



# HP ProLiant DL585G1 4P

TPC-H Rev. 2.3.0

Report Date:  
**Jan 26, 2006**

Total System Cost

**\$143,041**

Composite Query per Hour Metric

**12,225.6**  
QphH@300GB

Price / Performance

**\$11.71 USD**  
\$ / QphH@300GB

Database Size

**300GB**

Database Manager

**Microsoft SQL Server 2005 Enterprise Edition**

Operating System

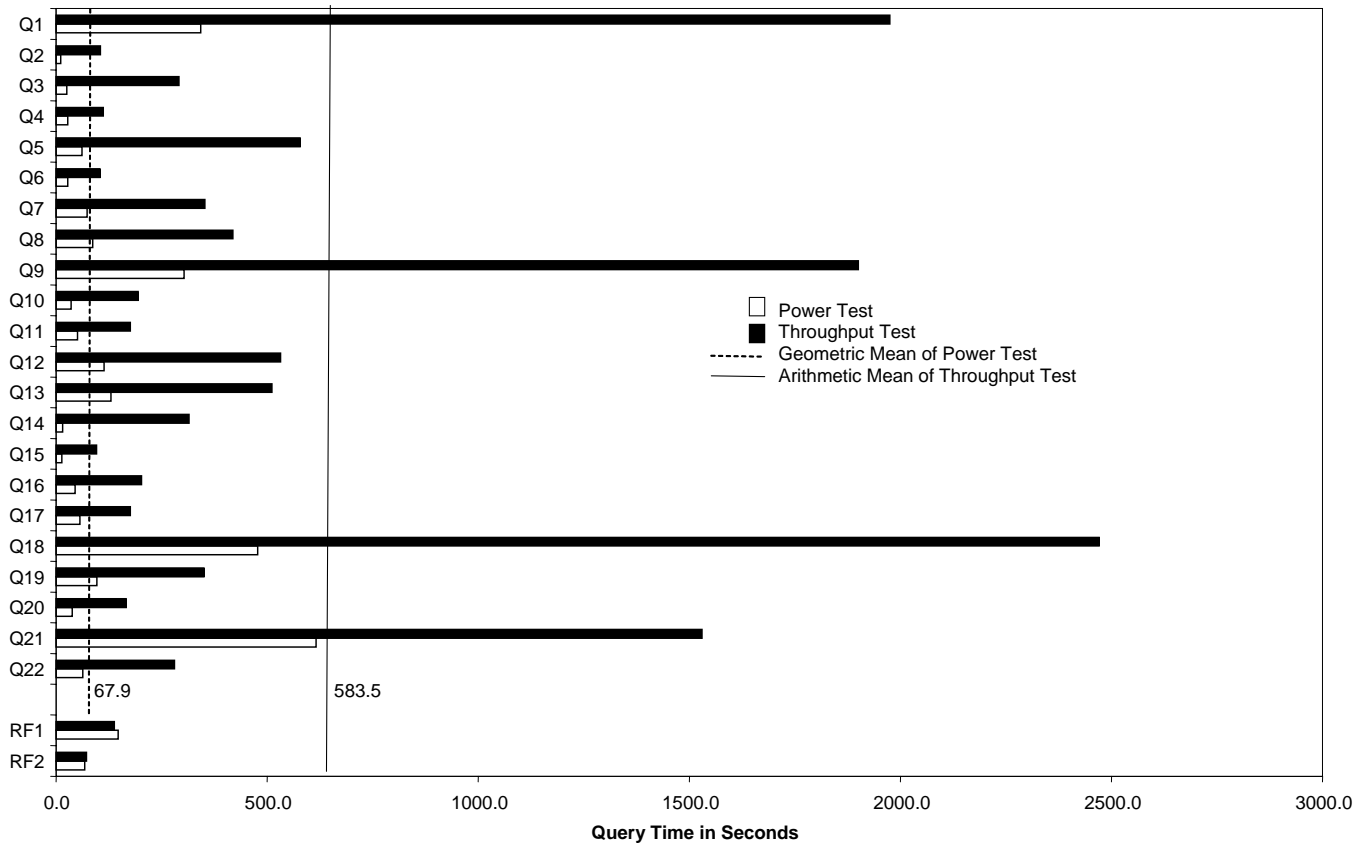
**Windows Server 2003, Enterprise Edition**

Other Software

**Visual C++ Visual Basic**

Availability Date

**Jan 26, 2006**



Database Load Time = 3:54:01

Load Included Backup: Y

Total Data Storage / Database Size = 19.92

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): N

RAID (All): N

### System Configuration:

**Processors/Cores/Threads:** 4/8/8 2.4 GHz DC AMD Opteron w/ 1M Cache

**Memory :** 64 GB memory

**Disk Controllers :** 8x Smart Array P600

**Disks :** 160x 36 GB 10K rpm SAS drives (external)

2x 36 GB 15k rpm SCSI drives + 2x 72GB 15k rpm SCSI drives (internal)

**Total Disk Storage:** 5976 GB

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



**HP ProLiant DL585  
2.4GHz 4P DC**

**TPC-H Rev. 2.3.0**

**Report Date: 26-Jan-06**

Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
<b>Server Hardware</b>						
ProLiant DL585 R01 O2.4GHz (1 MB) x 2	397841-001	1	14,129	1	14,129	
- 2 GB PC2700 DDR, Integrated Smart Array Controller 5i, - Embedded NC7782 Dual Port PCI-X 10/100/1000T Gigabit NIC						
HP DC 2.4/1000 PC2700 DL585 Opt Kit	397843-B21	1	5,199	2	10,398	
HP 4GB Reg PC2700 2x2GB Memory	371049-B21	1	1,699	16	27,184	
HP s7540 17in CRT Monitor	PF997AA#ABA	1	149	1	149	
HP PS/2 Scroll Mouse Carbonite	DG169AV	1	5	1	5	
PS/2 Standard Keyboard	DG170AV#ABA	1	10	1	10	
HP 5642 Unassembled Rack	358254-B21	1	689	1	689	
3YR 24X7 4HR 500 SERIES SVR	U4608E	1	1,575	1		1,575
<b>Subtotal</b>					<b>52,564</b>	<b>1,575</b>
<b>Storage</b>						
HP SMART Array P600 3G SAS/SATA RAID Controller	337972-B21	1	999	8	7,992	
HP StorageWorks MSA50 Disk Enclosure	364430-B21	1	1,899	16	30,384	
HP 36GB 15K U320 Pluggable Hard Drive (internal)	286776-B22	1	269	2	538	
HP 72GB 15K U320 Pluggable Hard Drive (internal)	286778-B22	1	439	2	878	
HP 36GB 10K SAS Single Port SFF Hard Drive	375859-B21	1	299	160	47,840	
HP 36GB 10K SAS Single Port SFF Hard Drive (10% spare)	375859-B21	1	299	16	4,784	
HP StorageWorks MSA50 Disk Enclosure (10% spare)	364430-B21	1	1,899	2		3,798
<b>Subtotal</b>					<b>92,416</b>	<b>3,798</b>
<b>Hardware and Maintenance Discount</b>						
Large Purchase and Net 30 discount	16.0%	1			(\$23,197)	(\$860)
<b>Hardware Subtotal</b>					<b>121,783</b>	<b>4,513</b>
<b>Software</b>						
SQL Server 2005 Enterprise x64 Edition with 25 CALs	810-04793	Microsoft	2	8,487	1	8,487
SQL Server 2005 Client License	359-01911	Microsoft	2	156	35	5,460
Windows Server 2003 Enterprise x64 Edition	P72-00274	Microsoft	2	2,334	1	2,334
Microsoft Problem Resolution Services		Microsoft	2	245	1	245
Visual C++ Standard Edition	254-00170	Microsoft	2	109	1	109
Visual Basic 2003 .Net Professional	046-00856	Microsoft	2	109	1	109
<b>Subtotal</b>					<b>16,499</b>	<b>245</b>
<b>Total</b>					<b>\$138,282</b>	<b>\$4,758</b>

**Three-Year Cost of Ownership: \$143,041**

**QpH @ 300GB: 12225.6**

**\$ / QpH @ 300GB: \$11.71 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).

**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	= 300
Total Data Storage / Database Size	= 19.92
Start of Database Load	= 2006-01-17 15:44:57.513
End of Database Load	= 2006-01-17 19:38:58.687
Database Load Time	= 3:54:01
Query Streams for Throughput Test	= 6
TPC-H Power	= 15,910.6
TPC-H Throughput	= 9,394.0
TPC-H Composite Query-per-Hour Metric (QphH@300GB)	= 12,225.6
Total System Price Over 3 Years	= \$143,041
TPC-H Price/ Performance Metric (\$/QphH@300GB)	= \$11.71 USD

### Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 15,175.6 seconds
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### Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	117193858	1/17/2006	20:25:43	1/17/2006	21:10:57	0:45:14
Stream01	117193859	1/17/2006	21:12:05	1/18/2006	0:43:55	3:31:50
Stream02	117193860	1/17/2006	21:12:05	1/18/2006	0:58:55	3:46:50
Stream03	117193861	1/17/2006	21:12:05	1/18/2006	0:54:27	3:42:22
Stream04	117193862	1/17/2006	21:12:05	1/18/2006	0:20:25	3:08:21
Stream05	117193863	1/17/2006	21:12:05	1/18/2006	0:34:44	3:22:39
Stream06	117193864	1/17/2006	21:12:05	1/18/2006	1:03:49	3:51:44
Refresh00		1/17/2006	20:23:16	1/17/2006	21:12:05	0:48:49
Refresh01		1/18/2006	1:03:49	1/18/2006	1:07:08	0:03:19
Refresh02		1/18/2006	1:07:08	1/18/2006	1:10:40	0:03:32
Refresh03		1/18/2006	1:10:40	1/18/2006	1:13:59	0:03:19
Refresh04		1/18/2006	1:13:59	1/18/2006	1:17:34	0:03:35
Refresh05		1/18/2006	1:17:34	1/18/2006	1:21:18	0:03:44
Refresh06		1/18/2006	1:21:18	1/18/2006	1:25:01	0:03:43



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## TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	342.7	11.4	25.3	27.5	61.3	27.5	73.8	87.2
Stream 01	1431.3	137.7	92.8	84.2	572.5	85.6	359.7	254.3
Stream 02	2186.2	117.7	67.9	93.9	478.1	128.8	465.2	614.1
Stream 03	1736.0	51.0	61.4	123.1	1523.5	179.2	465.5	332.0
Stream 04	1787.4	120.3	83.1	132.2	244.5	82.3	330.7	500.6
Stream 05	2584.7	112.3	73.9	149.6	483.7	67.7	251.8	316.9
Stream 06	2124.2	90.0	1368.0	89.6	166.3	80.9	243.1	496.6
Min Qi	1431.3	51.0	61.4	84.2	166.3	67.7	243.1	254.3
Max Qi	2584.7	137.7	1368.0	149.6	1523.5	179.2	465.5	614.1
Avg Qi	1975.0	104.8	291.2	112.1	578.1	104.1	352.7	419.1
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	303.2	35.8	50.6	113.7	130.1	15.6	13.9	45.5
Stream 01	2571.6	186.1	227.9	367.6	405.7	123.6	76.8	142.9
Stream 02	1240.0	156.4	146.0	786.8	678.5	1361.7	147.4	226.3
Stream 03	2035.5	150.8	153.0	343.4	297.7	105.3	59.3	102.2
Stream 04	1724.9	144.5	129.8	474.0	514.8	94.7	94.6	404.6
Stream 05	1382.7	157.2	254.0	534.5	575.3	157.3	103.0	209.5
Stream 06	2448.2	372.9	147.1	685.6	592.7	46.2	92.9	128.3
Min Qi	1240.0	144.5	129.8	343.4	297.7	46.2	59.3	102.2
Max Qi	2571.6	372.9	254.0	786.8	678.5	1361.7	147.4	404.6
Avg Qi	1900.5	194.7	176.3	532.0	510.8	314.8	95.7	202.3
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	56.1	477.8	96.8	38.3	615.8	63.5	146.8	67.9
Stream 01	132.7	2501.9	804.3	214.5	1638.3	297.7	126.2	71.0
Stream 02	233.5	2314.8	270.0	151.2	1457.2	288.2	138.5	71.6
Stream 03	139.2	2601.1	252.5	189.2	2185.3	254.9	133.2	64.2
Stream 04	144.5	2161.1	233.7	146.0	1448.8	302.8	140.2	72.5
Stream 05	202.0	2177.9	294.6	149.9	1630.1	289.3	145.9	76.7
Stream 06	202.7	3068.4	245.5	143.0	820.8	250.2	145.0	75.9
Min Qi	132.7	2161.1	233.7	143.0	820.8	250.2	126.2	64.2
Max Qi	233.5	3068.4	804.3	214.5	2185.3	302.8	145.9	76.7
Avg Qi	175.8	2470.9	350.1	165.6	1530.1	280.5	138.2	72.0