



Sun Fire™ X4200 M2 Server with Sybase IQ 12.6 Single Application Server

TPC-H Rev. 2.6.0

Report Date: May 25, 2007

Total System Cost

Composite Query per Hour Metric

Price/Performance

\$45,466.95

8587.1
QphH@100GB

\$5.29
per QphH@100GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

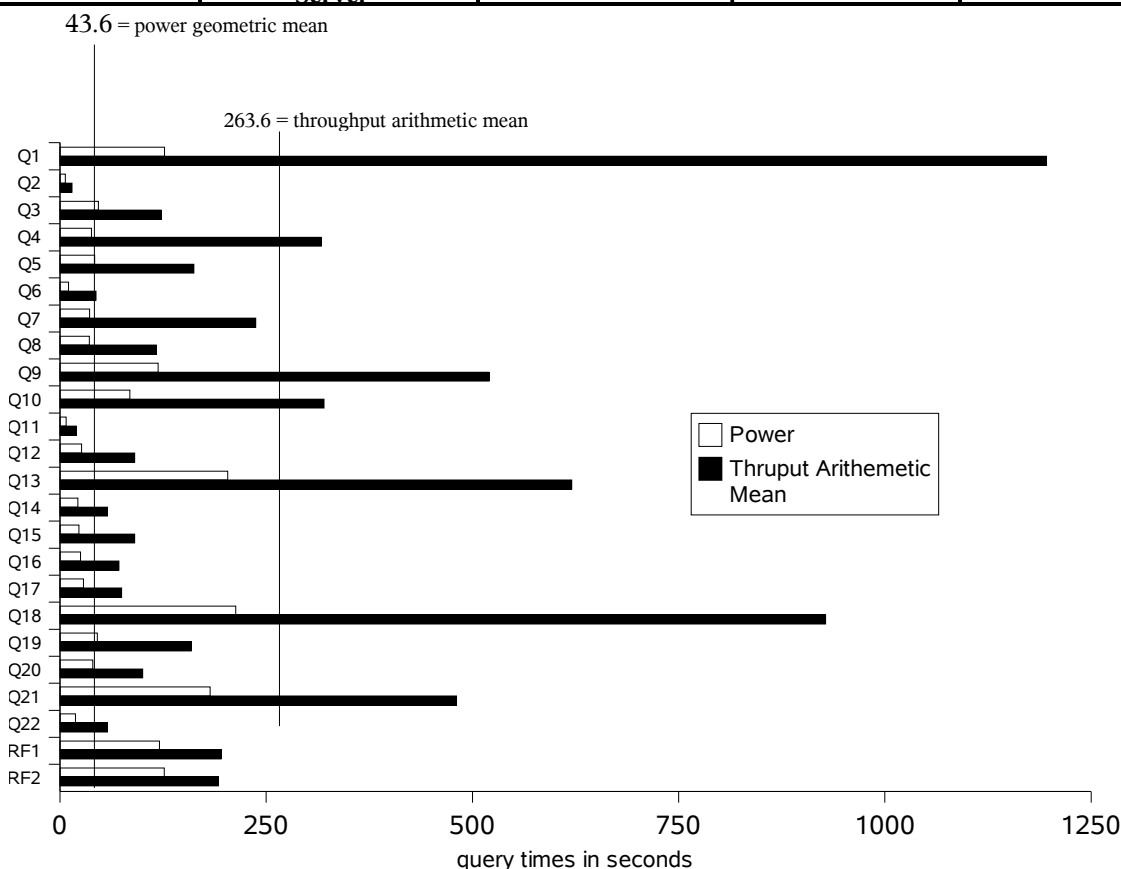
100GB

**Sybase IQ 12.6
Single Application
Server**

Solaris 10

**Solaris Volume
Manager**

May 25, 2007



Database Load Time = 00:51:31

Load Includes Backup: N

Total Storage/Database Size=9.52

RAID (Base tables): RAID 1

RAID (Base tables and auxiliary data structures): RAID 1

RAID (All): N

System Configuration:

SunFire X4200 M2 Server with

2 AMD Opteron 3.0GHz processors (each processor contains 2 cores with 1 thread per core)

16 GB memory

2 x 73 GB (10K RPM) internal SAS disks

2 x STK3320 SCSI JBOD (6 x 73GB 15krpm disk on each array)

Total Storage: 951 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 X4200 x64 Server: XATO base chassis	A87-BV	1	1,850.00	1	1,850.00	
73GB 10K RPM 2.5" SAS hard disk drive	RA-SS2CD-73G10KZ	1	365.00	2	730.00	
AMD Opteron 2222SE (3.0 Ghz/1MB dual-core) processor	4081A-Z	1	1,395.00	2	2,790.00	
4GB Memory kit DDR2-667	4226A-Z	1	940.00	4	3,760.00	
Powersupply unit	8052A-Z	1	295.00	1	295.00	
X4100 Server upgrade to 3 year Gold Warranty Upgrade	W9D-A87-3G	1	2,916.00	1		2,916.00
Sun Discount		1			-659.75	-1,020.60
<i>Server Hardware Subtotal</i>					8,765.25	1,895.40
External Storage						
Sun StorEdge 3320 JBOD Chassis, no drives	TA3320R00N00DISK	1	2,297.00	2	4,594.00	
Sun StorEdge 3000 AC Power Kit	TA-3000-2UAC-KIT	1	900.00	2	1,800.00	
73GB 15k rpm, U320 SCSI LVD disk	TB-SC1NC-73G15K	1	945.00	12	11,340.00	
PCI-E x4 dual channel Ultra320 SCSI HBA	SG-PCIE2SCSIU320Z	1	510.00	2	1,020.00	
SCSI cable, VHDCI/VHDCI, 68pin, 2m	X1138A-Z	1	95.00	4	380.00	
Sun StorEdge 3320 JBOD array upgrade to 3 year Gold support	W9D-SE3320-3G	1	4,212.00	2		8,424.00
Sun Discount		1			-6,411.30	-2,948.40
<i>Storage Subtotal</i>					12,722.70	5,475.60
Server Software						
Sybase IQ-M Single App Svr, per cpu core	12841	2	2,595.00	4	10,380.00	
Sybase IQ 3 Years Extended Support 24 x 7	98480	2	1,557.00	4		6,228.00
Sybase Discount		2			0.00	
<i>Server Software Subtotal</i>					10,380.00	6,228.00
Total					31,867.95	13,599.00
3 Yr. Cost					45,466.95	
QphH@ 100GB					8,587.10	
\$/QphH@ 100GB					\$5.29	

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	= 100GB
Total Data Storage / Database Size	= 9.52
Start of database load time	= 2007-03-25 11:52:27
End of database load time	= 2007-03-25 12:44:05
Database Load Time	= 00:51:31
Query Streams for Throughput Test	= 7
TPC-H Power	= 8262.2
TPC-H Throughput	= 8924.7
TPC-H Composite Query-per-Hour Rating (QphH@100GB)	= 8587.1
Total System Price Over 3 Years	= \$45,466.95
TPC-H Price/Performance Metric (\$/QphH@100GB)	= \$5.29

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 6,212 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 0	325124405	2007-03-25	12:44:19	2007-03-25	13:11:26	27mins:7secs
Stream 1	325124406	2007-03-25	13.11.27	2007-03-25	14:53:57	1hr:42mins:30secs
Stream 2	325124407	2007-03-25	13.11.27	2007-03-25	14:53:14	1hr:41mins:47secs
Stream 3	325124408	2007-03-25	13.11.27	2007-03-25	14:52:13	1hr:40mins:46secs
Stream 4	325124409	2007-03-25	13.11.27	2007-03-25	14:54:59	1hr:43mins:32secs
Stream 5	325124410	2007-03-25	13.11.27	2007-03-25	14:34:08	1hr:22mins:41secs
Stream 6	325124411	2007-03-25	13.11.27	2007-03-25	14:53:04	1hr:41mins:37secs
Stream 7	325124412	2007-03-25	13.11.27	2007-03-25	14:35:30	1hr:24mins:3secs
Refresh		2006-05-31	13.11.27	2006-05-31	14:00:41	49mins:14secs



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TPC-H Timing Intervals (in seconds)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	126.8	6.4	46.5	38.1	42.1	10.2	36.0	35.7	119.0	84.8	7.4	26.2
Stream 01	1061.9	8.0	265.8	43.3	120.7	41.8	257.5	70.7	451.8	292.5	25.0	77.0
Stream 02	1235.1	29.4	97.5	202.1	152.7	56.9	242.3	178.0	777.1	403.2	15.6	70.0
Stream 03	1641.5	6.8	79.6	565.6	212.1	57.0	367.3	192.5	529.7	241.0	18.6	83.6
Stream 04	1280.4	7.1	46.1	438.9	346.3	37.9	45.4	67.7	651.5	283.6	16.6	188.2
Stream 05	733.4	14.8	89.9	457.2	106.6	32.0	243.5	76.8	288.1	240.4	26.1	55.5
Stream 06	1341.2	6.9	187.1	158.0	95.3	65.6	356.8	114.4	640.8	591.3	19.4	114.7
Stream 07	1076.5	29.4	91.7	351.5	102.2	14.1	147.5	116.3	302.8	188.2	15.8	45.1
Minimum	733.4	6.8	46.1	43.3	95.3	14.1	45.4	67.7	288.1	188.2	15.6	45.1
Average	1195.7	14.6	122.5	316.6	162.3	43.6	237.2	116.6	520.3	320.0	19.6	90.6
Maximum	1641.5	29.4	265.8	565.6	346.3	65.6	367.3	192.5	777.1	591.3	26.1	188.2

	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	203.3	21.6	22.9	24.8	28.4	212.9	45.1	39.9	181.9	18.8	120.5	126.3
Stream 01	725.9	52.3	90.2	76.5	40.0	1314.1	113.9	208.5	752.1	59.2	219.6	189.4
Stream 02	756.3	93.2	101.8	104.4	131.2	784.0	308.5	61.9	217.7	80.6	219.6	176.3
Stream 03	449.2	76.6	67.0	71.1	89.2	864.5	68.4	65.3	198.0	99.3	177.2	190.7
Stream 04	462.0	83.1	110.0	75.5	128.4	844.9	268.2	37.5	764.2	25.3	204.5	225.9
Stream 05	636.2	29.8	107.8	81.8	37.9	682.9	182.2	65.7	740.7	30.0	175.0	200.5
Stream 06	863.9	46.7	129.9	50.8	34.9	798.5	98.2	61.1	256.1	63.4	191.0	181.1
Stream 07	449.5	20.7	26.1	40.5	60.0	1207.9	73.2	200.9	436.3	45.8	180.5	179.7
Minimum	449.2	20.7	26.1	40.5	34.9	682.9	68.4	37.5	198.0	25.3	175.0	176.3
Average	620.4	57.5	90.4	71.5	74.5	928.1	158.9	100.1	480.7	57.7	195.4	191.9
Maximum	863.9	93.2	129.9	104.4	131.2	1314.1	308.5	208.5	764.2	99.3	219.6	225.9