



HP ProLiant DL585 G2

TPC-H Rev. 2.3.0

Report Date:
Oct 31, 2006

Total System Cost

Composite Query per Hour Metric

Price / Performance

\$250,057 USD

18,298.5
QphH@300GB

\$13.67 USD
\$/ QphH@300GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

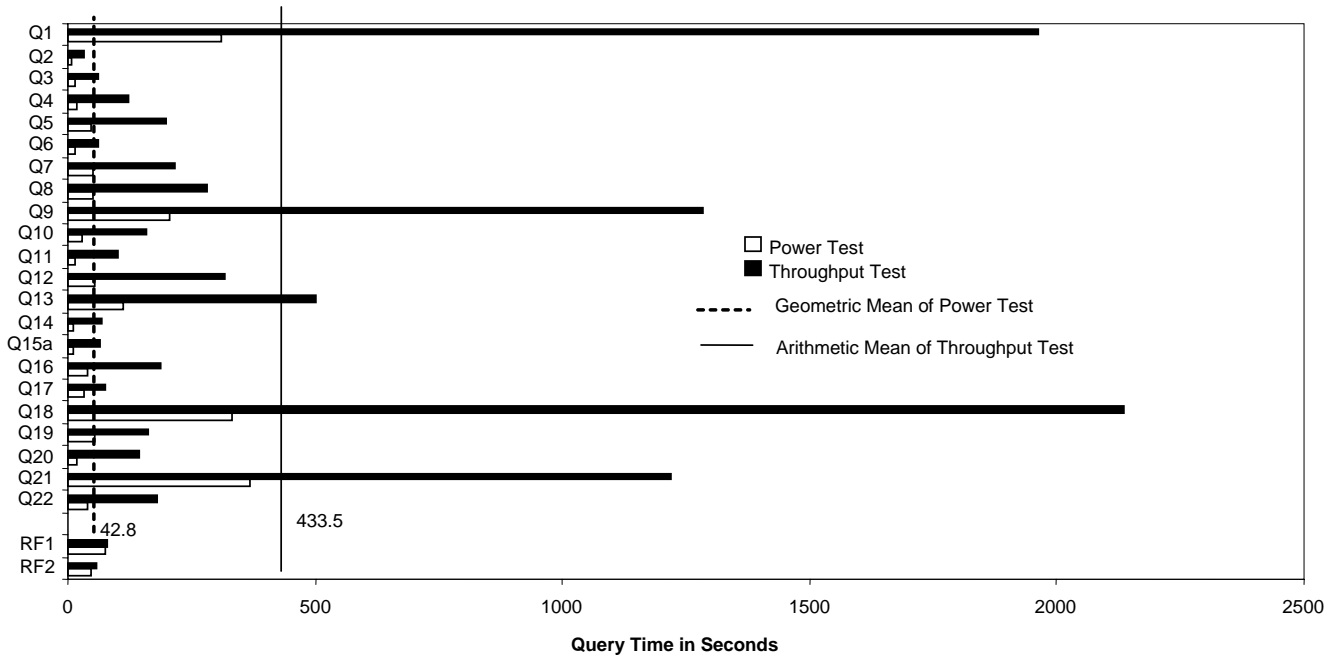
300GB

**Microsoft SQL
Server 2005
Enterprise Edition**

**Windows Server
2003, Enterprise
Edition**

**Visual C++
Visual Basic**

Apr 19, 2007



Database Load Time = 3:16:58

Load Included Backup: Y

Total Data Storage / Database Size = 24.96

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): N

RAID (All): N

System Configuration:

Processors/Cores/Threads: 4/8/8 2.8 GHz AMD 8220SE w/ 1M Cache

Memory : 128 GB memory

Disk Controllers : 6x Smart Array P800, 1x Smart Array P600, 1x Smart Array E500

Disks : 200x 36 GB 15K rpm SAS SFF drives (external)
8x 36 GB 10k rpm SAS SFF drives (internal)

Total Disk Storage: 7488 GB

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

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Report Date: 31-Oct-06

Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
Brand Pricing						
HP ProLiant DL585 G2 Rack CTO Chassis/dual port NIC	418633-B21	1	3,794	1	3,794	
AMD Opteron 8220SE 2.8 GHz-1 MB Dual-Core Processor 2P	413934-L21	1	5,053	1	5,053	
AMD Opteron 8220SE, 2P Dual-Core (2.8 GHz, 120 Watts)	413934-B21	1	5,349	1	5,349	
8GB PC2-5300 2 x 4GB Kit	408854-B21	1*	8,499	16	135,984	
HP s7540 17in CRT Monitor	PF997AA#ABA	1	139	1	139	
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	
HP 3y 4h 24x7 ProLiant D58x HW Support	U4608E	1	1,575	1		1,575
Subtotal					151,023	1,575
Storage						
HP Smart Array P800 Controller	381513-B21	1*	1,099	6	6,594	
HP Smart Array P600 Controller	337972-B21	1	729	1	729	
HP Smart Array E500 Controller	435129-B21	1*	600	1	600	
HP StorageWorks MSA70 Disk Enclosure	418800-B21	1*	3,250	8	26,000	
HP 36GB 10K SAS Single Port SFF Hard Drive (internal)	375859-B21	1	279	8	2,232	
HP 36GB 15K SAS Single Port SFF Hard Drive	431933-B21	1*	375	200	75,000	
HP 36GB 15K SAS Single Port SFF Hard Drive (10% spare)	431933-B21	1*	375	20		7,500
HP StorageWorks MSA70 Disk Enclosure (10% spare)	418800-B21	1*	3,250	2		6,500
Subtotal					111,155	14,000
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	16.0%	1			(\$41,948)	(\$2,492)
Hardware Subtotal					220,230	13,083
Software						
SQL Server 2005 Enterprise x64 Edition with 25 CALs	810-04779	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
Microsoft Visual C++ .NET Standard 2003	254-00170	Microsoft	2	109	1	109 included
Microsoft Visual Basic .Net Standard 2003	046-00856	Microsoft	2	109	1	109 included
Subtotal					16,499	245
Total					\$236,729	\$13,328

Three-Year Cost of Ownership: \$250,057 USD**QpH @ 300GB: 18298.5****\$/ QpH @ 300GB: \$13.67 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.

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	= 24.96
Start of Database Load	= 2006-10-24 17:05:38.340
End of Database Load	= 2006-10-24 20:22:36.590
Database Load Time	= 3:16:58
Query Streams for Throughput Test	= 6
TPC-H Power	= 25,206.4
TPC-H Throughput	= 13,283.8
TPC-H Composite Query-per-Hour Metric (QphH@300GB)	= 18,298.5
Total System Price Over 3 Years	= \$250,057 USD
TPC-H Price/ Performance Metric (\$/QphH@300GB)	= \$13.67 USD

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 10,731.9 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	1024202236	10/25/2006	8:43:07	10/25/2006	9:13:45	0:30:37
Stream01	1024202237	10/25/2006	9:14:30	10/25/2006	11:52:36	2:38:06
Stream02	1024202238	10/25/2006	9:14:30	10/25/2006	11:56:34	2:42:04
Stream03	1024202239	10/25/2006	9:14:31	10/25/2006	11:48:58	2:34:27
Stream04	1024202240	10/25/2006	9:14:31	10/25/2006	11:57:01	2:42:30
Stream05	1024202241	10/25/2006	9:14:31	10/25/2006	11:46:15	2:31:45
Stream06	1024202242	10/25/2006	9:14:31	10/25/2006	11:59:28	2:44:57
Refresh00		10/25/2006	8:41:52	10/25/2006	9:14:30	0:32:38
Refresh01		10/25/2006	11:59:28	10/25/2006	12:01:27	0:01:59
Refresh02		10/25/2006	12:01:27	10/25/2006	12:03:45	0:02:18
Refresh03		10/25/2006	12:03:46	10/25/2006	12:06:21	0:02:36
Refresh04		10/25/2006	12:06:22	10/25/2006	12:08:44	0:02:22
Refresh05		10/25/2006	12:08:45	10/25/2006	12:11:09	0:02:24
Refresh06		10/25/2006	12:11:09	10/25/2006	12:13:22	0:02:13



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TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	309.7	7.1	13.2	18.9	47.0	14.7	49.8	49.9
Stream 01	1898.8	30.9	52.0	76.2	167.2	59.9	283.9	172.8
Stream 02	1904.2	44.5	52.3	105.8	347.3	82.4	144.2	203.6
Stream 03	2176.3	26.5	47.9	280.2	138.6	65.9	223.9	231.6
Stream 04	1957.3	28.5	33.1	92.5	201.9	46.4	135.7	290.6
Stream 05	1640.6	26.8	137.5	89.5	179.1	56.3	189.4	178.0
Stream 06	2192.8	27.2	53.0	96.3	159.1	60.3	318.2	605.5
Min Qi	1640.6	26.5	33.1	76.2	138.6	46.4	135.7	172.8
Max Qi	2192.8	44.5	137.5	280.2	347.3	82.4	318.2	605.5
Avg Qi	1961.7	30.7	62.6	123.4	198.9	61.9	215.9	280.4
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	206.3	29.8	16.2	54.9	112.2	11.7	10.0	38.6
Stream 01	1576.5	206.6	111.4	320.9	458.7	81.8	68.3	158.2
Stream 02	1557.5	146.2	104.0	306.0	649.0	70.5	75.0	295.4
Stream 03	994.0	114.3	91.5	246.5	459.2	60.8	51.0	159.7
Stream 04	1320.0	196.7	105.8	322.7	390.6	64.4	66.2	186.3
Stream 05	1212.0	110.1	95.9	371.3	466.9	67.3	68.0	157.7
Stream 06	1040.3	167.8	102.3	345.3	594.8	55.9	63.3	160.9
Min Qi	994.0	110.1	91.5	246.5	390.6	55.9	51.0	157.7
Max Qi	1576.5	206.6	111.4	371.3	649.0	81.8	75.0	295.4
Avg Qi	1283.4	157.0	101.8	318.8	503.2	66.8	65.3	186.4
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	32.8	333.2	54.6	18.6	367.6	40.6	74.5	45.5
Stream 01	67.1	1912.9	160.8	70.7	1360.6	189.4	68.1	50.5
Stream 02	92.6	1828.0	172.9	82.2	1266.6	193.5	79.7	58.2
Stream 03	90.2	1986.8	159.9	63.7	1395.8	202.9	82.8	72.6
Stream 04	68.0	2623.7	173.0	67.3	1254.3	124.8	97.6	43.8
Stream 05	64.6	2224.8	143.4	68.8	1373.3	183.4	80.3	63.3
Stream 06	67.8	2237.6	164.9	518.0	673.4	191.9	78.3	54.1
Min Qi	64.6	1828.0	143.4	63.7	673.4	124.8	68.1	43.8
Max Qi	92.6	2623.7	173.0	518.0	1395.8	202.9	97.6	72.6
Avg Qi	75.1	2135.6	162.5	145.1	1220.7	181.0	81.1	57.1