



HP ProLiant ML370 G5

TPC-H Rev. 2.6.0

Report Date:
Jul 31, 2007

Total System Cost

\$19,437 USD

Composite Query per Hour Metric

4,521.2
QphH@100GB

Price / Performance

\$4.30 USD
\$/QphH@100GB

Database Size

100GB

Database Manager

**Microsoft SQL
Server 2005
Standard Edition
SP2**

Operating System

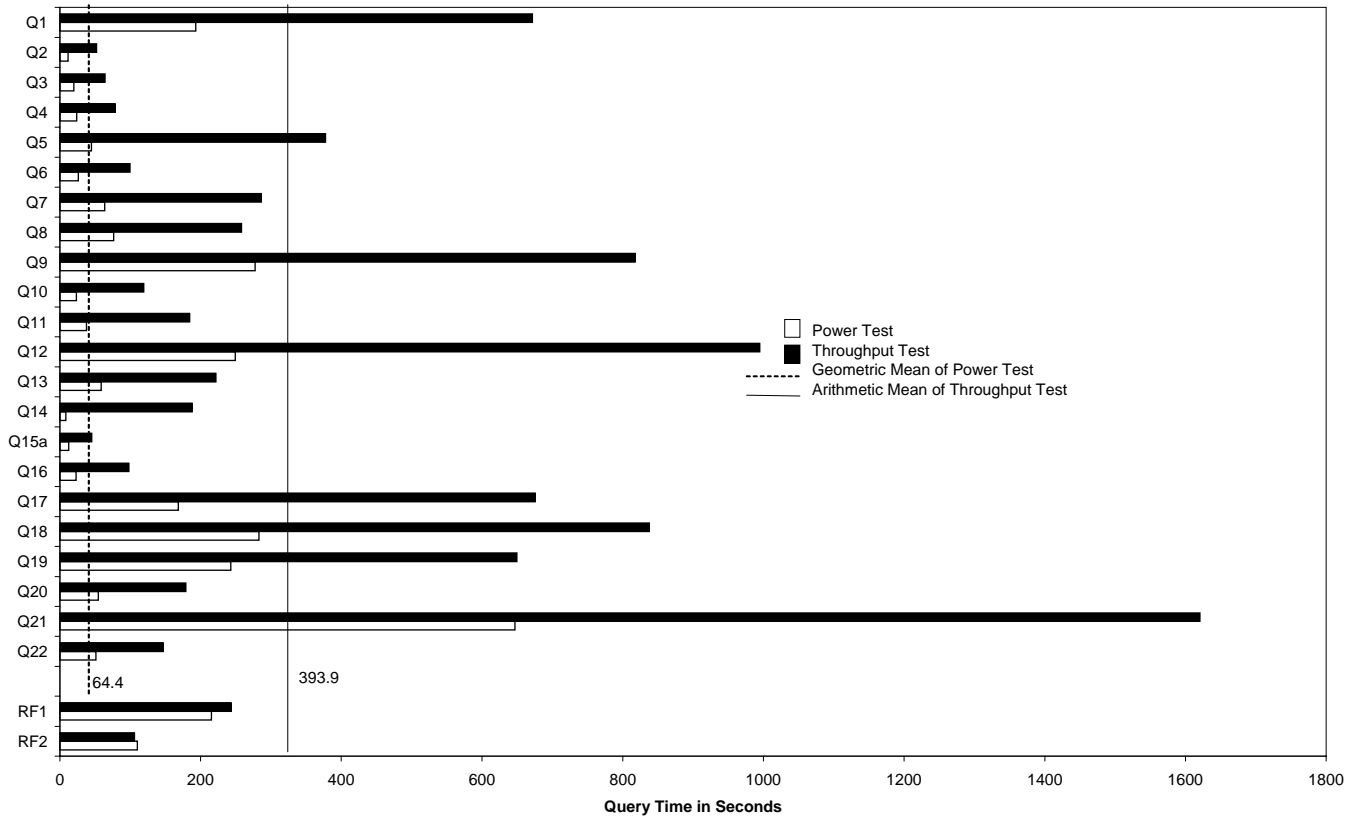
**Windows Server
2003 R2
Standard
Edition SP2**

Other Software

**Visual C++ 2005
Express Edition**

Availability Date

Jul 31, 2007



Database Load Time = 5:43:29

Load Included Backup: Y

Total Data Storage / Database Size = 5.76

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): Y

RAID (All): N

System Configuration:

Processors : 1x 2.66 GHz Quad Core Intel X5355
Cores : 4
Threads : 4
Memory : 16 GB
Network : 2x on-board GigE
Disk Controllers : 2x Smart Array P400
Disks : 16x 36GB 15K rpm SFF SAS drives (internal)
Total Disk Storage: 576 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 ML370T05 SAS ModX CTO Svr	400607-B21	1	1,393	1	1,393	
HP X5355 ML370G5 FIO Kit	433104-L21	1	1,399	1	1,399	
HP ML370 G5 Mem Board Kit	403766-B21	1	179	1	179	
HP 4GB FBD PC2-5300 2x2GB Kit	397413-B21	1	749	4	2,996	
HP ML370 G5 SAS SFF DRV Cage Kit	401415-B21	1	199	1	199	
HP s7540 17in CRT Monitor	PF997AA#ABA	1	139	1	139	
HP 3y 4h 24x7 ProLiant ML370 HW Support	U4529E	1	853	1		853
Subtotal					6,305	853
Storage						
HP Smart Array P400/256 Controller	405132-B21	1	449	2	898	
HP SA Cache Battery Kit	383280-B21	1	109	2	218	
HP 36GB 15K SAS Single Port SFF Hard Drive	431933-B21	1	369	16	5,904	
Subtotal					7,020	0
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	14.0%	1			(\$1,866)	(\$119)
Hardware Subtotal					11,460	734
Software						
SQL Server 2005 Standard Edition x64 per processor license	228-04026	Microsoft	2	5,999	5,999	incl. bellow
Windows Server 2003 R2 Standard x64 Edition	P73-01675	Microsoft	2	999	999	incl. bellow
Visual C++ 2005 Express Edition		Microsoft	2	0	0	incl. bellow
Microsoft Problem Resolution Services		Microsoft	2	245		245
Subtotal					6,998	245
Total					\$18,458	\$979

Three-Year Cost of Ownership: \$19,437 USD**QpH @ 100GB: 4521.2****\$ / QpH @ 100GB: \$4.30 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 Francois Raab for Performance Metrics, Inc. (www.perfmetrics.com)

Audited by: Francois Raab for 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	= 100
Total Data Storage / Database Size	= 5.76
Start of Database Load	= 2007-06-28 16:05:02
End of Database Load	= 2007-06-28 21:48:31
Database Load Time	= 5:43:29
Query Streams for Throughput Test	= 5
TPC-H Power	= 5,593.1
TPC-H Throughput	= 3,654.6
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 4,521.2
Total System Price Over 3 Years	= \$19,437
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$4.30 USD

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 10,835.4 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	628214831	6/29/2007	20:55:29	6/29/2007	21:44:10	9:36:00
Stream01	628214832	6/29/2007	21:44:10	6/30/2007	0:03:02	4:48:00
Stream02	628214833	6/29/2007	21:44:10	6/30/2007	0:15:07	14:24:00
Stream03	628214834	6/29/2007	21:44:10	6/30/2007	0:15:36	2:24:00
Stream04	628214835	6/29/2007	21:44:10	6/30/2007	0:09:36	12:00:00
Stream05	628214836	6/29/2007	21:44:10	6/29/2007	23:59:33	14:24:00
Refresh00		6/29/2007	20:55:29	6/29/2007	21:44:10	0:48:41
Refresh01		6/30/2007	0:15:37	6/30/2007	0:22:04	0:06:27
Refresh02		6/30/2007	0:22:04	6/30/2007	0:28:09	0:06:05
Refresh03		6/30/2007	0:28:09	6/30/2007	0:33:44	0:05:36
Refresh04		6/30/2007	0:33:44	6/30/2007	0:39:14	0:05:29
Refresh05		6/30/2007	0:39:14	6/30/2007	0:44:46	0:05:32



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TPC-H Timing Intervals (in seconds)

Query	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08
Stream 00	193.1	11.5	19.8	23.9	44.7	26.1	63.6	76.5
Stream 01	656.4	42.8	69.1	69.8	189.4	73.6	230.5	250.8
Stream 02	708.3	63.9	135.0	94.8	129.7	109.9	297.0	254.9
Stream 03	785.7	48.5	16.3	107.9	1253.5	120.1	288.8	301.9
Stream 04	784.0	57.9	36.3	53.9	188.9	68.1	242.1	263.2
Stream 05	422.8	47.4	63.9	66.7	126.3	126.1	372.6	220.7
Min Qi	422.8	42.8	16.3	53.9	126.3	68.1	230.5	220.7
Max Qi	785.7	63.9	135.0	107.9	1253.5	126.1	372.6	301.9
Avg Qi	671.4	52.1	64.1	78.6	377.6	99.6	286.2	258.3
Query	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	277.5	23.5	37.6	249.4	58.6	8.4	12.5	23.0
Stream 01	866.3	57.2	204.0	952.9	300.3	105.0	48.5	83.5
Stream 02	998.8	172.2	176.7	1012.5	201.4	749.7	52.1	128.4
Stream 03	578.7	141.9	201.7	372.8	129.4	15.6	46.1	61.9
Stream 04	801.1	123.0	196.5	1292.7	289.6	43.4	38.0	94.7
Stream 05	843.3	100.5	143.4	1342.2	187.7	25.8	41.0	122.3
Min Qi	578.7	57.2	143.4	372.8	129.4	15.6	38.0	61.9
Max Qi	998.8	172.2	204.0	1342.2	300.3	749.7	52.1	128.4
Avg Qi	817.6	119.0	184.5	994.6	221.7	187.9	45.1	98.2
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	168.2	282.8	242.7	54.7	646.8	51.2	215.2	110.0
Stream 01	584.5	1158.1	567.2	222.8	1398.9	201.3	268.6	118.8
Stream 02	580.8	702.2	690.6	222.6	1418.7	157.3	259.3	105.1
Stream 03	908.2	685.5	543.8	216.6	2168.0	93.6	235.5	99.9
Stream 04	671.1	804.5	719.7	116.1	1716.8	123.9	225.3	103.9
Stream 05	631.9	838.7	726.3	116.5	1399.2	157.6	228.8	103.1
Min Qi	580.8	685.5	543.8	116.1	1398.9	93.6	225.3	99.9
Max Qi	908.2	1158.1	726.3	222.8	2168.0	201.3	268.6	118.8
Avg Qi	675.3	837.8	649.5	178.9	1620.3	146.7	243.5	106.2