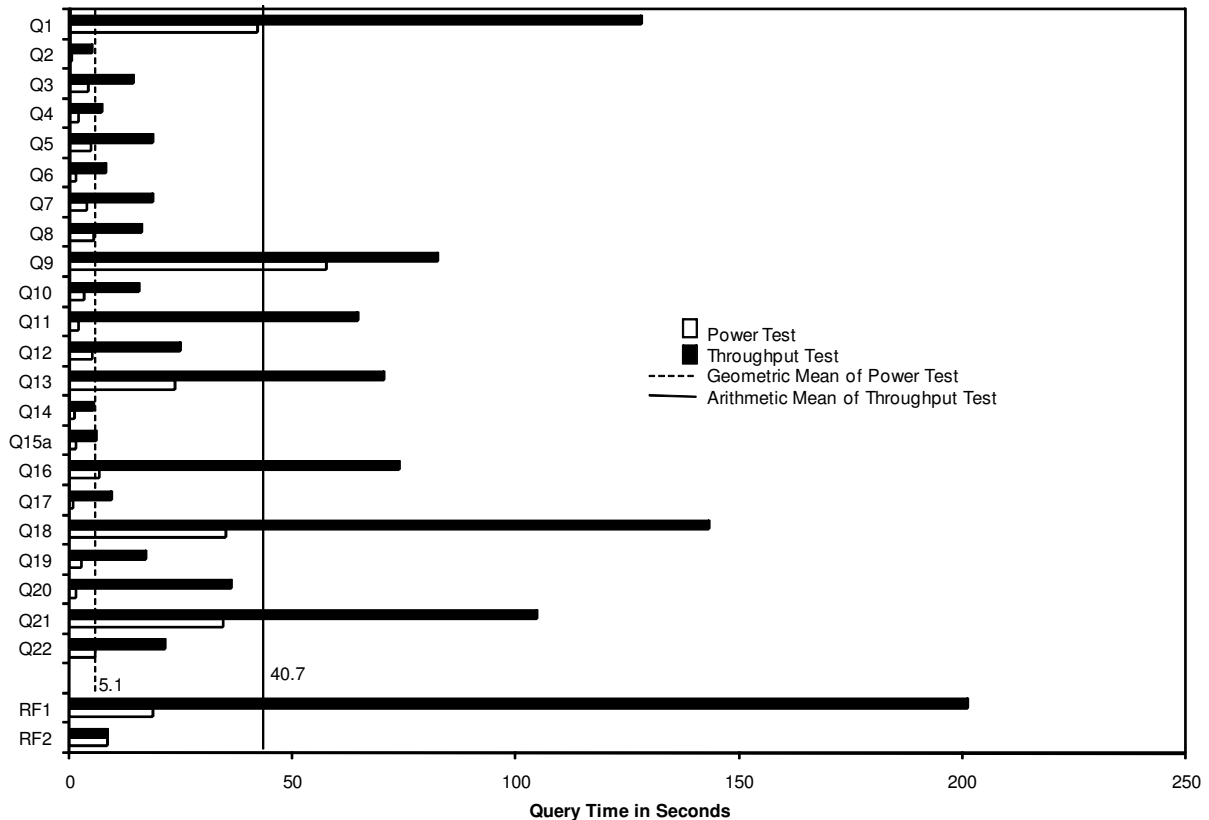
Operating System

Windows Server 2008 Enterprise Edition x64 SP2

Other Software

Availability Date

Sep 14, 2009



Database Load Time = 0:37:21

Load Included Backup: Y

Total Data Storage / Database Size = 8.64

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): Y

RAID (All): N

System Configuration:

Processors : 2x 2.93 GHz Quad Core Intel X5570
Cores : 8
Threads : 16
Memory : 144 GB
OS Disk Drives : 2x 72 GB 15K rpm SFF SAS
Network : 4x on-board GigE
Disk Controllers : 4x Smart Array P410, 1x Smart Array P411
Disks : 12x 60GB SSD SATA SFF
Total Disk Storage: 864 GB

Note: Database Size includes only raw data (e.g., no temp, index, redundant storage space, etc).



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Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price	
Server Hardware							
Brand Pricing							
HP DL380G6 CTO Chassis	494329-B21	1	1,486	1	1,486		
HP X5570 DL380 G6 FIO Kit	500094-L21	1	1,999	2	3,998		
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21	1	990	18	17,820		
HP DL380G6 3 Slot PCI-E Riser Kit	500579-B21	1	99	1	99		
HP DL380/385G6 8SFF Cage Kit	516914-B21	1	199	1	199		
HP P411/256 FIO SA Cntrlr w/Battery	491193-B21	1	549	1	549		
HP Smart Array P410/512 BBWC Controller	462864-B21	1	649	3	1,947		
HP 72GB 15K rpm Hot Plug SAS 2.5 Dual Port Hard Drive	418371-B21	1	359	2	718		
HP LV1561w 15.6-inch Wide LCD Monitor	NJ711A8#ABA	1	110	1	110		
HP PS/2 Standard Keyboard	GY071AV#ABA	1	7	1	7		
HP PS/2 2-Button Scroll Mouse	EW344AV	1	2	1	2		
HP 3y 4h 24x7 ProLiant DL38x HW Support	U4545E	1	837	1		837	
Subtotal					26,935	837	
Storage							
HP 60GB 3G SATA 2.5in MDL	572071-B21*	1	1,549	12	18,588		
Subtotal					18,588	0	
Hardware and Maintenance Discount							
Large Purchase and Net 30 discount	14.0%	1			(\$6,373)	(\$117)	
Hardware Subtotal					39,150	720	
Software							
SQL Server 2008 Enterprise x64 Edition	810-07580	Microsoft	2	8,487	1	8,487	incl. bellow
Windows Server 2008 Enterprise Edition (x64)	P72-03195	Microsoft	2	2,357	1	2,357	incl. bellow
SQL Server 2008 Client License	359-01912	Microsoft	2	156	25	3,900	incl. bellow
Microsoft Problem Resolution Services		Microsoft	2	245	1	245	
Subtotal					14,744	245	
Total					\$53,894	\$965	

Three-Year Cost of Ownership:	\$54,859 USD
QpH @ 100GB:	51422.4
\$ / QpH @ 100GB:	\$1.07 USD

Pricing: 1=HP Direct: 800-203-6748; 2=Microsoft

Note 1 = Discount based on HP Direct guidance with large purchase and Net 30 discount. Applies to all lines with 1 in pricing column.

* = These components are not immediately orderable. See the FDR for more information.

Audited by: Lorna Livingtree of Performance Metrics Inc.

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 the TPC at pricing@tpc.org. Thank you.



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Numerical Quantities

Measurement Results:

Database Scale Factor	= 100
Total Data Storage / Database Size	= 8.64
Start of Database Load	= 2009-08-20 13:53:40
End of Database Load	= 2009-08-20 14:31:01
Database Load Time	= 00:37:21
Query Streams for Throughput Test	= 5
TPC-H Power	= 70,048.5
TPC-H Throughput	= 37,749.1
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 51,422.4
Total System Price Over 3 Years	= \$54,859
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$1.07 USD

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 1,049.0 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	820143101	8/20/2009	15:51:53	8/20/2009	15:56:27	0:04:34
Stream01	820143102	8/20/2009	15:56:28	8/20/2009	16:12:09	0:15:41
Stream02	820143103	8/20/2009	15:56:28	8/20/2009	16:10:44	0:14:16
Stream03	820143104	8/20/2009	15:56:28	8/20/2009	16:12:17	0:15:49
Stream04	820143105	8/20/2009	15:56:28	8/20/2009	16:10:44	0:14:16
Stream05	820143106	8/20/2009	15:56:28	8/20/2009	16:11:02	0:14:34
Refresh00		8/20/2009	15:51:53	8/20/2009	15:56:28	0:04:35
Refresh01		8/20/2009	16:12:17	8/20/2009	16:12:36	0:00:19
Refresh02		8/20/2009	16:12:36	8/20/2009	16:12:56	0:00:20
Refresh03		8/20/2009	16:12:56	8/20/2009	16:13:16	0:00:21
Refresh04		8/20/2009	16:13:16	8/20/2009	16:13:37	0:00:20
Refresh05		8/20/2009	16:13:37	8/20/2009	16:13:57	0:00:20



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TPC-H Timing Intervals (in seconds)

Query	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08
Stream 00	42.3	0.7	4.3	2.1	5.0	1.5	4.1	5.5
Stream 01	72.1	2.8	19.2	4.1	20.0	19.1	16.8	11.5
Stream 02	125.0	5.1	17.7	8.7	13.1	5.1	17.6	15.8
Stream 03	180.9	6.4	4.0	7.4	21.2	6.2	19.0	17.1
Stream 04	129.0	7.1	19.7	6.7	16.2	5.2	21.1	18.9
Stream 05	134.0	4.4	11.4	9.6	22.9	6.7	19.8	18.2
Min Qi	72.1	2.8	4.0	4.1	13.1	5.1	16.8	11.5
Max Qi	180.9	7.1	19.7	9.6	22.9	19.1	21.1	18.9
Avg Qi	128.2	5.2	14.4	7.3	18.7	8.5	18.9	16.3
Query	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	57.5	3.3	2.1	5.2	23.6	1.3	1.5	6.7
Stream 01	92.3	11.1	83.0	37.6	62.9	4.2	6.1	155.1
Stream 02	82.4	27.1	22.1	21.9	81.4	6.1	5.4	39.4
Stream 03	80.4	14.0	188.3	8.7	52.7	6.1	6.4	30.3
Stream 04	92.8	11.0	19.6	21.3	60.0	6.7	7.2	44.6
Stream 05	65.2	15.5	11.1	35.8	96.6	5.4	6.1	100.3
Min Qi	65.2	11.0	11.1	8.7	52.7	4.2	5.4	30.3
Max Qi	92.8	27.1	188.3	37.6	96.6	6.7	7.2	155.1
Avg Qi	82.6	15.7	64.8	25.1	70.7	5.7	6.2	73.9
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	0.8	35.0	2.7	1.6	34.4	6.0	18.8	8.5
Stream 01	9.3	143.7	8.6	39.6	100.2	22.1	11.1	8.2
Stream 02	10.3	156.3	10.7	55.0	105.1	24.5	10.4	9.2
Stream 03	12.8	135.5	20.4	17.2	97.6	16.2	12.2	8.3
Stream 04	6.4	147.2	16.9	50.6	123.3	25.1	12.0	8.1
Stream 05	8.8	134.0	30.2	19.8	98.3	20.1	11.4	8.8
Min Qi	6.4	134.0	8.6	17.2	97.6	16.2	0.0	8.1
Max Qi	12.8	156.3	30.2	55.0	123.3	25.1	12.2	9.2
Avg Qi	9.5	143.3	17.4	36.4	104.9	21.6	9.2	8.5