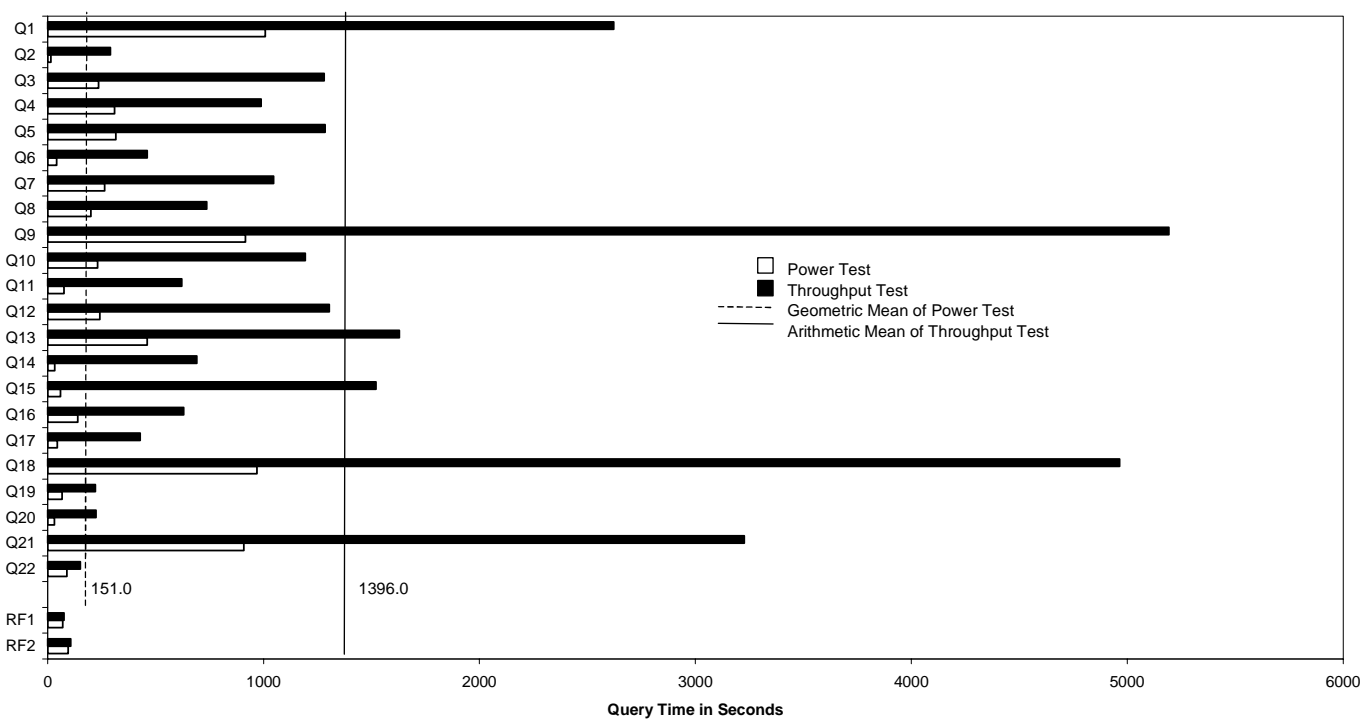


Hewlett-Packard Company	HP ProLiant DL580 G2	TPC-H Rev. 2.0		
		Report Date: June 26, 2002		
Total System Cost	Composite Query per Hour Metric	Price / Performance		
\$111,460	1695.0 QphH@100GB	\$66 \$/ QphH@100GB		
Database Size	Database Manager	Operating System	Other Software	Availability Date
100GB	Microsoft SQL Server 2000 Enterprise Edition	Microsoft Windows 2000 Advanced Server	Visual Studio Professional 6.0	June 26, 2002



Database Load Time = 3:34:14	Load Included Backup: Y	Total Data Storage / Database Size = 12.35
RAID (Base tables only): N	RAID (Base tables and auxiliary data structures): N	RAID (All): N

System Configuration:

- Processors :** 4 x Intel Xeon MP 1.6GHz with 1MB ECC L3 cache
- Memory :** 4 GB memory
- Disk Controllers :** 6 x Smart Array 5304
- Disks :** 2 x 9.1 GB 10K RPM drive
72 x 18.2 GB 15K RPM drives
- Total Disk Storage:** 1328.6 GB

Hewlett-Packard		HP ProLiant DL580 G2		TPC-H Rev. 2.0		
Company					Report Date:	26-Jun-02
Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price
Server Hardware		Brand Pricing				
HP ProLiant DL580 X1600 2P X2G	201203-001	1	18576.00	1	18,576	
1.6 GHz 1M processor	226776-B21	1	5132.00	2	10,264	
4GB (4x1GB)	202172-B21	1	2433.00	1	2,433	
S5500 15" Monitor	261602-169	1	169	1	169	
Scroll Mouse Carbon	231947-B21	1	5	1	5	
PS/2 Easy Access Internet Mouse	265977-001	1	12	1	12	
Belkin USB 10/100 FastEthernet	F5D5050	3	30	1	30	
Rack Model 9142 (42U - Opal) - Flat Pallet	120663-B21	1	1,321	1	1,321	
Rack Sidewall Kit	120670-B21	1	207	1	207	
UPS T1500 XR	204155-002	1	621	1	621	
CarePaq 3YR 24X7 4HR 500 SERIES SVR (FM-MI724-36)	401782-002	1	1,795	1		1,795
Subtotal					33,638	1,795
Storage						
HP SMART Array Controller 5304 - 4SCSI channels	158939-B21	1	2,052	6	12,312	
StorageWorks Enclosure Model 4354R - Rack-mountable	190211-001	1	3,523	6	21,138	
18.2GB Pluggable Ultra3 SCSI 10K 1" Universal HDD	142673-B22	1	311	2	622	
18.2 GB Hot-Plug Wide U3 15K 1"	188122-B22	1	390	72	28,080	
18.2 GB Hot-Plug Wide U3 15K 1" (10% spare)	188122-B22	1	390	8	3,120	
CarePaq 3YR 24X7/4HR EMPTY DISK ENCL (FM-4E724-36)	171242-002	1	157	6		942
Subtotal					65,272	942
Hardware and Maintenance Discount						
Large Purchase and Net 30 discount	16.0%	1			(\$15,826)	(\$438)
Hardware Subtotal					83,084	2,299
Software						
Microsoft SQL Server 2000 Enterprise Edition	810-00845 Microsoft	2	5,549	1	5,549	9,750
Microsoft SQL Server 2000 Client Licenses	359-00532 Microsoft	2	7,300	1	7,300	included
Microsoft Windows 2000 Advanced Server	C10-00475 Microsoft	2	2,399	1	2,399	included
Microsoft Visual Studio Professional 6.0 Win32	659-00390 Microsoft	2	1,079	1	1,079	included
Subtotal					16,327	9,750
Total					\$99,411	\$12,049
Three-Year Cost of Ownership:					\$111,460	
QphH Rating:					1695.0	
\$ / QphH:					\$66	
Pricing: 1=HP; 2= Microsoft; 3=EMS Computing						
Note:The benchmark results and test methodology were audited by Lorna Livingtree of Performance Metrics; Rev. 1.3 submission on 6/26/2002; Rev. 2.0 upgrade 3/12/2003.						

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.

**Hewlett-Packard
Company**

HP ProLiant DL580 G2

TPC-H Rev. 2.0

Report Date:
June 26, 2002

Numerical Quantities

Measurement Results:

Database Scale Factor	= 100
Total Data Storage / Database Size	= 12.35
Start of Database Load	= 2002-06-24 19:41:17
End of Database Load	= 2002-06-24 23:15:31
Database Load Time	= 3:34:14
Query Streams for Throughput Test	= 5
TPC-H Power	= 2385.5
TPC-H Throughput	= 1204.4
TPC-H Composite Query-per-Hour Metric (QphH@100GB)	= 1695.0
Total System Price Over 3 Years	= \$111,460
TPC-H Price/ Performance Metric (\$/QphH@100GB)	= \$66

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 32878.0 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	624231530	6/25/02	10:42:37	6/25/02	12:36:19	1:53:41
Stream01	624231531	6/25/02	12:36:20	6/25/02	21:11:51	8:35:32
Stream02	624231532	6/25/02	12:36:20	6/25/02	21:29:02	8:52:42
Stream03	624231533	6/25/02	12:36:20	6/25/02	21:23:31	8:47:12
Stream04	624231534	6/25/02	12:36:20	6/25/02	20:33:15	7:56:55
Stream05	624231535	6/25/02	12:36:20	6/25/02	21:02:56	8:26:37
Refresh00		6/25/02	10:42:37	6/25/02	12:36:19	1:53:41
Refresh01		6/25/02	21:29:02	6/25/02	21:31:54	0:02:52
Refresh02		6/25/02	21:31:54	6/25/02	21:35:00	0:03:06
Refresh03		6/25/02	21:35:00	6/25/02	21:38:06	0:03:06
Refresh04		6/25/02	21:38:06	6/25/02	21:41:12	0:03:06
Refresh05		6/25/02	21:41:12	6/25/02	21:44:18	0:03:05

**Hewlett-Packard
Company**

HP ProLiant DL580 G2

TPC-H Rev. 2.0

Report Date:
June 26, 2002

TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	1007.1	16.0	235.7	309.8	316.1	41.4	264.2	200.2
Stream 01	2082.7	261.9	939.6	698.9	1139.0	520.8	721.7	345.2
Stream 02	2911.8	231.1	1774.8	1143.6	1311.6	172.9	903.0	287.0
Stream 03	3108.9	299.8	435.6	1053.6	2015.1	727.5	1040.4	1131.9
Stream 04	2257.5	262.3	1151.7	933.6	816.3	505.2	1653.6	1355.1
Stream 05	2743.3	402.3	2099.1	1116.1	1143.6	377.8	910.9	569.7
Min Qi	2082.7	231.1	435.6	698.9	816.3	172.9	721.7	287.0
Max Qi	3108.9	402.3	2099.1	1143.6	2015.1	727.5	1653.6	1355.1
Avg Qi	2620.8	291.5	1280.2	989.2	1285.1	460.8	1045.9	737.8
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	915.5	232.4	76.0	241.5	460.6	33.5	59.0	140.0
Stream 01	5410.8	1129.2	899.3	1799.4	2016.5	937.7	1820.7	290.4
Stream 02	6770.6	891.9	937.0	1325.8	1670.2	1381.0	1493.6	1515.9
Stream 03	5010.7	1049.3	656.5	868.4	1606.4	705.3	2027.0	399.8
Stream 04	3836.4	1123.7	252.4	1389.3	1621.3	366.8	983.9	611.3
Stream 05	4935.1	1772.5	361.0	1133.6	1230.7	60.4	1277.0	332.2
Min Qi	3836.4	891.9	252.4	868.4	1230.7	60.4	983.9	290.4
Max Qi	6770.6	1772.5	937.0	1799.4	2016.5	1381.0	2027.0	1515.9
Avg Qi	5192.7	1193.3	621.2	1303.3	1629.0	690.2	1520.4	629.9
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	44.3	968.8	66.4	31.1	907.9	89.2	70.6	94.8
Stream 01	372.9	5849.6	113.8	144.3	3309.3	128.8	64.4	106.7
Stream 02	444.8	4555.9	308.4	176.6	1615.7	139.8	78.8	107.1
Stream 03	343.6	4133.4	408.8	186.0	4274.4	150.2	79.0	107.1
Stream 04	667.6	4755.1	184.9	157.2	3591.8	138.8	78.3	107.7
Stream 05	312.2	5527.9	90.7	459.2	3343.3	198.4	78.2	107.0
Min Qi	312.2	4133.4	90.7	144.3	1615.7	128.8	64.4	106.7
Max Qi	667.6	5849.6	408.8	459.2	4274.4	198.4	79.0	107.7
Avg Qi	428.2	4964.4	221.3	224.7	3226.9	151.2	75.7	107.1