

Sun Fire™ V 880 Server with Sybase IQ 12.5 Single Application Server

TPC-H Rev.2.0

report date: may 9, 2005
Revision Date: July 25, 2005

Total System Cost

Composite Query per Hour Metric

Price/Performance

\$ 171,455.20

3247.4
QphH@ 1000GB

\$53
per QphH@ 1000GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

1000GB

Sybase IQ 12.5
Single Application
Server

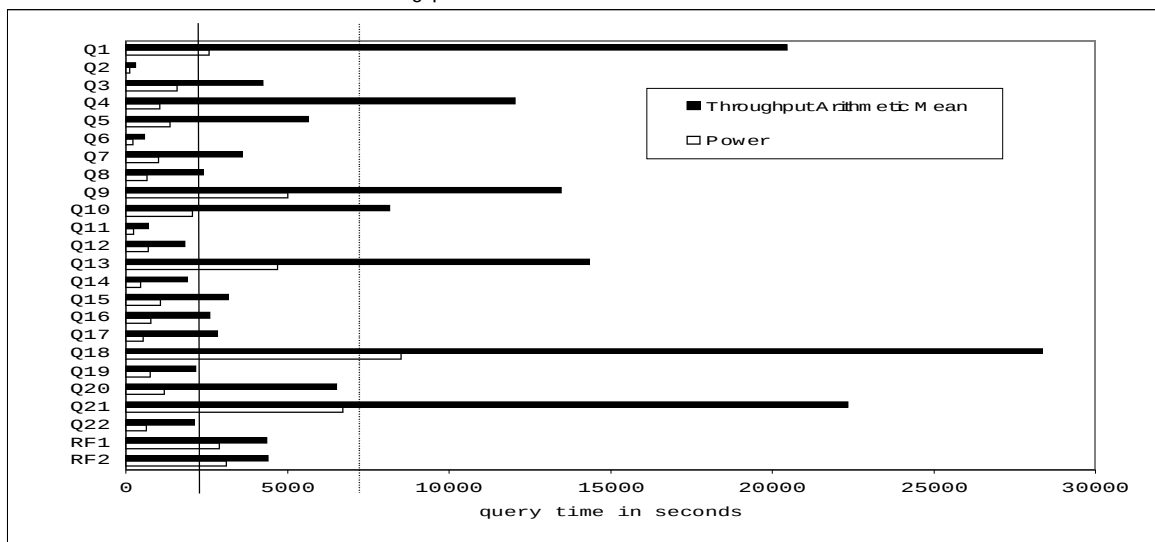
Solaris10

Solaris Volume
Manager

may 9, 2005

1163.9 = power geometric mean

7254.5 = throughput arithmetic mean



Database Load Time = 24 hrs 49 mins

Load Includes Backup: N

Total Storage/Database Size=2.04

RAID (Base tables): RAID 5

RAID (Base tables and auxiliary data structures): RAID 5

RAID (All): N

System Configuration:

SunFire V 880 Server with
8 UltraSPARC III Cu 1.2GHz processors
32GB memory
6 x 73GB internal disks
2 x SS3310 SCSI disk array with
12 x 73GB disks

Total Storage: 2039.6GB

(in this calculation 1GB is defined as 1024 * 1024 * 1024)



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3 Year Gold Warranty Upgrade - V880 Server (includes internal disks)	1	15,507.40	1	15,507.40
Eakins Open System Discount				-15,800.00
Server Hardware Subtotal			94,195.00	15,507.40

Storage

SS3310	XTA3310R01A0R876	1	14,995.00	2	29,990.00	
3 Year Gold Warranty Upgrade - ss3310 (includes all disks)	W 9D -SE3310-3G	1	3,703.00	2		7,406.00
SCSI cable	x1138A	1	95.00	4	380.00	
SCSI HBA			800.00	2	1,600.00	
Eakin's Open System Discount					-9,178.40	
Storage Subtotal					22,791.60	7,406.00

Server Software

Sybase IQ M Single App Svr percpu	11467	2	2,595.00	8	20,760.00	
Sybase IQ 3 Years Extended Support24 x 7 percpu	98477	2	1,557	8		12,456.00
Sybase Discount					-1,660.80	
ServerSoftware Subtotal					19,099.20	12,456.00

Total	136,085.80	35,369.40
3 Yr.Cost	171,455.20	
Q pH@ 100GB	3,247.40	
\$Q pH@ 100GB	\$53	

Service for all Sun products is from Sun Microsystems, Inc.

Service for Sybase products is from Sybase Inc.

Notes (Source):

1. Eakins Open System's Inc.
2. Sybase Inc.
3. Price quotes provided in Appendix G
4. The pricing of the Sybase D Single Application Server was found to be an "insignificant deviation" of Cause 02 by the General Council. This was corrected by increasing the visibility of Sybase D Single Application Server on the web.

Audited by: Brad A skins, InfoSizing, Inc. (www.sizing.com)

Prices used in TPC benchmarkarks reflect the actual prices a customer would pay for a one-time purchase of the standard components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchase are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmarkark specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.



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Numerical Quantities

Measurement Results:

Database Scale Factor	= 1000GB
Total Data Storage / Database Size	= 2.04
Start of database load time	= 2004-07-28 22:14:48
End of database load time	= 2004-07-29 23:03:26
Database Load Time	= 24 hrs 49 mins
Query Streams for Throughput Test	= 7
TPC-H Power	= 3,093.1
TPC-H Throughput	= 3409.3
TPC-H Composite Query-per-Hour Rating (QphH @ 1000GB)	= 3247.4
Total System Price Over 3 Years	= \$ 171,455.20
TPC-H Price/Performance Metric (\$/QphH @ 1000GB)	= \$53

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 162,616 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 00	729230326	Aug 2, 2004	10:37:57	Aug 2, 2004	23:55:29	13:17:32
Stream 01	729230327	Aug 2, 2004	23:55:31	Aug 4, 2004	20:27:28	44:31:57
Stream 02	729230328	Aug 2, 2004	23:55:31	Aug 4, 2004	21:05:47	45:10:16
Stream 03	729230329	Aug 2, 2004	23:55:31	Aug 4, 2004	20:17:18	44:21:47
Stream 04	729230330	Aug 2, 2004	23:55:31	Aug 4, 2004	19:53:32	43:58:01
Stream 05	729230331	Aug 2, 2004	23:55:31	Aug 4, 2004	19:35:23	43:39:52
Stream 06	729230332	Aug 2, 2004	23:55:31	Aug 4, 2004	19:35:42	43:40:11
Stream 07	729230333	Aug 2, 2004	23:55:31	Aug 4, 2004	20:53:39	44:58:08
Refresh		Aug 2, 2004	23:55:30	Aug 4, 2004	2:11:43	26:16:13



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TPC-H Timing Intervals (in seconds)

	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	Q 11	Q 12
Stream 00	2571.16	109.92	1574.18	1045.26	1378.06	209.47	1003.56	648.22	5015.99	2066.05	239.20	682.75
Stream 01	20269.43	238.48	3251.65	9034.93	4063.31	492.01	2762.06	1792.44	16199.54	5843.27	482.73	2250.61
Stream 02	20849.93	371.37	4437.10	10909.44	4870.30	1127.25	3975.00	2315.17	14542.63	5195.12	513.16	1959.34
Stream 03	23326.82	314.59	2481.27	12380.89	9103.69	359.13	2821.32	4971.04	13133.33	6204.62	438.21	1514.14
Stream 04	21743.07	252.16	5040.74	13876.17	10579.94	619.05	3868.14	1959.48	11028.23	8308.28	723.83	2450.34
Stream 05	21112.36	358.95	4032.56	12787.57	3672.91	600.14	4250.79	1604.31	11726.59	6766.38	957.67	2529.41
Stream 06	21310.09	240.26	6087.90	12061.49	4104.83	468.73	3976.93	1911.92	14852.72	16891.43	760.82	1340.00
Stream 07	14519.53	213.00	4395.74	13175.51	3175.56	261.42	3551.24	2060.97	12780.15	7811.37	997.93	725.99
Minimum	14519.53	213.00	2481.27	9034.93	3175.56	261.42	2762.06	1604.31	11028.23	5195.12	438.21	725.99
Average	20447.32	284.11	20447.32	12032.28	5652.93	561.10	3600.78	2373.62	13466.17	8145.78	696.34	1824.26
Maximum	23326.82	371.37	6087.90	13876.17	10579.94	1127.25	4250.79	4971.04	16199.54	16891.43	997.93	2529.41

	Q 13	Q 14	Q 15	Q 16	Q 17	Q 18	Q 19	Q 20	Q 21	Q 22	RF1	RF2
Stream 00	4687.22	442.17	1070.52	767.73	530.92	8513.95	748.98	1200.31	6720.66	616.91	2894.50	3109.83
Stream 01	11630.39	1641.11	5191.37	3021.57	960.89	32189.56	1818.78	5760.43	29739.63	1677.93	4838.27	4789.78
Stream 02	15589.03	4002.08	4998.98	4410.54	8906.08	26876.40	2523.17	9452.94	12481.56	2306.50	4600.81	4328.83
Stream 03	15872.31	1851.35	2434.72	2550.17	982.81	27172.48	2373.12	7064.05	19924.35	2430.74	4083.51	4856.38
Stream 04	14769.21	1154.51	3999.28	1775.62	3293.78	24529.27	2072.42	2161.73	22319.23	1752.48	4907.78	4191.57
Stream 05	13160.05	2426.26	2418.38	2658.77	1381.10	26737.83	2657.43	3709.46	29524.08	2116.63	3452.02	4380.25
Stream 06	13850.72	1699.95	1816.22	2328.60	1588.60	26297.85	1812.26	1620.52	20792.22	1394.97	4355.22	3808.25
Stream 07	15333.03	563.94	1252.17	1460.05	2779.04	34718.15	1693.48	15828.79	21532.87	3057.26	4202.45	4444.48
Minimum	11630.39	563.94	1252.17	1460.05	960.89	24529.27	1693.48	1620.52	12481.56	1394.97	3452.02	3808.25
Average	14314.96	1905.60	3158.73	2600.76	2841.76	28360.22	2135.81	6513.99	22330.56	2105.21	4348.58	4399.93
Maximum	15872.31	4002.08	5191.37	4410.54	8906.08	34718.15	2657.43	15828.79	29739.63	3057.26	4907.78	4856.38