



HP ProLiant DL380 G6

TPC-H Rev. 2.8.0

Report Date:
Sep 4, 2009

Total System Cost

\$55,246 USD

Composite Query per Hour Metric

51,085.6
QphH@100GB

Price / Performance

\$1.09 USD
\$ / QphH@100GB

Database Size

100GB

Database Manager

Microsoft SQL Server 2008 Enterprise x64 Edition SP1

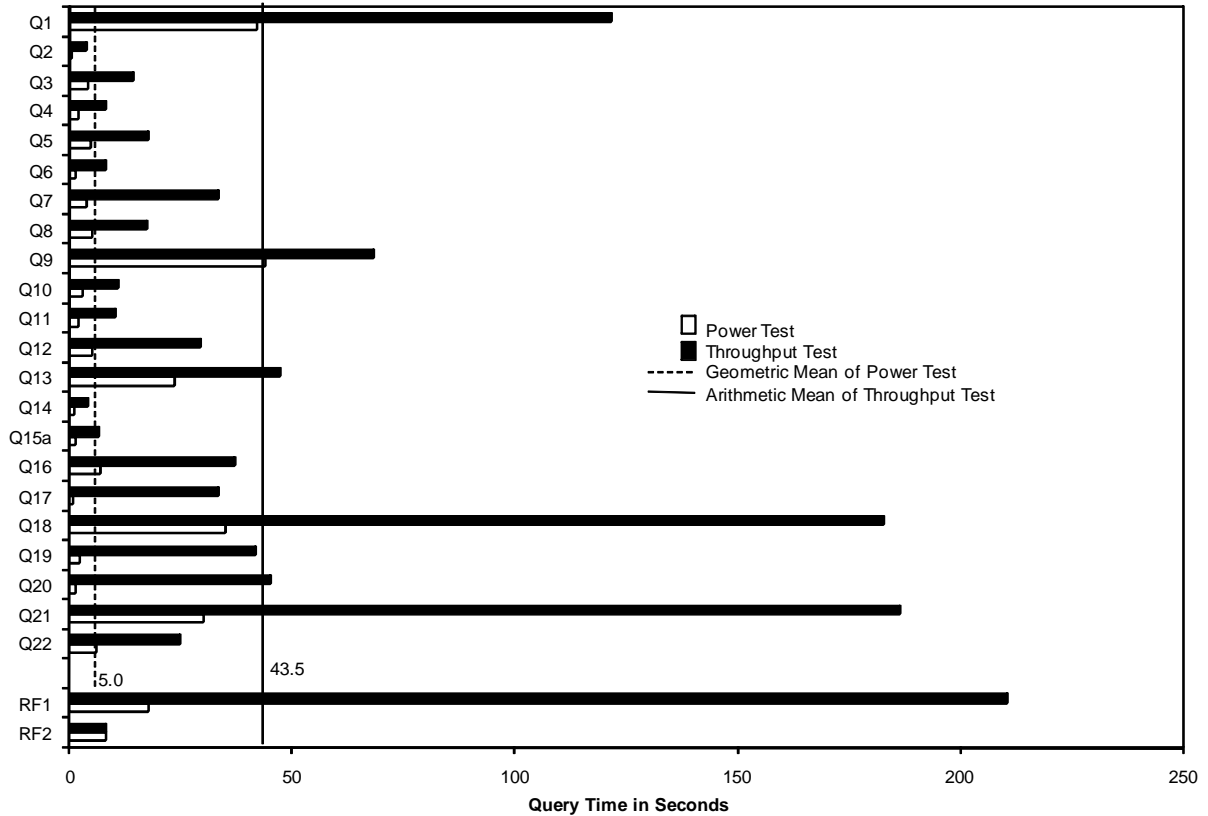
Operating System

Windows Server 2008 Enterprise Edition x64 SP2

Other Software

Availability Date

Oct 5, 2009



Database Load Time = 1:18:41

Load Included Backup: Y

Total Data Storage / Database Size = 7.58

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 : 1x Smart Array P410
Disks : 4x FusionIO ioDrive SSD 80GB , 2x 146 GB 10K rpm SFF SAS
Total Disk Storage: 758 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	HP	1,486	1	1,486	
HP X5570 DL380 G6 FIO Kit	500094-L21	HP	1,999	2	3,998	
HP 8GB 2Rx4 PC3-8500R-7 Kit	516423-B21	HP	990	18	17,820	
HP DL380G6 3 Slot PCI-E Riser Kit	500579-B21	HP	99	1	99	
HP 72GB 15K rpm Hot Plug SAS 2.5 Dual Port Hard Drive	418371-B21	HP	359	2	718	
HP 146GB 6G SAS 10K SFF (2.5") Dual Port Hard Drive	507125-B21	HP	349	2	698	
HP LV1561w 15.6-inch Wide LCD Monitor	NJ711A8#ABA	HP	110	1	110	
HP PS/2 Standard Keyboard	GY071AV#ABA	HP	7	1	7	
HP PS/2 2-Button Scroll Mouse	EW344AV	HP	2	1	2	
HP 3y 4h 24x7 ProLiant DL38x HW Support	U4545E	HP	837	1		837
				Subtotal	24,938	837
Storage						
Fusion-io ioDrive 80GB		FusionIO	3,015	4	12,060	
Fusion-io ioDrive 80GB - spares		FusionIO	3,015	2		6,030
				Subtotal	12,060	6,030
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	14.0%	HP		1		
				Hardware Subtotal	(\$3,491)	(\$117)
Software						
SQL Server 2008 Enterprise x64 Edition	810-07580	Microsoft	8,487	1	8,487	incl. bellow
Windows Server 2008 Enterprise Edition (x64)	P72-03195	Microsoft	2,357	1	2,357	incl. bellow
SQL Server 2008 Client License	359-01912	Microsoft	156	25	3,900	incl. bellow
Microsoft Problem Resolution Services		Microsoft	245	1		245
				Subtotal	14,744	245
				Total	\$48,251	\$6,995
Three-Year Cost of Ownership:					\$55,246 USD	
QpH @ 100GB:					51085.6	
\$/ QpH @ 100GB:					\$1.09 USD	
Pricing: 1=HP Direct: 800-203-6748; 2=Microsoft; 3=Dell.com						
Note 1 = Discount based on HP Direct guidance with large purchase and Net 30 discount. Applies to all lines with 1 in pricing column.						

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 at pricing@tpc.org. Thank you.



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Numerical Quantities

Measurement Results:

Database Scale Factor	= 100
Total Data Storage / Database Size	= 7.58
Start of Database Load	= 2009-09-02 21:48:15
End of Database Load	= 2009-09-02 23:06:56
Database Load Time	= 01:18:41
Query Streams for Throughput Test	= 5
TPC-H Power	= 72,110.5
TPC-H Throughput	= 36,190.8
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 51,085.6
Total System Price Over 3 Years	= \$56,836
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$1.12 USD

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 1,094.2 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	902230656	9/3/2009	8:33:51	9/3/2009	8:38:06	0:04:15
Stream01	902230657	9/3/2009	8:38:06	9/3/2009	8:54:41	0:16:35
Stream02	902230658	9/3/2009	8:38:06	9/3/2009	8:53:45	0:15:39
Stream03	902230659	9/3/2009	8:38:06	9/3/2009	8:54:39	0:16:33
Stream04	902230660	9/3/2009	8:38:06	9/3/2009	8:52:38	0:14:32
Stream05	902230661	9/3/2009	8:38:06	9/3/2009	8:54:27	0:16:21
Refresh00		9/3/2009	8:33:51	9/3/2009	8:38:06	0:04:16
Refresh01		9/3/2009	8:54:41	9/3/2009	8:55:02	0:00:21
Refresh02		9/3/2009	8:55:02	9/3/2009	8:55:24	0:00:22
Refresh03		9/3/2009	8:55:24	9/3/2009	8:55:42	0:00:18
Refresh04		9/3/2009	8:55:42	9/3/2009	8:56:01	0:00:19
Refresh05		9/3/2009	8:56:01	9/3/2009	8:56:21	0:00:20



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TPC-H Timing Intervals (in seconds)

Query	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08
Stream 00	42.2	0.6	4.3	2.1	5.0	1.5	4.1	5.1
Stream 01	94.4	3.7	19.9	2.4	25.9	20.8	55.8	12.0
Stream 02	146.8	2.7	15.9	10.5	16.5	4.7	60.7	15.8
Stream 03	61.0	6.0	9.8	9.2	13.8	5.4	11.0	10.5
Stream 04	141.3	3.9	10.1	8.6	10.4	5.4	19.1	31.2
Stream 05	165.1	4.2	16.1	10.3	23.1	5.9	21.4	18.6
Min Qi	61.0	2.7	9.8	2.4	10.4	4.7	11.0	10.5
Max Qi	165.1	6.0	19.9	10.5	25.9	20.8	60.7	31.2
Avg Qi	121.7	4.1	14.4	8.2	17.9	8.4	33.6	17.6
Query	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	44.1	3.0	2.2	5.2	23.6	1.3	1.6	7.2
Stream 01	44.7	16.0	9.0	41.0	40.6	2.8	7.4	38.3
Stream 02	71.2	9.6	12.6	14.6	47.2	2.6	5.9	43.3
Stream 03	102.3	10.4	9.9	45.8	46.1	6.7	6.5	37.5
Stream 04	60.1	8.3	8.2	27.1	60.9	4.5	6.3	37.2
Stream 05	64.2	10.5	12.9	20.1	42.8	4.6	7.3	29.7
Min Qi	44.7	8.3	8.2	14.6	40.6	2.6	5.9	29.7
Max Qi	102.3	16.0	12.9	45.8	60.9	6.7	7.4	43.3
Avg Qi	68.5	11.0	10.5	29.7	47.5	4.2	6.7	37.2
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	0.8	35.2	2.4	1.6	30.2	6.1	17.9	8.4
Stream 01	90.1	163.8	14.6	64.7	204.6	22.5	12.2	8.5
Stream 02	5.6	163.7	61.3	85.4	126.3	16.4	13.3	8.9
Stream 03	12.2	203.9	24.0	15.9	306.3	39.4	10.1	7.9
Stream 04	17.4	164.0	44.9	45.9	142.7	15.4	10.4	8.1
Stream 05	42.2	218.5	64.7	14.6	153.0	31.1	11.3	8.2
Min Qi	5.6	163.7	14.6	14.6	126.3	15.4	0.0	7.9
Max Qi	90.1	218.5	64.7	85.4	306.3	39.4	13.3	8.9
Avg Qi	33.5	182.8	41.9	45.3	186.6	25.0	9.0	8.3