



HP ProLiant ML370G3 2P

TPC-H Rev. 2.0

Report Date:
Aug 15, 2003

Total System Cost

\$38,683

Composite Query per Hour Metric

1,386.0
QphH@100GB

Price / Performance

\$28
\$ / QphH@100GB

Database Size

100GB

Database Manager

Microsoft SQL Server 2000 Enterprise Edition

Operating System

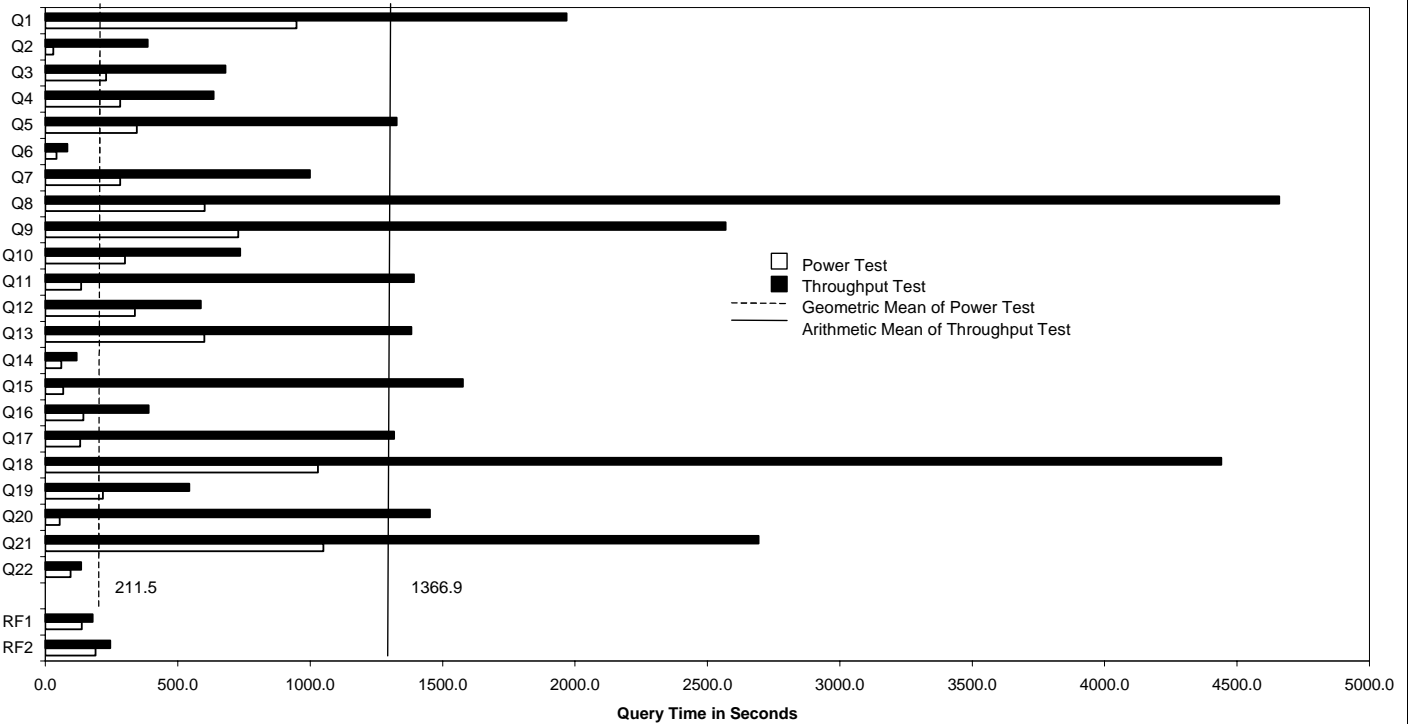
Windows Server 2003, Standard Edition

Other Software

Visual C++ .Net Standard

Availability Date

Aug 15, 2003



Database Load Time = 4:47:24

Load Included Backup: Y

Total Data Storage / Database Size = 3.71

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): N

RAID (All): N

System Configuration:

Processors : 2 x Intel Xeon 3.06 GHz with 512KB L2 cache
Memory : 4 GB memory
Disk Controllers : 2x Smart Array 6402
Disks : 22 x 18.2 GB 15K RPM drives
Total Disk Storage: 371.8 GB

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

**HP ProLiant DL370 G3**

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Report Date:

15-Aug-02

Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware						
		Brand Pricing				
ML370G3 X3.06GHz 512KB/533 1GB 1P	310590-001	1	2,699	1	2,699	
X3.06/533-512k processor	257916-B21	1	1,159	1	1,159	
1GB PC2100 DDR (2x512MB)	300679-B21	1	550	1	550	
2GB PC2100 DDR (2x1024MB)	300680-B21	1	1,300	1	1,300	
Internal 2 Bay HotPlug U2/U3 SCSI Drive Cage	244059-B21	1	370	1	370	
S5500 15" Monitor	261602-001	1	129	1	129	
UPS T700	204015-001	1	325	1	325	
Servers 300 Series CarePaq, 3yr 7x24, 4hr resp.	162675-002	1	599	1		599
				Subtotal	6,532	599
Storage						
Smart Array 6402 Controller	273915-B21	1	1,299	2	2,598	
StorageWorks Enclosure Model 4314T- Tower	190210-001	1	3,182	1	3,182	
Ultra3 Dual I/O module upgrade for 4214, 4254 or 4314	190213-B21	1	569	1	569	
18.2GB 15Krpm U320 UNI HDD - internal	286775-B22	1	359	8	2,872	
18.2GB 15Krpm U320 UNI HDD - external	286775-B22	1	359	14	5,026	
18.2GB 15Krpm U320 UNI HDD - 10% spares	286775-B22	1	359	2	718	
CarePaq 43xx Enclosure, 3yr, 7x24, 4hr resp.	171242-002	1	157	1		157
				Subtotal	14,965	157
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	14.0%	1			(\$3,010)	(\$106)
				Hardware Subtotal	18,487	650
Software						
Microsoft SQL Server 2000 Enterprise Edition	810-00652	Microsoft	2	5,549	1	5,549
Database Server Support Package, 1 Year	PRO-PRORS-16U-01	Microsoft	2	1,950	3	5,850
Microsoft SQL Server 2000 Client Licenses	359-00532	Microsoft	2	146	50	7,300 included
Microsoft Windows Server 2003 - Standard Edition	P73-00295	Microsoft	2	738	1	738 included
Microsoft Visual C++ .NET Standard	254-00170	Microsoft	2	109	1	109 included
				Subtotal	13,696	5,850
				Total	\$32,183	\$6,500

3-Year Cost of Ownership: \$38,683**QpH Rating: 1386.0****\$ / QpH@100GB: \$28**

Pricing: 1=HP; 2= Microsoft

Note: The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics

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	= 100
Total Data Storage / Database Size	= 3.71
Start of Database Load	= 2003-07-11 12:57:37
End of Database Load	= 2003-07-11 17:45:01
Database Load Time	= 4:47:24
Query Streams for Throughput Test	= 5
TPC-H Power	= 1701.9
TPC-H Throughput	= 1128.7
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 1386.0
Total System Price Over 3 Years	= \$38,683
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$28

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 35084.3 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	711174501	7/12/2003	15:38:34	7/12/2003	17:52:32	2:13:58
Stream01	711174502	7/12/2003	17:52:33	7/13/2003	3:01:59	9:09:26
Stream02	711174503	7/12/2003	17:52:33	7/13/2003	2:59:01	9:06:28
Stream03	711174504	7/12/2003	17:52:33	7/13/2003	2:35:03	8:42:30
Stream04	711174505	7/12/2003	17:52:33	7/13/2003	1:40:13	7:47:40
Stream05	711174506	7/12/2003	17:52:33	7/13/2003	0:52:24	6:59:51
Refresh00		7/12/2003	15:38:34	7/12/2003	17:52:32	2:13:58
Refresh01		7/13/2003	3:02:00	7/13/2003	3:08:23	0:06:23
Refresh02		7/13/2003	3:08:23	7/13/2003	3:15:35	0:07:12
Refresh03		7/13/2003	3:15:35	7/13/2003	3:22:49	0:07:14
Refresh04		7/13/2003	3:22:49	7/13/2003	3:30:05	0:07:16
Refresh05		7/13/2003	3:30:05	7/13/2003	3:37:18	0:07:12



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TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	948.5	30.4	230.0	281.8	345.3	41.4	283.1	600.9
Stream 01	1721.0	598.4	675.3	347.7	1189.6	58.7	1448.5	7729.9
Stream 02	1874.5	823.7	633.8	590.4	1496.0	113.9	1002.0	7093.2
Stream 03	2076.9	178.2	703.6	684.5	1454.5	47.5	770.6	5000.8
Stream 04	2111.6	240.7	798.9	826.6	998.2	67.0	484.6	1054.9
Stream 05	2059.4	90.2	588.9	725.8	1495.9	127.2	1291.6	2415.3
Min Qi	1721.0	90.2	588.9	347.7	998.2	47.5	484.6	1054.9
Max Qi	2111.6	823.7	798.9	826.6	1496.0	127.2	1448.5	7729.9
Avg Qi	1968.7	386.2	680.1	635.0	1326.8	82.9	999.5	4658.8
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	728.6	300.8	135.5	338.4	600.0	60.0	66.8	143.8
Stream 01	1779.0	508.8	1640.2	782.6	2056.2	131.5	702.0	473.2
Stream 02	2495.3	887.4	831.9	617.5	1231.1	141.0	1559.2	385.5
Stream 03	2307.4	926.2	1630.1	453.3	1435.1	67.7	1534.4	229.1
Stream 04	3843.4	860.4	1901.9	654.1	1090.8	111.5	2443.0	427.1
Stream 05	2417.8	496.6	954.4	426.3	1099.0	139.4	1645.3	433.4
Min Qi	1779.0	496.6	831.9	426.3	1090.8	67.7	702.0	229.1
Max Qi	3843.4	926.2	1901.9	782.6	2056.2	141.0	2443.0	473.2
Avg Qi	2568.6	735.9	1391.7	586.8	1382.4	118.2	1576.8	389.7
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	131.8	1029.9	217.8	53.7	1049.9	94.3	136.9	189.5
Stream 01	618.7	5177.4	240.9	1969.1	2986.2	131.5	140.4	242.7
Stream 02	3550.5	4067.8	702.9	455.3	2095.9	139.7	187.9	243.9
Stream 03	870.3	4675.5	347.8	3376.5	2439.0	141.4	187.9	246.5
Stream 04	1361.8	3839.9	891.8	1092.1	2837.2	122.4	189.0	246.7
Stream 05	183.0	4448.6	533.6	372.4	3112.0	135.6	187.4	245.8
Min Qi	183.0	3839.9	240.9	372.4	2095.9	122.4	140.4	242.7
Max Qi	3550.5	5177.4	891.8	3376.5	3112.0	141.4	189.0	246.7
Avg Qi	1316.9	4441.8	543.4	1453.1	2694.1	134.1	178.5	245.1