



HP ProLiant DL380 G6

TPC-H Rev. 2.8.0

Report Date:
Oct 7, 2009

Total System Cost

\$90,352 USD

Composite Query per Hour Metric

50,738.4
QphH@100GB

Price / Performance

\$1.79 USD
\$/QphH@100GB

Database Size

100GB

Database Manager

Microsoft SQL Server 2008 Enterprise x64 Edition SP1

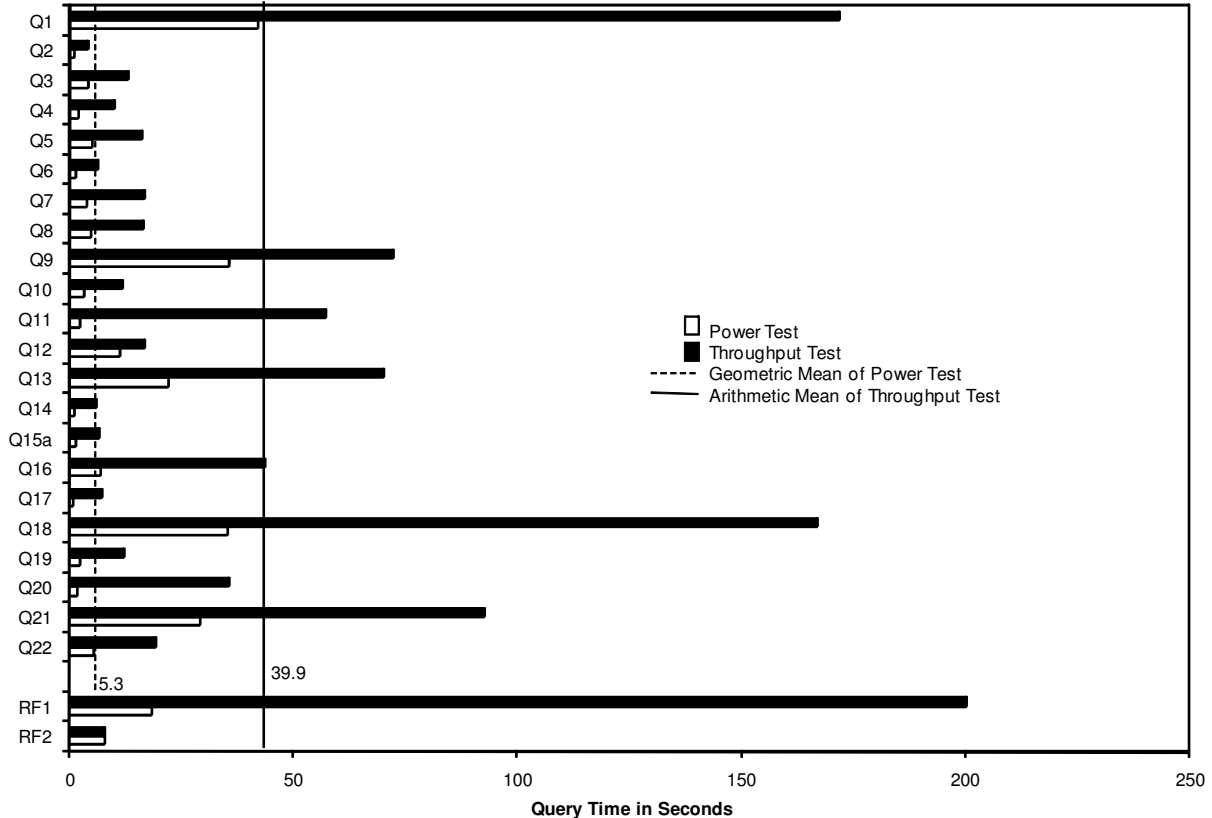
Operating System

Windows Server 2008 Enterprise Edition x64 SP2

Other Software

Availability Date

Oct 7, 2009



Database Load Time = 0:30:28

Load Included Backup: Y

Total Data Storage / Database Size = 73.44

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 P411, 1x Smart Array P410i onboard
Disks : 100x 72GB 15k rpm SAS 6G SFF drives
Total Disk Storage: 7344 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 Smart Array P411/512 BBWC Controller	462832-B21	1	649	4	2,596		
HP 72GB 15K rpm Hot Plug SAS 2.5 Dual Port Hard Drive	418371-B21	1	349	2	698		
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					26,816	837	
Storage							
HP StorageWorks D2700 Disk Enclosure	AJ941A	1	3,399	4	13,596		
HP 5642 Rack	358254-B21	1	865	1	865		
HP 72GB 6G SAS 15K SFF (2.5-inch) Dual Port Enterprise 3yr Wa	512545-B21	1	379	100	37,900		
HP 3y 4h 24x7 D2000 Encl HW Support	UQ540E	1	1,904	4		7,616	
Subtotal					52,361	7,616	
Hardware and Maintenance Discount							
Large Purchase and Net 30 discount	14.0%	1			(\$11,085)	(\$1,183)	
Hardware Subtotal					68,092	7,270	
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					\$82,836	\$7,515	

Three-Year Cost of Ownership: \$90,352 USD**QpH @ 100GB: 50738.4****\$ / QpH @ 100GB: \$1.79 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	= 73.44
Start of Database Load	= 2009-09-28 16:44:50
End of Database Load	= 2009-09-28 17:15:18
Database Load Time	= 00:30:28
Query Streams for Throughput Test	= 5
TPC-H Power	= 67,712.9
TPC-H Throughput	= 38,019.1
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 50,738.4
Total System Price Over 3 Years	= \$90,352
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$1.79 USD

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 1,041.6 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	928171518	9/29/2009	8:29:56	9/29/2009	8:34:08	0:04:12
Stream01	928171519	9/29/2009	8:34:09	9/29/2009	8:47:46	0:13:37
Stream02	928171520	9/29/2009	8:34:09	9/29/2009	8:49:12	0:15:03
Stream03	928171521	9/29/2009	8:34:09	9/29/2009	8:49:52	0:15:43
Stream04	928171522	9/29/2009	8:34:09	9/29/2009	8:47:57	0:13:48
Stream05	928171523	9/29/2009	8:34:09	9/29/2009	8:49:03	0:14:54
Refresh00		9/29/2009	8:29:56	9/29/2009	8:34:09	0:04:13
Refresh01		9/29/2009	8:49:52	9/29/2009	8:50:13	0:00:20
Refresh02		9/29/2009	8:50:13	9/29/2009	8:50:33	0:00:21
Refresh03		9/29/2009	8:50:33	9/29/2009	8:50:53	0:00:20
Refresh04		9/29/2009	8:50:53	9/29/2009	8:51:12	0:00:19
Refresh05		9/29/2009	8:51:12	9/29/2009	8:51:31	0:00:19



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TPC-H Timing Intervals (in seconds)

Query	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08
Stream 00	42.2	1.2	4.4	2.1	5.1	1.5	4.1	4.9
Stream 01	107.4	7.2	18.9	5.2	18.6	7.2	13.7	18.8
Stream 02	207.6	5.2	10.9	7.2	14.3	9.0	17.8	16.6
Stream 03	172.0	0.8	4.4	18.6	20.8	4.3	23.6	17.2
Stream 04	199.0	4.9	9.9	9.4	15.8	5.2	8.9	19.3
Stream 05	174.7	4.2	22.2	10.4	12.8	6.6	20.5	11.7
Min Qi	107.4	0.8	4.4	5.2	12.8	4.3	8.9	11.7
Max Qi	207.6	7.2	22.2	18.6	20.8	9.0	23.6	19.3
Avg Qi	172.1	4.5	13.3	10.2	16.5	6.5	16.9	16.7
Query	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	35.8	3.3	2.4	11.5	22.3	1.3	1.5	7.1
Stream 01	72.0	14.5	37.8	19.0	98.6	6.0	6.0	36.5
Stream 02	67.0	17.2	6.7	25.4	73.4	5.1	7.7	36.7
Stream 03	87.1	11.1	220.9	5.5	22.2	6.5	6.8	6.9
Stream 04	80.1	9.6	13.8	20.8	57.6	7.6	5.8	34.8
Stream 05	56.3	7.8	8.0	13.7	99.7	5.4	6.9	104.2
Min Qi	56.3	7.8	6.7	5.5	22.2	5.1	5.8	6.9
Max Qi	87.1	17.2	220.9	25.4	99.7	7.6	7.7	104.2
Avg Qi	72.5	12.0	57.4	16.9	70.3	6.1	6.6	43.8
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	0.9	35.5	2.6	1.8	29.2	5.6	18.6	7.9
Stream 01	11.6	153.8	10.3	27.7	106.6	19.6	12.4	7.7
Stream 02	6.9	160.9	14.4	101.5	72.6	19.1	11.7	8.9
Stream 03	9.2	197.5	4.3	7.4	69.9	26.2	12.0	7.3
Stream 04	6.2	165.4	11.8	15.8	115.9	11.4	11.1	7.7
Stream 05	3.1	157.8	20.9	26.9	99.6	20.5	11.2	7.9
Min Qi	3.1	153.8	4.3	7.4	69.9	11.4	11.1	7.3
Max Qi	11.6	197.5	20.9	101.5	115.9	26.2	12.4	8.9
Avg Qi	7.4	167.1	12.3	35.9	92.9	19.4	11.7	7.9