



# HP ProLiant DL380 G6

TPC-H Rev. 2.8.0

Report Date:  
Aug 3, 2009

Total System Cost

**\$55,100 USD**

Composite Query per Hour Metric

**51,180.5**  
QphH@100GB

Price / Performance

**\$1.08 USD**  
\$/QphH@100GB

Database Size

**100GB**

Database Manager

**Microsoft SQL Server 2008 Enterprise x64 Edition SP1**

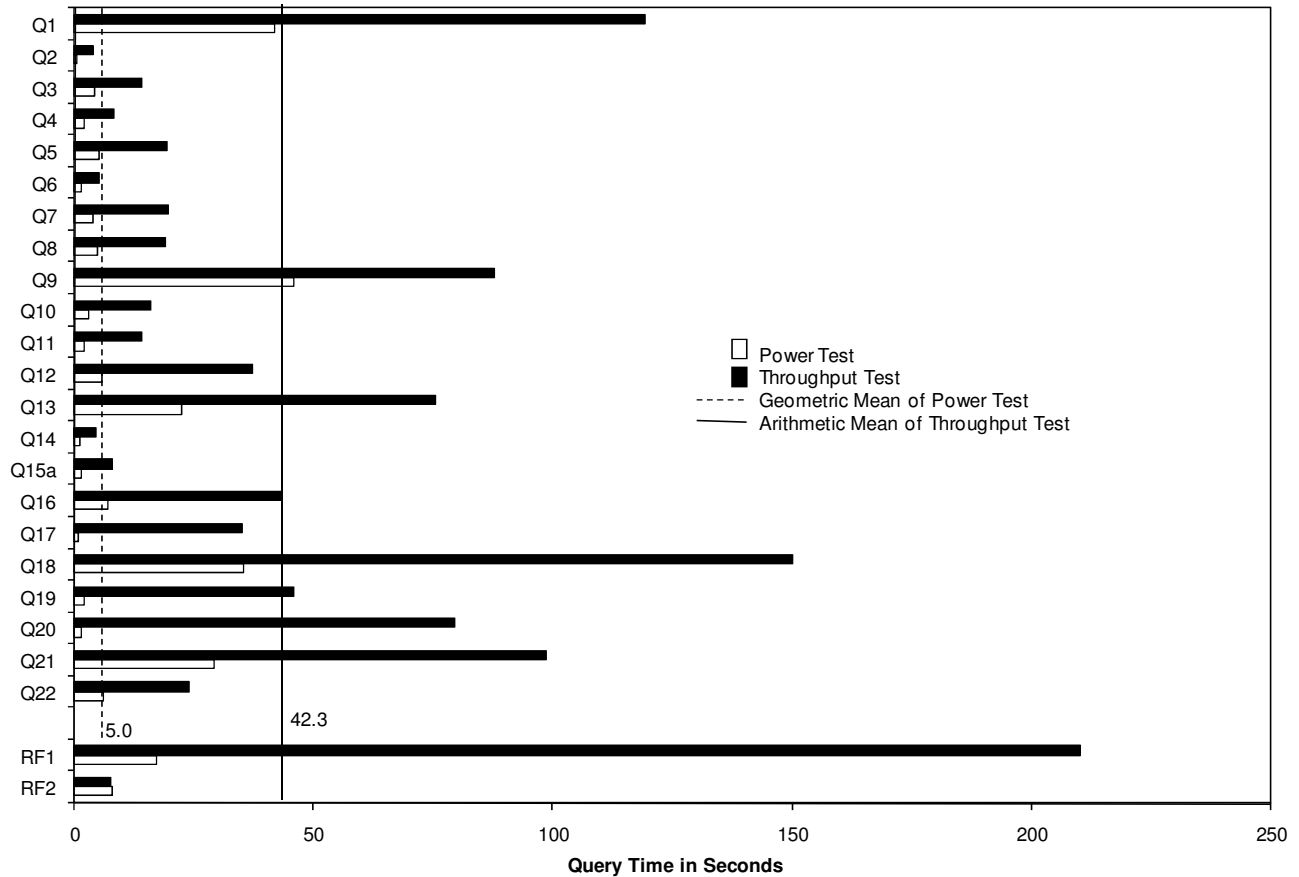
Operating System

**Windows Server 2008 Enterprise Edition x64 SP2**

Other Software

Availability Date

**Aug 12, 2009**



Database Load Time = 0:51:16

Load Included Backup: Y

Total Data Storage / Database Size = 4.64

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 :** 1x Smart Array P410, 1x Smart Array P411  
**Disks :** 4x FusionIO ioDrive SSD 80GB  
**Total Disk Storage:** 464 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	
<b>Server Hardware</b>							
<b>Brand Pricing</b>							
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 P411/256 FIO SA Cntrlr w/Battery	491193-B21	1	549	1	549		
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	
<b>Subtotal</b>					<b>24,789</b>	<b>837</b>	
<b>Storage</b>							
Fusion-io ioDrive 80GB	1748409	3	3,012	4	12,048		
Fusion-io ioDrive 80GB - spares	1748409	3	3,012	2		6,024	
<b>Subtotal</b>					<b>12,048</b>	<b>6,024</b>	
<b>Hardware and Maintenance Discount</b>							
Large Purchase and Net 30 discount	14.0%	1			(\$3,470)	(\$117)	
<b>Hardware Subtotal</b>					<b>33,367</b>	<b>6,744</b>	
<b>Software</b>							
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
<b>Subtotal</b>					<b>14,744</b>	<b>245</b>	
<b>Total</b>					<b>\$48,111</b>	<b>\$6,989</b>	

**Three-Year Cost of Ownership: \$55,100 USD****QpH @ 100GB: 51180.5****\$ / QpH @ 100GB: \$1.08 USD**

Pricing: 1=HP Direct: 800-203-6748; 2=Microsoft; 3=CDW

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

Note: The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics, Inc. (www.perfmetrics.com).

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

**Audited by: Lorna Livingtree of Performance Metrics Inc.**

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### Numerical Quantities

#### Measurement Results:

Database Scale Factor	= 100
Total Data Storage / Database Size	= 4.64
Start of Database Load	= 2009-07-26 11:26:55
End of Database Load	= 2009-07-26 12:18:11
Database Load Time	= 00:51:16
Query Streams for Throughput Test	= 5
TPC-H Power	= 72,134.0
TPC-H Throughput	= 36,313.6
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 51,180.5
Total System Price Over 3 Years	= \$55,100
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$1.08 USD

#### Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 1,090.5 seconds
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#### Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	726121811	7/26/2009	15:24:59	7/26/2009	15:29:14	0:04:15
Stream01	726121812	7/26/2009	15:29:14	7/26/2009	15:45:16	0:16:02
Stream02	726121813	7/26/2009	15:29:14	7/26/2009	15:43:50	0:14:35
Stream03	726121814	7/26/2009	15:29:14	7/26/2009	15:45:53	0:16:38
Stream04	726121815	7/26/2009	15:29:14	7/26/2009	15:44:11	0:14:56
Stream05	726121816	7/26/2009	15:29:14	7/26/2009	15:44:31	0:15:16
Refresh00		7/26/2009	15:24:59	7/26/2009	15:29:14	0:04:16
Refresh01		7/26/2009	15:45:53	7/26/2009	15:46:13	0:00:20
Refresh02		7/26/2009	15:46:13	7/26/2009	15:46:33	0:00:21
Refresh03		7/26/2009	15:46:33	7/26/2009	15:46:51	0:00:18
Refresh04		7/26/2009	15:46:51	7/26/2009	15:47:08	0:00:17
Refresh05		7/26/2009	15:47:08	7/26/2009	15:47:25	0:00:17



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## TPC-H Timing Intervals (in seconds)

Query	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08
Stream 00	42.0	0.6	4.4	2.1	5.1	1.6	4.1	5.0
Stream 01	58.0	4.6	16.8	6.5	21.4	6.6	26.0	13.6
Stream 02	146.8	3.3	15.8	7.7	14.9	5.0	15.6	12.6
Stream 03	93.8	3.8	4.2	6.7	15.9	3.2	32.5	25.3
Stream 04	107.4	3.2	15.5	13.8	14.5	7.9	11.2	30.6
Stream 05	190.9	5.0	19.2	7.5	30.5	4.2	13.6	13.2
Min Qi	58.0	3.2	4.2	6.5	14.5	3.2	11.2	12.6
Max Qi	190.9	5.0	19.2	13.8	30.5	7.9	32.5	30.6
Avg Qi	119.4	4.0	14.3	8.4	19.4	5.4	19.8	19.1
Query	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	45.8	3.2	2.1	5.8	22.6	1.3	1.5	7.2
Stream 01	48.5	13.6	17.2	78.7	170.0	5.0	9.5	47.6
Stream 02	123.1	11.2	12.6	39.8	66.5	5.8	4.6	31.9
Stream 03	132.6	31.3	19.7	9.4	28.3	2.7	11.7	7.1
Stream 04	89.3	11.1	8.5	23.8	45.0	7.0	8.5	35.4
Stream 05	46.3	12.4	12.6	34.8	67.7	3.3	6.1	94.9
Min Qi	46.3	11.1	8.5	9.4	28.3	2.7	4.6	7.1
Max Qi	132.6	31.3	19.7	78.7	170.0	7.0	11.7	94.9
Avg Qi	88.0	15.9	14.1	37.3	75.5	4.8	8.1	43.4
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	0.8	35.6	2.3	1.6	29.4	6.1	17.4	7.9
Stream 01	24.1	112.9	26.2	113.6	95.3	46.7	12.1	7.6
Stream 02	53.4	155.1	17.8	36.0	80.3	15.6	11.6	8.9
Stream 03	43.9	182.8	53.5	155.8	118.7	15.7	10.5	7.2
Stream 04	20.6	143.4	97.5	74.5	101.3	26.9	9.3	7.4
Stream 05	34.2	156.0	34.8	17.5	97.0	14.8	9.4	7.7
Min Qi	20.6	112.9	17.8	17.5	80.3	14.8	9.3	7.2
Max Qi	53.4	182.8	97.5	155.8	118.7	46.7	12.1	8.9
Avg Qi	35.2	150.0	46.0	79.5	98.5	23.9	10.6	7.8