

**Sun Fire™ V440 Server
with Sybase IQ 12.5 Single
Application Server**

TPC-H Rev. 2.1.0

Report Date: may 9, 2005
Revision Date: jun 29, 2005

Total System Cost

Composite Query per Hour Metric

Price/Performance

\$55,244.55

2501.0
QphH@300GB

\$22
per QphH@300GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

300GB

**Sybase IQ 12.5
Single Application
Server**

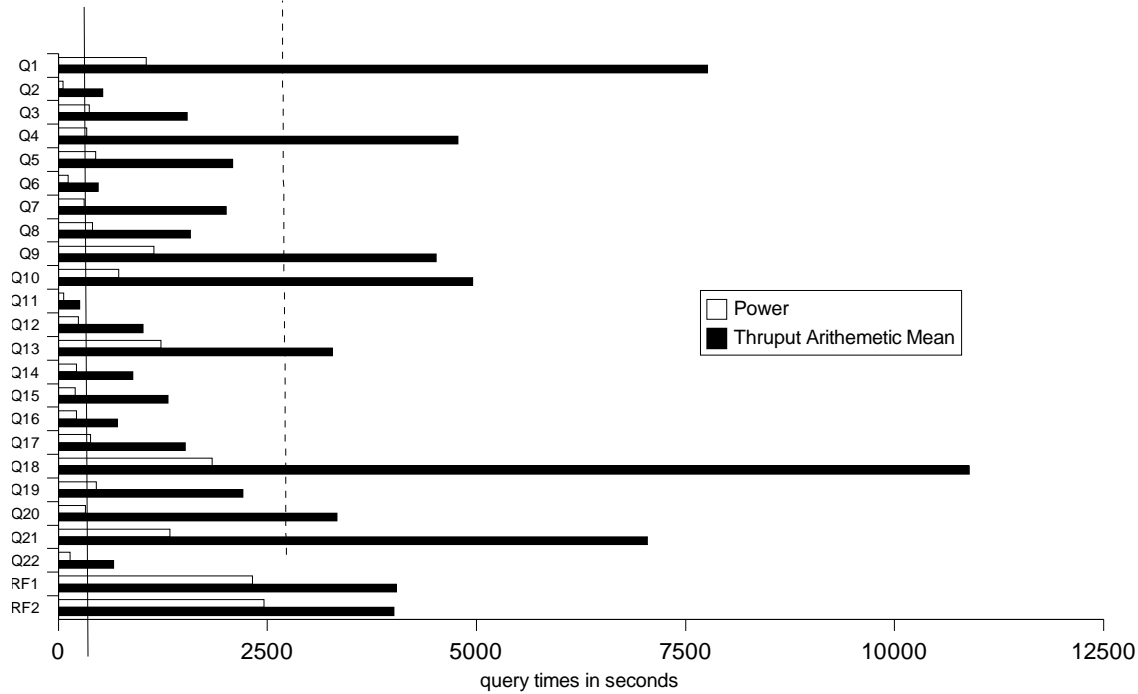
Solaris 10

**Solaris Volume
Manager**

may 9, 2005

417.3 = power geometric mean

2879.3 = throughput arithmetic mean



Database Load Time = 7 hrs 21 mins

Load Includes Backup: N

Total Storage/Database Size=1.81

RAID (Base tables): RAID 5

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

RAID (All): N

System Configuration:

SunFire V440 Server with
4 UltraSPARC IIIi 1600 MHz processors
32 GB memory
4 x 146GB (10K RPM) internal disks

Total Storage: 543.9 GB

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



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Description	Part Number	Source	Unit Price	Qty	Ext. Price	3 Yr. maint.
Server Hardware						
SunFire V440 4x1.6 GHz CPUs, 32G memory, 4x146G disk drives			1 40,995.00	1	40,995.00	
3 Year Gold Warranty Upgrade – V440 Server (includes all disks)			1 5,832.00	1		5,832.00
Sun Discount					-6,149.25	-2,041.20
<i>Server Hardware Subtotal</i>					34,845.75	3,790.80
Storage (external)						
None					0.00	
<i>Storage Subtotal</i>					0.00	.00
Server Software						
Sybase IQ-M Single App Svr – 4 dual-core cpu	11467		2 2,595.00	4	10,380.00	
Sybase IQ 3 Years Extended Support 24 x 7	98477		2 1,557	4		6,228.00
Sybase Discount					0.00	.00
<i>Server Software Subtotal</i>					10,380.00	6,228.00
			Total		45,225.75	10,018.80
			3 Yr. Cost		55,244.55	
			QpH@ 3000GB		2,501.00	
			\$/QpH@ 300GB		\$22	

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

Notes (Source):

1. Sun Microsystems Inc.
2. Sybase Inc.

PriceQuotes provided in Appendix G

Audited by: Brad Askins, 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 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 benchmark 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	= 300GB
Total Data Storage / Database Size	=1.81
Start of database load time	= 2005-01-24 19:07:45
End of database load time	= 2005-01-25 02:28:10
Database Load Time	= 7 hrs 21 mins
Query Streams for Throughput Test	= 7
TPC-H Power	= 2,588.1
TPC-H Throughput	= 2,416.8
TPC-H Composite Query-per-Hour Rating (QphH@300GB)	= 2501.0
Total System Price Over 3 Years	= 55,244.55
TPC-H Price/Performance Metric (\$/QphH@300GB)	= \$22

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 68,818 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 00	125022810	Jan 26, 2005	2:10:31	Jan 26, 2005	06: 44:38	04:34:07
Stream 01	125022811	Jan 26, 2005	06:44:39	Jan 27, 2005	01:14:05	18:29:25
Stream 02	125022812	Jan 26, 2005	06:44:39	Jan 27, 2005	00:12:13	17:27:34
Stream 03	125022813	Jan 26, 2005	06:44:39	Jan 26, 2005	22:14:38	15:29:59
Stream 04	125022814	Jan 26, 2005	06:44:39	Jan 27, 2005	01:41:01	18:56:22
Stream 05	125022815	Jan 26, 2005	06:44:39	Jan 27, 2005	00:52:12	18:7:33
Stream 06	125022816	Jan 26, 2005	06:44:39	Jan 27, 2005	00:01:33	17:16:54
Stream 07	125022817	Jan 26, 2005	06:44:39	Jan 27, 2005	00:07:33	17:22:54
Refresh		Jan 26, 2005	06:44:39	Jan 27, 2005	01:51:37	19:6:58



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TPC-H Timing Intervals (in seconds)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	1050.14	56.15	370.69	341.57	447.26	115.42	310.09	400.96	1145.64	720.97	62.16	241.54
Stream 01	8127.44	195.81	1596.99	4114.55	2587.16	840.22	1939.98	699.47	4784.07	7172.72	254.8	562.59
Stream 02	7993.12	1249.14	1139.13	4833.69	1200.96	518.34	2887.35	740.94	5484.94	3288.79	195.76	1560.42
Stream 03	6518.5	158.7	1291.92	3971.95	1778.04	399.92	1053.59	2803.61	4373.52	4628.28	190.93	1439.64
Stream 04	7855.64	128.49	1210.64	5166.96	3200.8	569.21	1287.25	1409.74	4694.59	3904.61	202.89	1436.33
Stream 05	8050	528.12	2767	5696.61	2113.34	462.24	3057.16	2211.64	3295.89	4848.27	353.84	733.85
Stream 06	7103.7	661.55	1641.25	4843.54	1282.06	345.54	948.64	1719.6	5639.5	7503.67	291.66	534.74
Stream 07	8696.9	789.47	1151.21	4837.81	2426.51	204.27	2894.86	1469.23	3331.27	3328.38	305.25	822.02
Minimum	6518.50	128.49	1139.13	3971.95	1200.96	204.27	948.64	699.47	3295.89	3288.79	190.93	534.74
Average	7763.61	530.18	7763.61	4780.73	2084.12	477.10	2009.83	1579.17	4514.83	4953.53	256.45	1012.80
Maximum	8696.90	1249.14	2767.00	5696.61	3200.80	840.22	3057.16	2803.61	5639.50	7503.67	353.84	1560.42

	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	1229.41	221.18	200.73	220.41	373.15	1856.43	449.97	331.08	1334.21	136.64	2314.2	2497.43
Stream 01	3593.29	458.06	886.14	750.45	964.38	12842.63	2674.08	2991.95	7919.19	605.25	4449.16	3871.28
Stream 02	3406.73	694.48	2447.5	637.2	2776.16	7952.58	2855.14	3988.19	6360.45	638.63	5011.31	4335.58
Stream 03	2855.9	851.35	729.41	517.21	812.97	8877.51	1306.85	3636.74	7017.13	582.01	3925.48	5177.31
Stream 04	3820.57	735.13	1172.61	665.74	3452.97	13883.43	2873.14	3029.71	7033.43	440.48	3458.29	3492.11
Stream 05	3263.28	496.07	1019.04	759.79	670.26	12572.08	1560.85	2215.09	7919.2	651.55	3682.9	4623.42
Stream 06	3188.83	1417.37	1162.44	899.49	738.53	9081.58	2242.68	3882.23	6316.08	765.01	4321.87	3947.69
Stream 07	2822.5	1559.43	1785.22	699.67	1232.7	11019.12	1918.32	3590.85	6737.48	947.94	3453.56	2651.15
Minimum	2822.50	458.06	729.41	517.21	670.26	7952.58	1306.85	2215.09	6316.08	440.48	3453.56	2651.15
Average	3278.73	887.41	1314.62	704.22	1521.14	10889.85	2204.44	3333.54	7043.28	661.55	4043.22	4014.08
Maximum	3820.57	1559.43	2447.50	899.49	3452.97	13883.43	2873.14	3988.19	7919.20	947.94	5011.31	5177.31