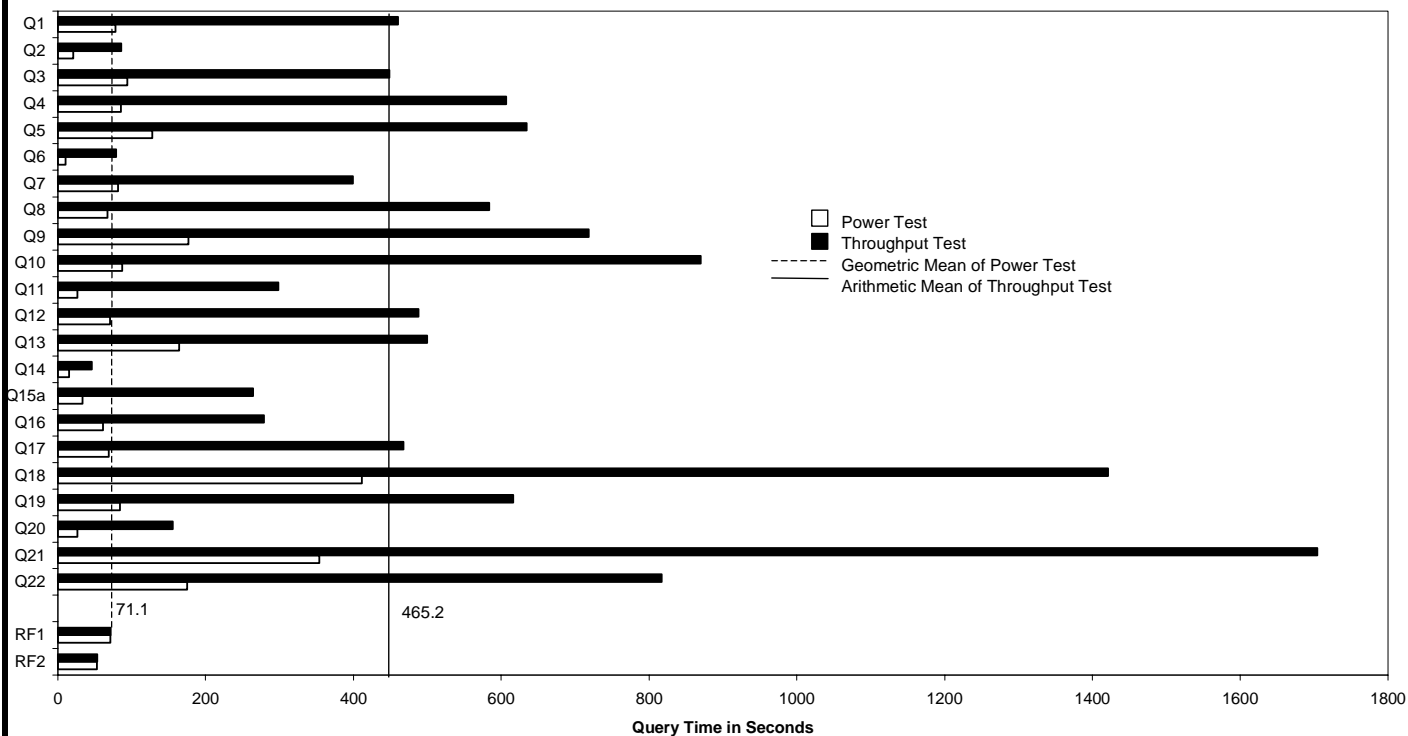


Hewlett Packard Company		HP ProLiant DL760 X900-64P		TPC-H Rev. 2.0	
				Report Date: April 9, 2002	
Total System Cost		Composite Query per Hour Metric		Price / Performance	
\$2,636,750		12995.4 QphH@300GB		\$203 \$/ QphH@300GB	
Database Size	Database Manager	Operating System	Other Software	Availability Date	
300GB	IBM DB2 UDB 7.2	Microsoft Windows 2000 Advanced Server	Microsoft Visual C++ 6.0	June 20, 2002	



Database Load Time = 1:18:04	Load Included Backup: N	Total Data Storage / Database Size = 22.61
RAID (Base tables only): Y	RAID (Base tables and auxiliary data structures): Y	RAID (All): Y

System Configuration: 16 nodes

Processors (per node) : 4 x 900MHz Intel Pentium III Xeon Processors w/ 2MB cache
Memory (per node) : 4 GB memory
Disks (per node) : 1 x 9GB 10K RPM drive
 24 x 18GB 15K RPM drives
Servers interconnect : 32 ports Gigabit Ethernet Switch
Total Disk Storage: 6783.36 GB

Hewlett Packard Company

ProLiant DL760 X900

TPC-H Rev. 2.0

Report Date:

9-Apr-02

Description	Part Number	Third Party	Unit Price	Qty	Extended Price	3 yr. Maint. Price	
Server Hardware							
Brand Pricing							
ProLiant DL760 X900-2M 4P 2G - 4 Pentium III Xeon/900MHz 2MB Cache - 2 GB SD RAM Memory - CD-ROM 24X - 10/100 Ethernet Controller	212692-001	1	44,400	16	710,400		
1G-Memory Kit SDRAM (2 x 512MB)	328808-B21	1	1,436	32	45,952		
NC6136 Gigabit Server Adapter, 64-bit/66MHz, PCI, 1000 SX	203539-B21	1	621	16	9,936		
S5500 15" Monitor	261602-169	1	169	16	2,704		
Scroll Mouse Carbon	231947-B21	1	5	16	80		
PS/2 Easy Access Internet Keyboard	265977-001	1	12	16	192		
Rack Model 9142 (42U - Opal) - Flat Pallet	120663-B21	1	1,321	6	7,926		
Rack Coupling Kit	120669-B21	1	83	5	415		
Sidewall Panel Kit	120670-B21	1	207	1	207		
CarePaq 3YR 24X7 4HR 700 SERIES SVR (FM-HE724-36)	401784-002	1	3,390	16		54,24	
Subtotal					777,812	54,24	
Storage							
Compaq SMART Array Controller 5304 - 4SCSI channels	158939-B21	1	2,052	32	65,664		
StorageWorks Enclosure Model 4354R - Rack-mountable	190211-001	1	3,523	32	112,736		
18.2GB Pluggable Ultra3 SCSI 10K 1" Universal HDD	142673-B22	1	311	16	4,976		
18.2 GB Hot-Plug Wide U3 15K 1"	188122-B22	1	390	384	149,760		
18.2 GB Hot-Plug Wide U3 15K 1" (10% spare)	188122-B22	1	390	39	15,210		
CarePaq 3YR 24X7/4HR EMPTY DISK ENCL (FM-4E724-36)	171242-002	1	157	32		5,02	
Subtotal					348,346	5,02	
Hardware and Maintenance Discount							
Large Purchase and Net 30 discount	16.0%	1			(\$180,185)	(\$9,48)	
Hardware Subtotal					945,973	49,78	
Software							
DB2 EE Edi. Lic. with 1Y support per processor	D5B5RLL IBM	3	22,153	64	1,417,792	include	
DB2 EE Edi. Support per processor per year (Y2 and Y3)	E1B5ULL IBM	3	1,081	128		138,36	
Microsoft Windows 2000 Advanced Server	C10-00475 Microsoft	2	2,399	16	38,384	include	
Microsoft Visual Studio Professional 6.0 Win32	659-00390 Microsoft	2	1,079	1	1,079	include	
Subtotal					1,457,255	138,36	
Connectivity							
Extreme Summit 7i		Extreme	4	15,124	3	45,372	include
Connectivity Subtotal					45,372		
Total					\$2,448,600	\$188,15	
Three-Year Cost of Ownership:					\$2,636,750		
QphH Rating:					12995.4		
\$ / QphH:					\$203		

Pricing: 1=HP; 2= Microsoft; 3=IBM; 4=Extreme

Note: The benchmark results and test methodology were audited by Bradley J. Askins of InfoSizing (www.sizing.com); Rev.1.3 submission on 4/9/2003; Rev. 2.0 upgrade on 3/12/2003.

Audited by: Bradley J. Askins of Infosizing (www.sizing.com)

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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**HP
ProLiant DL760 X900-64P**

TPC-H Rev. 2.0

Report Date:
April 9, 2002

Numerical Quantities

Measurement Results:

Database Scale Factor	= 300
Total Data Storage / Database Size	= 22.61
Start of Database Load	= 4/3/2002 19:02:01
End of Database Load	= 4/3/2002 20:20:05
Database Load Time	= 1:18:04
Query Streams for Throughput Test	= 6
TPC-H Power	= 15372.8
TPC-H Throughput	= 10985.6
TPC-H Composite Query-per-Hour Metric (QphH@300GB)	= 12995.4
Total System Price Over 5 Years	= \$2,636,750
TPC-H Price/ Performance Metric (\$/QphH@300GB)	= \$203

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 12977 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start time	Stop Date	Stop Time	Duration
Stream00	403202005	4/3/2002	21:46:03	4/3/2002	22:26:47	0:40:44
Stream01	403202006	4/3/2002	22:26:53	4/4/2002	1:46:30	3:19:37
Stream02	403202007	4/3/2002	22:26:53	4/4/2002	1:47:35	3:20:42
Stream03	403202008	4/3/2002	22:26:53	4/4/2002	1:50:06	3:23:13
Stream04	403202009	4/3/2002	22:26:53	4/4/2002	1:42:20	3:15:27
Stream05	403202010	4/3/2002	22:26:56	4/4/2002	1:50:40	3:23:44
Stream06	403202011	4/3/2002	22:26:57	4/4/2002	1:38:28	3:11:31
Refresh		4/4/2002	1:50:40	4/4/2002	2:03:09	0:12:29

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**HP
ProLiant DL760 X900-64P**

TPC-H Rev. 2.0

Report Date:
April 9, 2002

TPC-H Timing Intervals (in seconds)

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 00	78.3	20.9	94.3	85.4	127.6	10.7	81.5	67.4
Stream 01	365.7	149.3	467.5	389.9	714.5	33.8	361.5	418.8
Stream 02	631.1	80.3	517.6	625.6	634.8	91.4	276.4	652.6
Stream 03	405.1	92.5	139.9	716.3	632.2	71.5	564.6	680.3
Stream 04	649.1	57.3	438.1	571.9	665.6	83.8	404.3	404.6
Stream 05	390.0	58.0	625.3	653.7	536.0	123.8	372.0	732.7
Stream 06	322.2	79.0	501.8	683.1	621.9	69.4	415.1	611.9
Min Qi	322.2	57.3	139.9	389.9	536.0	33.8	276.4	404.6
Max Qi	649.1	149.3	625.3	716.3	714.5	123.8	564.6	732.7
Avg Qi	460.5	86.1	448.4	606.8	634.2	79.0	399.0	583.5
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 00	176.7	87.1	26.6	70.6	164.1	14.9	33.5	61.3
Stream 01	948.8	835.9	257.6	382.0	597.7	42.9	152.5	380.0
Stream 02	1079.7	734.1	209.6	335.0	503.7	42.0	349.8	171.8
Stream 03	506.9	927.3	385.8	430.5	401.2	54.4	316.2	302.1
Stream 04	450.2	959.2	542.8	696.0	467.0	40.8	318.3	239.4
Stream 05	493.4	846.6	149.7	611.6	518.2	51.0	275.5	321.9
Stream 06	831.4	916.6	244.7	474.8	510.7	45.6	171.7	258.2
Min Qi	450.2	734.1	149.7	335.0	401.2	40.8	152.5	171.8
Max Qi	1079.7	959.2	542.8	696.0	597.7	54.4	349.8	380.0
Avg Qi	718.4	870.0	298.4	488.3	499.8	46.1	264.0	278.9
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	69.2	411.5	84.1	26.2	353.9	174.7	71.0	52.9
Stream 01	340.4	1538.1	661.2	105.5	1953.0	880.3	66.0	54.1
Stream 02	622.5	1256.1	616.2	182.3	1335.2	1094.0	72.2	52.9
Stream 03	446.1	1545.0	485.4	139.7	1848.8	1101.3	72.8	53.9
Stream 04	402.5	1112.9	607.9	132.5	1592.4	890.0	72.9	53.6
Stream 05	468.8	1812.2	671.0	180.5	1948.0	384.1	71.7	53.3
Stream 06	525.4	1260.3	655.4	191.5	1547.5	553.2	73.0	52.7
Min Qi	340.4	1112.9	485.4	105.5	1335.2	384.1	66.0	52.7
Max Qi	622.5	1812.2	671.0	191.5	1953.0	1101.3	73.0	54.1
Avg Qi	467.6	1420.8	616.2	155.3	1704.2	817.2	71.4	53.4