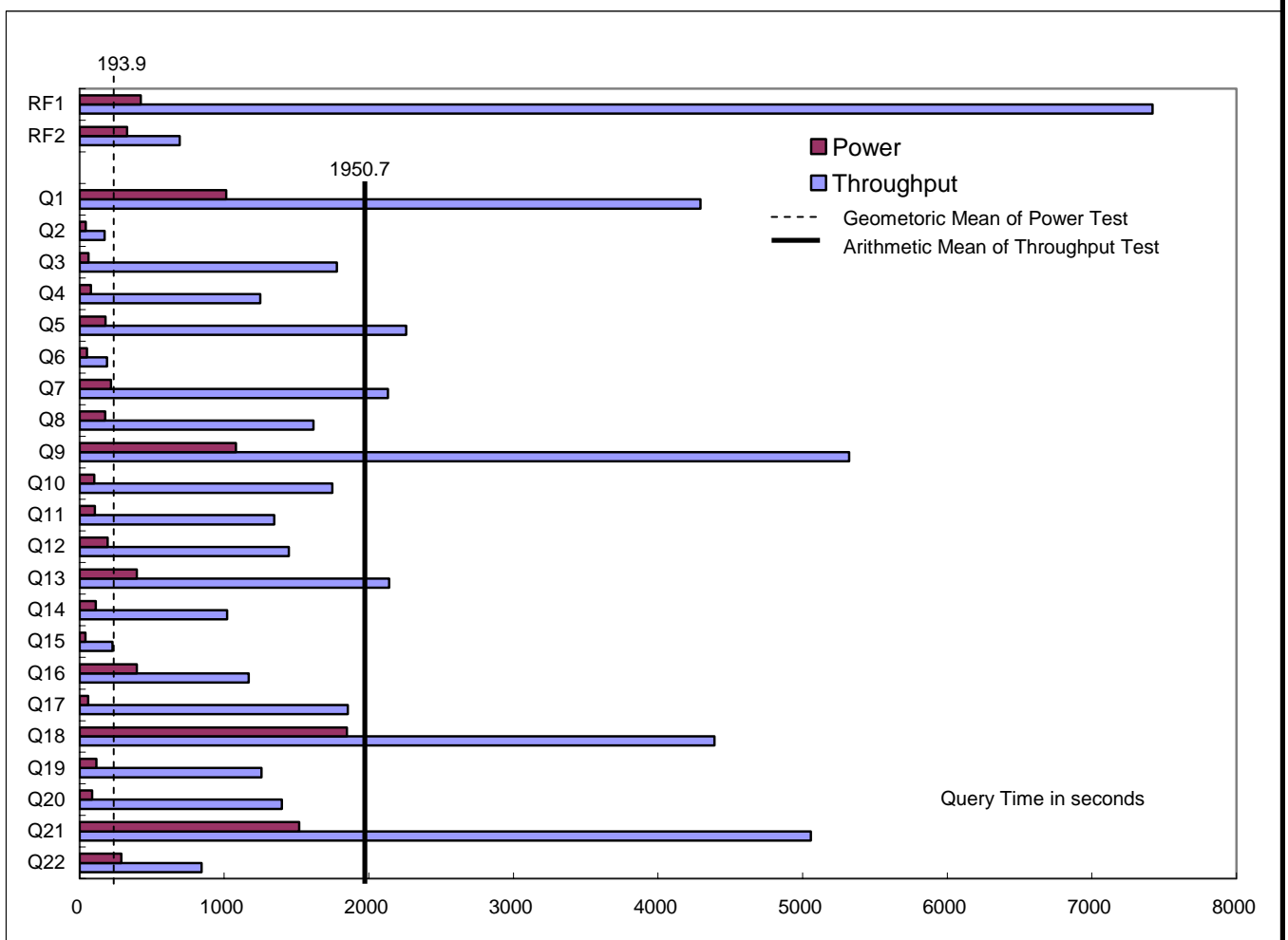


NEC	NEC Express5800/1320Xe (16 SMP)	TPC-H Rev.2.10		
		Reported Date June 7, 2005		
Total System Cost	Composite Query per Hour Metric	Price/Performance		
\$1,338,176 (USD)	13,453.9 QphH@1000GB	\$99.47 / QphH@1000GB		
Database size	Database Manager	Operating System	Other Software	Availability Date
1000 GB	Microsoft SQL Server 2005 Enterprise Edition 64-bit	Microsoft® Windows® Server 2003, Datacenter Edition for 64-bit Itanium-based Systems SP1	Microsoft® Visual Studio .NET 2003	Dec 7, 2005



Database Load Time = 15:25:27	Load include backup: N	Disk Size/Database Size = 23.17
RAID(Base table only):Y	RAID(Base tables and auxiliary data structures):Y	RAID(All):Y

System Configuration:

<u>NEC Express5800/1320Xe</u> 16 x Intel® Itanium® 2 1.6GHz 9MB L3 cache 64GB Memory 45 x QLogic™ QLA2340 1 x SCSI HBA 1 x Gbit Ether NIC	<u>NEC Storage S2300</u> 695 x 36GB Disks 23 x FC Raid Controller Unit
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NEC Express5800/1320Xe (16 SMP)

TPC-H Rev. 2.10

Reported Date
June 7, 2005

Description	Part Number	Third Party Brand	Pricing	Unit Price	Qty	Extended Price	3-yr Mnt. Price
Server Hardware							
Express5800/1320Xe system (16way model)	850200715	NEC	1	654.998	1	654,998	156,565
Base Original 32(Express5800/1320Xe base system)					1	-	-
Itanium2 1.6GHz/9M cache					16	-	-
Cell Card Original					8	-	-
2GB Memory Option (4 x 512MB DIMMs)					32	-	-
Core PCI box					1	-	-
Base PCI box					3	-	-
PCI Cable					8	-	-
Expansion Cabinet					1	-	-
36GB Ultra 320/m SCSI HDD 10000RPM					1	-	-
10/100/1000Mb Either card (Intel Pro1000XT)					1	-	-
Ultra160 SCSI card (Adaptec 39160)					1	-	-
Windows Server 2003, Data Center Edition					16	-	-
NEC Express5800/120Rg-2(for System Management)							
120Rg-2 base rack svr, one XEON processor, 3.0 GHz/1MB	850174001	NEC	1	\$ 3,799	1	\$ 3,799	-
1GB (2 x 512MB) interleaved memory DDR333 SDRAM	062-02466-000	NEC	1	\$ 999	1	\$ 999	-
36.4GB SCSI HDD (1")	062-02012-000	NEC	1	\$ 399	1	\$ 399	-
CD-ROM, 2 x On-board LAN, KB/MS	Included	NEC	1		1	-	-
3 years of warranty service to 4-hour response, 7x24	DE-0000-1095-7244	NEC	1	1,599	1	-	1,599
VL501B 15in CRT Monitor Black	VL501B-1	CTX	3	79	2	158	-
FC HBA QLA2340 (+10% spares)	QLA2340-CK	QLogic	4	880	50	44,000	-
					Subtotal	704,353	158,164
Disk Subsystem							
NEC Storage S2300 Basic Unit	850171001	NEC	1	33,999	23	781,977	-
2 RAID_Cntrl, 1GB Cache, 1DE, w/o drives							
1GB(2 x 512MB) PC133 SDRAM memory	062-02301-000	NEC	1	1,999	3	5,997	-
S2300 DE (+10% spares)	062-02402-000	NEC	1	7,999	27	215,973	-
36GB 15K rpm FC HDD (+10% spares)	062-02431-000	NEC	1	579	765	442,935	-
3 yr Telephone Upgrade Hdw & Storage	IS-THSU-1095-0724	NEC	1	1,499	23	-	34,477
42U Rackframe	050-01790-000	NEC	1	1,799	5	8,995	-
FC Cable 10M LC-LC (+10% spares)	062-02304-000	NEC	1	200	50	10,000	-
					Subtotal	1,465,877	34,477
Server Software							
Microsoft SQL Server 2005 Enterprise Edition (64bit)	810-00652	Micrsorft	2	7,233	1	7,233	-
Microsoft SQL Server 2005 Client Licenses	359-00532	Microsoft	2	139	70	9,730	-
Microsoft Windows 2003 Standard Server	P73-00295	Microsoft	2	719	1	719	-
Visual Studio .NET 2003 Professional Special Edition	659-00390	Microsoft	2	799	1	799	-
Microsot Problem Resolution Service		Microsoft	2	245	1	-	245
					Subtotal	18,481	245
TOTAL						2,188,711	192,886
NEC brand total(Pricing 1-NEC)						2,126,072	192,641
NEC brand Large Purchase Cash Prepay Discount						-956,732	-86,688

Notes:

Pricing: 1-NEC 2-Microsoft 3-PROVANTAGE 4-Compuview Microsystems

3-Yr. Cost of Ownership: **\$1,338,176**
QphH@1TB: **13453.9**

\$ / QphH@1TB: **\$99.47**

Results and methodology audited by Francois Raab of InfoSizing, Inc. (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 reflects 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



NEC Express5800/1320Xe (16 SMP)

TPC-H Rev. 2.1.0

Reported Date
June 7, 2005

Numerical Quantities Summary

Measurement Results

Scale Factor	1000 GB
Total Data Storage / Database Size	23.17
Start of Database Load	5/26/2005 05:43:52
End of Database Load	5/26/2005 21:09:19
Database Load Time	15:25:27
Query Streams for Throughput Test	7
TPC-H Power	18565.5
TPC-H Throughput	9749.6
Composite Query per Hour Rating (QphH@1000GB)	13453.9
Total System Price Over 3 Years	\$1,338,176
TPC-H Price Performance Metric	\$99.47

Measurement Intervals

Measurement Interval in Throughput Test (Ts)	56864 seconds
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Duration of Stream Execution:

	Seed	Query Start Date/Time	RF1 Start Date/Time	RF2 Start Date/Time	Duration
		Query End Date/Time	RF1 End Date/Time	RF2 End Date/Time	
Stream 0	526210919	05/29/2005 02:13:35 05/29/2005 04:29:40	05/29/2005 02:06:32 05/29/2005 02:13:34	05/29/2005 04:29:41 05/29/2005 04:35:11	
Stream 1	526210920	05/29/2005 04:35:14 05/29/2005 16:00:13	05/29/2005 04:35:13 05/29/2005 17:46:52	05/29/2005 17:46:53 05/29/2005 17:55:27	13:20:14
Stream 2	526210921	05/29/2005 04:35:14 05/29/2005 15:51:33	05/29/2005 17:55:32 05/29/2005 18:06:37	05/29/2005 18:06:39 05/29/2005 18:18:35	13:43:21
Stream 3	526210922	05/29/2005 04:35:15 05/29/2005 16:25:22	05/29/2005 18:18:41 05/29/2005 18:30:56	05/29/2005 18:30:59 05/29/2005 18:42:48	14:07:34
Stream 4	526210923	05/29/2005 04:35:15 05/29/2005 16:27:19	05/29/2005 18:42:56 05/29/2005 18:55:09	05/29/2005 18:55:12 05/29/2005 19:07:30	14:32:14
Stream 5	526210924	05/29/2005 04:35:16 05/29/2005 16:46:16	05/29/2005 19:07:39 05/29/2005 19:20:06	05/29/2005 19:20:10 05/29/2005 19:32:44	14:57:28
Stream 6	526210925	05/29/2005 04:35:17 05/29/2005 16:24:26	05/29/2005 19:32:55 05/29/2005 19:46:11	05/29/2005 19:46:15 05/29/2005 19:55:54	15:20:37
Stream 7	526210926	05/29/2005 04:35:18 05/29/2005 17:38:33	05/29/2005 19:56:11 05/29/2005 20:08:55	05/29/2005 20:09:04 05/29/2005 20:22:58	15:47:40



NEC Express5800/1320Xe (16 SMP)

TPC-H Rev.2.10

Reported Date
June 7, 2005

TPC-H Timing Intervals (in seconds):

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 0	1013.7	42.4	60.5	77.9	179.8	52.1	217.3	178.0
Stream 1	3009.0	201.9	2209.8	1241.1	1583.1	329.2	1498.0	2923.7
Stream 2	4237.9	159.6	2411.0	709.1	3611.5	397.6	2341.8	909.5
Stream 3	4110.4	114.0	1702.1	1586.1	3797.2	134.2	2722.8	655.0
Stream 4	3674.2	157.9	1988.2	2958.0	1012.9	201.5	1140.6	1443.5
Stream 5	3379.2	135.3	2102.0	1142.0	4440.3	94.9	2958.0	970.8
Stream 6	6202.1	163.8	1980.4	597.2	1174.8	128.4	4045.5	1627.7
Stream 7	5443.9	284.7	55.7	513.3	182.6	51.4	220.3	2788.8
Min Qi	3009.0	114.0	55.7	513.3	182.6	51.4	220.3	655.0
Max Qi	6202.1	284.7	2411.0	2958.0	4440.3	397.6	4045.5	2923.7
Avg Qi	4293.8	173.9	1778.5	1249.5	2257.5	191.0	2132.4	1617.0
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 0	1081.0	102.4	105.9	194.8	394.1	113.0	40.5	393.7
Stream 1	2188.3	863.2	2833.6	989.9	2869.6	4251.2	210.6	2390.9
Stream 2	3943.0	2605.3	676.2	1572.9	3299.7	808.3	212.5	1003.8
Stream 3	3410.0	2396.8	730.4	2987.1	2707.7	243.5	382.5	1136.8
Stream 4	2979.4	601.0	1465.5	1639.9	1641.1	364.7	171.4	1561.3
Stream 5	1132.3	1810.5	2299.3	1262.7	1874.8	128.0	380.2	901.4
Stream 6	4327.3	3860.2	841.3	1388.4	2221.7	1299.3	191.3	807.4
Stream 7	19264.4	98.8	579.3	293.1	371.2	51.1	38.9	389.4
Min Qi	1132.3	98.8	579.3	293.1	371.2	51.1	38.9	389.4
Max Qi	19264.4	3860.2	2833.6	2987.1	3299.7	4251.2	382.5	2390.9
Avg Qi	5320.7	1748.0	1346.5	1447.7	2140.8	1020.9	226.8	1170.1
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 0	59.3	1849.5	116.9	85.8	1518.3	288.5	422.6	329.5
Stream 1	403.1	3301.1	866.0	2820.1	3525.9	590.4	47498.8	513.8
Stream 2	3402.2	2943.2	847.2	841.1	3037.1	607.8	665.6	715.8
Stream 3	889.4	3825.7	921.7	284.0	7080.1	789.9	735.0	709.4
Stream 4	2642.9	5532.8	1365.0	1758.8	7836.2	586.5	732.8	737.4
Stream 5	2732.0	4825.9	3367.8	2462.9	4815.6	643.8	746.8	753.9
Stream 6	2303.8	3518.4	1274.0	934.1	1671.5	1990.3	795.7	578.6
Stream 7	606.8	6793.6	155.0	692.5	7434.9	684.8	764.2	834.6
Min Qi	403.1	2943.2	155.0	284.0	1671.5	586.5	665.6	513.8
Max Qi	3402.2	6793.6	3367.8	2820.1	7836.2	1990.3	47498.8	834.6
Avg Qi	1854.3	4391.5	1256.7	1399.1	5057.3	841.9	7419.8	691.9