



# HP ProLiant DL580 G5

TPC-H Rev. 2.6.2

Report Date:  
**Apr 4, 2008**

Total System Cost

**\$138,825 USD**

Composite Query per Hour Metric

**34,989.9**  
QphH@100GB

Price / Performance

**\$3.97 USD**  
\$/ QphH@100GB

Database Size

**100GB**

Database Manager

**Microsoft SQL Server 2005 Enterprise x64 Edition SP2**

Operating System

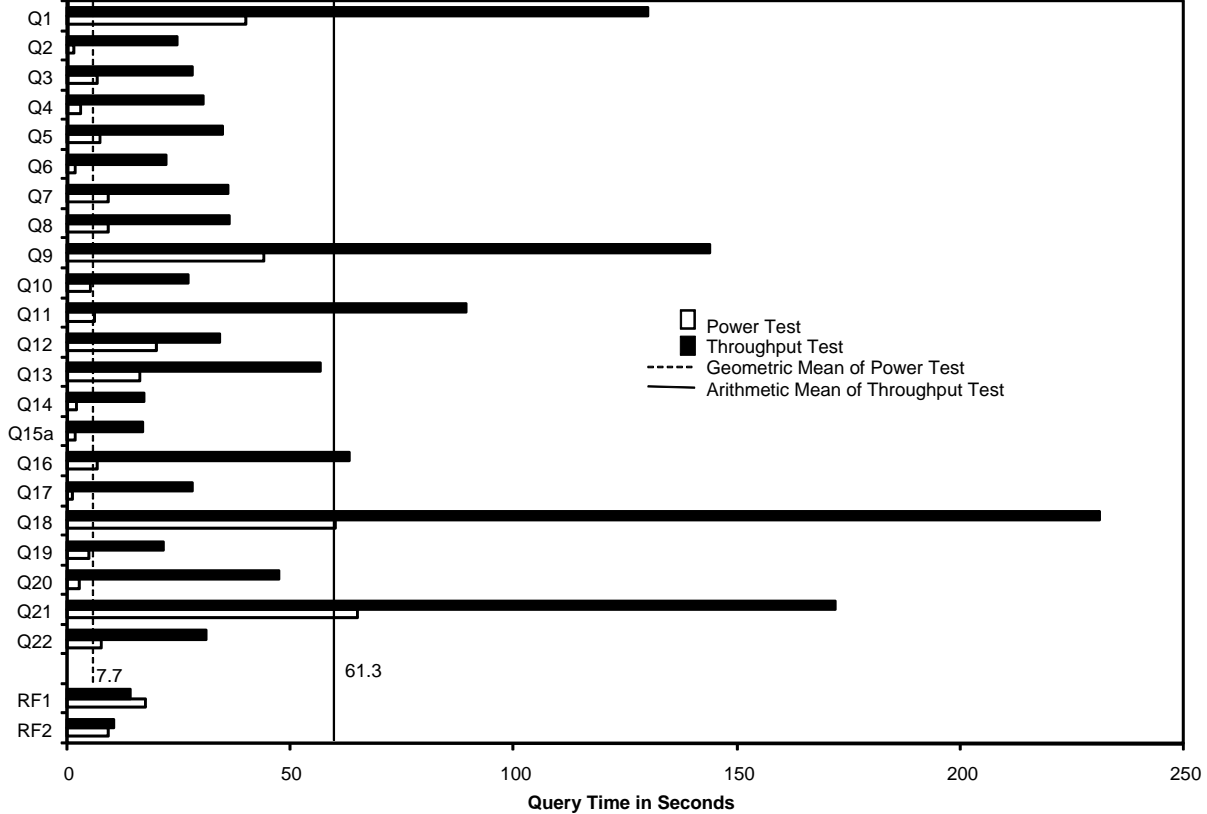
**Windows Server 2003 R2, Enterprise x64 Edition SP1**

Other Software

**Visual Studio Standard 2005**

Availability Date

**Apr 4, 2008**



Database Load Time = 0:40:00

Load Included Backup: Y

Total Data Storage / Database Size = 64.80

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): Y

RAID (All): N

### System Configuration:

**Processors :** 4x 2.93 GHz Quad Core Intel X7350  
**Cores :** 16  
**Threads :** 16  
**Memory :** 128 GB  
**OS Disk Drives :** 1x 36 GB 15K rpm SFF SAS (internal)  
**Network :** 2x on-board GigE  
**Disk Controllers :** 6x Smart Array P800, 1x Smart Array E500, 1x Smart Array P400i  
**Disks :** 175x 36 GB 15K rpm SFF SAS drives (external)  
 5x36GB 15K rpm SFF SAS drives (internal)  
**Total Disk Storage:** 6480 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 DL580R05 CTO Chassis	452291-B21	1	6,115	1	6,115	
HP DL580G5 2.93 130W FIO Kit	451999-L21	1	3,099	4	12,396	
HP DL580G5 PCI-E IO Option Kit	452181-B21	1	199	1	199	
HP DL580G5 Memory Board	452179-B21	1	299	4	1,196	
HP 8GB FBD PC2-5300 2x4GB Kit	397415-B21	1	1,299	16	20,784	
HP s7540 17in CRT Monitor	PF997AA#ABA	1	139	1	139	
HP 3y 4h 24x7 ProLiant DL58X HW Support	U4608E	1	1,575	1		1,575
				<b>Subtotal</b>	<b>40,829</b>	<b>1,575</b>
<b>Storage</b>						
HP SA E500/256 External Controller	435129-B21	1	499	1	499	
HP Smart Array P800/512 Controller	381513-B21	1	949	6	5,694	
HP StgWks 70 Modular Smart Arry ALL	418800-B21	1	3,199	7	22,393	
HP 36GB 15K SAS Single Port SFF Hard Drive (internal)	431933-B21	1	349	5	1,745	
HP 36GB 15K SAS Single Port SFF Hard Drive	431933-B21	1	349	175	61,075	
HP 5642 Unassembled Rack	358254-B21	1	865	1	865	
HP StgWks 70 Modular Smart Arry ALL (10%)	418800-B21	1	3,199	2		6,398
HP 36GB 15K SAS Single Port SFF Hard Drive (10%)	431933-B21	1	349	18		6,282
				<b>Subtotal</b>	<b>92,271</b>	<b>12,680</b>
<b>Hardware and Maintenance Discount</b>						
Large Purchase and Net 30 discount	16.0%	1			(\$21,296)	(\$2,281)
				<b>Hardware Subtotal</b>	<b>111,804</b>	<b>11,974</b>
<b>Software</b>						
SQL Server 2005 Enterprise x64 Edition with 25 CALs	810-04779	Microsoft	8,318	1	8,318	
SQL Server 2005 Client License	359-01911	Microsoft	156	25	3,900	
Windows Server 2003 R2 Enterprise x64 Edition	P72-01684	Microsoft	2,334	1	2,334	
Microsoft Problem Resolution Services		Microsoft	245	1		245
Visual Studio Standard 2005	127-00012	Microsoft	250	1	250	included
				<b>Subtotal</b>	<b>14,802</b>	<b>245</b>
				<b>Total</b>	<b>\$126,606</b>	<b>\$12,219</b>

**Three-Year Cost of Ownership: \$138,825 USD****QpH @ 100GB: 34989.9****\$/ QpH @ 100GB: \$3.97 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.

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	= 64.80
Start of Database Load	= 2008-03-24 21:25:16
End of Database Load	= 2008-03-24 22:05:16
Database Load Time	= 00:40:00
Query Streams for Throughput Test	= 5
TPC-H Power	= 46,708.6
TPC-H Throughput	= 26,211.3
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 34,989.9
Total System Price Over 3 Years	= \$138,825
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$3.97 USD

#### Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 1,510.8 seconds
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#### Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	324220517	3/25/2008	8:14:45	3/25/2008	8:20:36	0:05:50
Stream01	324220518	3/25/2008	8:20:36	3/25/2008	8:41:06	0:20:30
Stream02	324220519	3/25/2008	8:20:36	3/25/2008	8:43:30	0:22:53
Stream03	324220520	3/25/2008	8:20:36	3/25/2008	8:43:43	0:23:06
Stream04	324220521	3/25/2008	8:20:36	3/25/2008	8:41:26	0:20:50
Stream05	324220522	3/25/2008	8:20:36	3/25/2008	8:43:30	0:22:54
Refresh00		3/25/2008	8:14:45	3/25/2008	8:20:36	0:05:50
Refresh01		3/25/2008	8:43:43	3/25/2008	8:44:14	0:00:31
Refresh02		3/25/2008	8:44:14	3/25/2008	8:44:40	0:00:26
Refresh03		3/25/2008	8:44:40	3/25/2008	8:45:02	0:00:22
Refresh04		3/25/2008	8:45:02	3/25/2008	8:45:25	0:00:23
Refresh05		3/25/2008	8:45:25	3/25/2008	8:45:47	0:00:22



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### TPC-H Timing Intervals (in seconds)

Query	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08
Stream 00	40.1	1.5	6.8	3.2	7.5	2.0	9.3	9.1
Stream 01	99.6	13.4	22.8	30.9	33.0	12.5	35.4	42.5
Stream 02	136.2	12.9	36.1	33.2	31.3	14.1	38.5	38.9
Stream 03	163.5	8.4	6.7	64.0	33.1	48.3	28.7	45.1
Stream 04	120.4	9.0	39.8	11.4	45.1	12.5	36.5	38.6
Stream 05	130.8	80.0	35.5	13.6	32.3	23.2	40.8	16.4
Min Qi	99.6	8.4	6.7	11.4	31.3	12.5	28.7	16.4
Max Qi	163.5	80.0	39.8	64.0	45.1	48.3	40.8	45.1
Avg Qi	130.1	24.7	28.2	30.6	35.0	22.1	36.0	36.3
Query	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	44.0	5.1	6.1	19.9	16.2	2.1	2.0	6.8
Stream 01	106.0	30.6	128.1	28.6	64.5	16.1	9.2	38.1
Stream 02	140.0	23.3	86.1	36.9	61.3	36.1	9.3	104.7
Stream 03	184.2	36.2	153.5	17.6	54.8	9.3	19.7	36.6
Stream 04	180.9	34.8	36.8	54.2	35.1	12.1	39.9	24.7
Stream 05	109.2	11.0	42.0	33.9	67.4	12.1	6.6	112.2
Min Qi	106.0	11.0	36.8	17.6	35.1	9.3	6.6	24.7
Max Qi	184.2	36.2	153.5	54.2	67.4	36.1	39.9	112.2
Avg Qi	144.1	27.2	89.3	34.2	56.6	17.1	16.9	63.3
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	1.3	60.1	5.0	2.9	65.1	7.6	17.5	9.4
Stream 01	12.2	175.9	53.9	48.8	202.5	25.8	19.8	11.3
Stream 02	48.0	255.1	19.2	38.2	137.9	36.9	15.8	9.4
Stream 03	15.1	254.2	8.9	34.2	140.1	24.9	12.2	10.0
Stream 04	45.1	224.0	12.0	19.6	177.0	40.2	12.0	10.8
Stream 05	20.4	246.2	13.6	96.7	201.9	28.3	11.6	10.7
Min Qi	12.2	175.9	8.9	19.6	137.9	24.9	11.6	9.4
Max Qi	48.0	255.1	53.9	96.7	202.5	40.2	19.8	11.3
Avg Qi	28.2	231.1	21.5	47.5	171.9	31.2	14.3	10.4