



HP ProLiant DL760G2 8P

TPC-H Rev. 2.0

Report Date:
Sep 26, 2003

Total System Cost

\$172,288

Composite Query per Hour Metric

4063.6

QphH@300GB

Price / Performance

\$43

\$ / QphH@300GB

Database Size

300GB

Database Manager

Microsoft SQL Server 2000 Enterprise Edition

Operating System

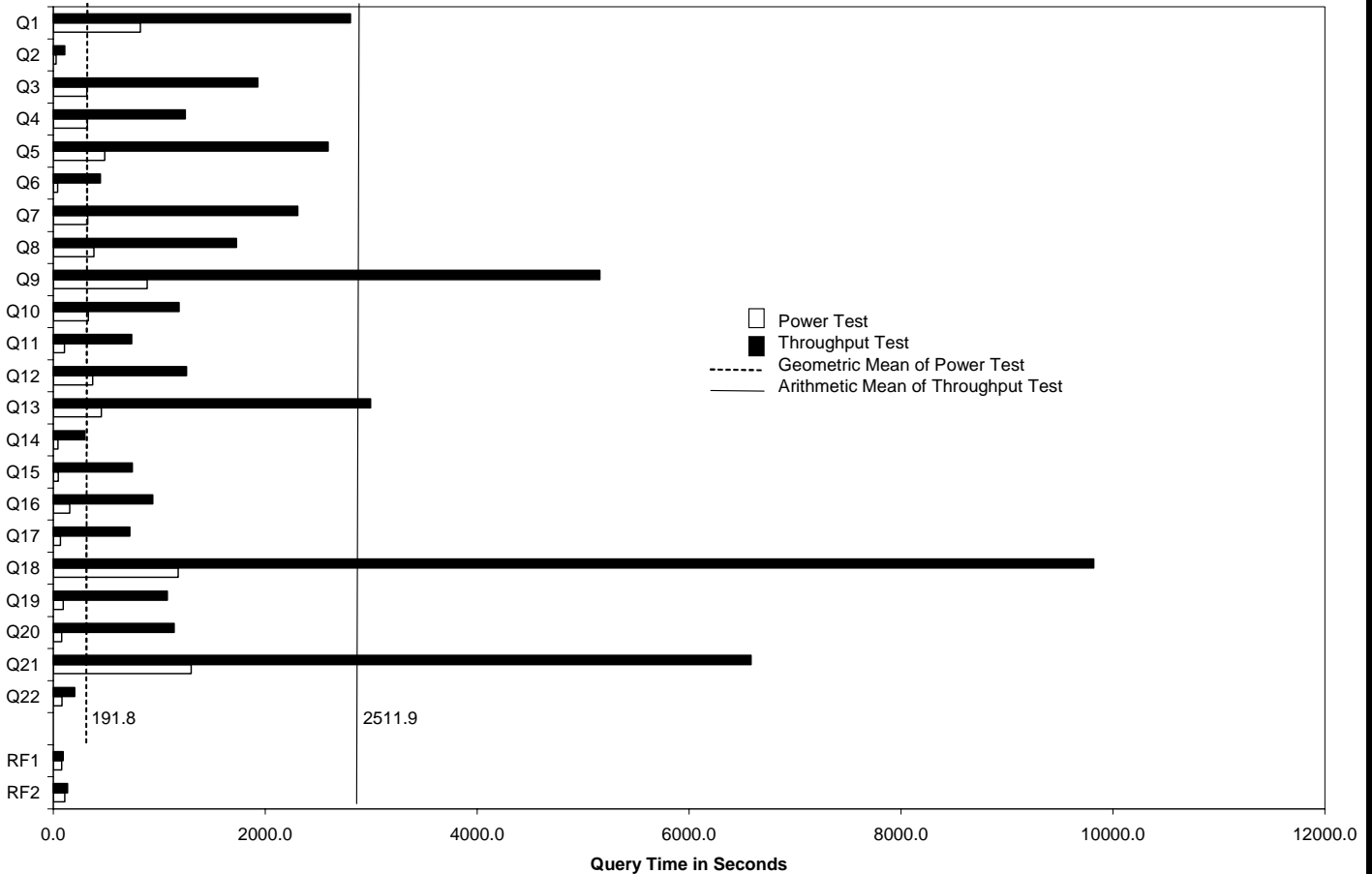
Windows Server 2003, Enterprise Edition

Other Software

Visual C++ .Net Standard

Availability Date

Sep 26, 2003



Database Load Time = 11:05:44

Load Included Backup: Y

Total Data Storage / Database Size = 8.48

RAID (Base tables only): N

RAID (Base tables and auxiliary data structures): N

RAID (All): N

System Configuration:

Processors : 8 x Intel Xeon MP 2.8 GHz with 2MB L2 cache
Memory : 16 GB memory
Disk Controllers : 5x Smart Array 5302
Disks : 142 x 18.2 GB 15K RPM drives, 2x 72GB 15K RPM drives
Total Disk Storage: 2542.6 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						
ProLiant DL760 G2 X2.8-2M 4P 4G - 4GB addressable RAM, 1GB redundant RAM - integrated Smart Array 5i controller	326703-B21	1	49,199	1	49,199	
X2.8-2M 4P DL760 G2	334037-B21	1	29,699	1	29,699	
512 REG PC133	236853-B21	1	339	22	7,458	
Monitor 15" S5500	261602-169	1	129	1	129	
PS/2 scroll mse HP carbonite	DK725AV	1	10	1	10	
HP Enhanced Keyboard	DG170AV#ABA	1	10	1	10	
Rack Model 9142 (42U - Opal) - Flat Pallet	120663-B21	1	1,321	1	1,321	
Rack Sidewall Kit	120670-B21	1	207	1	207	
18.2 GB Hot-Plug Wide U320 15K 1"	286775-B22	1	299	2	598	
72 GB Hot-Plug Wide U320 15K 1"	286778-B22	1	909	2	1,818	
UPS T1500 XR	204155-002	1	621	1	621	
Servers 700 Series CarePaq, 3yr 7x24, 4hr resp.	401784-002	1	3,390	1		3,390
Subtotal					91,070	3,390
Storage						
Smart Array 5302/128	283552-B21	1	1,299	5	6,495	
StorageWorks Enclosure Model 4314R - Rack-mountable	190209-001	1	2,955	10	29,550	
18.2 GB Hot-Plug Wide U320 15K 1"	286775-B22	1	299	140	41,860	
18.2 GB Hot-Plug Wide U320 15K 1" (10% spare)	286775-B22	1	299	14	4,186	
CarePaq 43xx Enclosure, 3yr, 7x24, 4hr resp.	171242-002	1	157	10		1,570
Subtotal					82,091	1,570
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	16.0%	1			(\$27,706)	(\$794)
Hardware Subtotal					145,455	4,166
Software						
Microsoft SQL Server 2000 Enterprise Edition	810-00652	Microsoft	2	5,549	1	5,549
Database Server Support Package	RO-PRORS-16U-01	Microsoft	2	1,950	3	5,850
Microsoft SQL Server 2000 Client Licenses	359-00532	Microsoft	2	146	60	8,760 included
Windows Server 2003, Enterprise Edition	P72-00264	Microsoft	2	2,399	1	2,399 included
Visual C++ .Net Standard	254-00170	Microsoft	2	109	1	109 included
Subtotal					16,817	5,850
Total					\$162,272	\$10,016

3-Year Cost of Ownership: \$172,288**QpH Rating: 4063.6****\$/QpH@100GB: \$43**

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	= 300
Total Data Storage / Database Size	= 8.48
Start of Database Load	= 2003-09-09 11:47:44
End of Database Load	= 2003-09-09 22:53:28
Database Load Time	= 11:05:44
Query Streams for Throughput Test	= 6
TPC-H Power	= 5630.5
TPC-H Throughput	= 2932.8
TPC-H Composite Query-per-Hour Metric (QpH@300GB)	= 4063.6
Total System Price Over 3 Years	= \$172,288
TPC-H Price/ Performance Metric (\$/QpH@300GB)	= \$43

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 48608.1 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	909225328	9/9/2003	23:28:38	9/10/2003	1:43:59	2:15:21
Stream01	909225329	9/10/2003	1:43:59	9/10/2003	13:46:19	12:02:20
Stream02	909225330	9/10/2003	1:43:59	9/10/2003	14:50:48	13:06:49
Stream03	909225331	9/10/2003	1:43:59	9/10/2003	14:33:43	12:49:44
Stream04	909225332	9/10/2003	1:43:59	9/10/2003	14:37:56	12:53:57
Stream05	909225333	9/10/2003	1:43:59	9/10/2003	14:31:39	12:47:40
Stream06	909225334	9/10/2003	1:43:59	9/10/2003	14:48:29	13:04:30
Refresh00		9/9/2003	23:28:38	9/10/2003	1:43:59	2:15:21
Refresh01		9/10/2003	14:50:49	9/10/2003	14:54:15	0:03:27
Refresh02		9/10/2003	14:54:16	9/10/2003	14:58:11	0:03:55
Refresh03		9/10/2003	14:58:11	9/10/2003	15:02:13	0:04:02
Refresh04		9/10/2003	15:02:13	9/10/2003	15:06:08	0:03:55
Refresh05		9/10/2003	15:06:09	9/10/2003	15:10:12	0:04:03
Refresh06		9/10/2003	15:10:12	9/10/2003	15:14:07	0:03:55



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TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	822.8	28.7	315.5	322.4	486.8	42.4	326.8	382.4
Stream 01	1970.8	89.6	1713.1	925.7	2653.7	406.9	2285.6	1613.6
Stream 02	3356.6	79.6	2792.7	1418.7	2509.7	103.0	2223.9	1576.3
Stream 03	1906.5	178.5	863.6	1633.6	2461.4	521.5	2211.8	2502.2
Stream 04	3030.7	108.7	1737.0	1056.9	2514.9	618.4	3428.7	1844.7
Stream 05	3329.4	128.7	1647.9	1205.9	3155.5	467.8	1690.7	1267.9
Stream 06	3244.6	67.0	2838.4	1232.2	2264.2	558.8	2008.9	1582.7
Min Qi	1906.5	67.0	863.6	925.7	2264.2	103.0	1690.7	1267.9
Max Qi	3356.6	178.5	2838.4	1633.6	3155.5	618.4	3428.7	2502.2
Avg Qi	2806.4	108.7	1932.1	1245.5	2593.2	446.1	2308.3	1731.2
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	885.9	332.4	106.3	370.6	454.3	45.8	46.3	154.7
Stream 01	3764.1	1251.9	748.8	1167.4	2466.7	192.0	213.8	867.3
Stream 02	6941.8	1510.5	1035.4	798.4	2682.1	403.2	489.6	1379.3
Stream 03	4284.5	1133.2	791.8	822.5	3938.5	308.2	320.9	973.7
Stream 04	5410.0	1098.5	395.5	902.5	2670.6	349.8	377.5	904.7
Stream 05	5416.8	927.3	553.7	2725.0	2514.1	387.1	445.6	755.0
Stream 06	5133.8	1211.9	922.8	1137.7	3702.3	155.0	2624.5	763.1
Min Qi	3764.1	927.3	395.5	798.4	2466.7	155.0	213.8	755.0
Max Qi	6941.8	1510.5	1035.4	2725.0	3938.5	403.2	2624.5	1379.3
Avg Qi	5158.5	1188.9	741.3	1258.9	2995.7	299.2	745.3	940.5
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	69.2	1179.7	93.3	79.5	1302.3	82.9	79.8	110.1
Stream 01	752.7	9677.0	1918.1	1405.3	7065.9	190.6	70.4	136.2
Stream 02	1195.8	9792.8	1279.3	1814.4	3634.7	192.2	100.6	134.9
Stream 03	655.5	10148.5	1033.3	1181.3	8125.6	188.4	99.8	142.2
Stream 04	600.3	9806.7	338.9	1320.9	7732.4	190.1	99.9	135.1
Stream 05	460.5	9680.2	1266.1	650.9	7140.7	244.4	101.1	142.1
Stream 06	666.7	9821.8	628.3	482.5	5812.2	210.6	101.1	134.1
Min Qi	460.5	9677.0	338.9	482.5	3634.7	188.4	70.4	134.1
Max Qi	1195.8	10148.5	1918.1	1814.4	8125.6	244.4	101.1	142.2
Avg Qi	721.9	9821.2	1077.3	1142.6	6585.3	202.7	95.5	137.4