



**Sun Fire™ V240 Server
with Sybase IQ 12.5**

TPC-H Rev. 2.0

June 23, 2003

Total System Cost

Composite Query per Hour Metric

Price/Performance

\$45,021

1124.4
QphH@100GB

\$40
\$/QphH@100GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

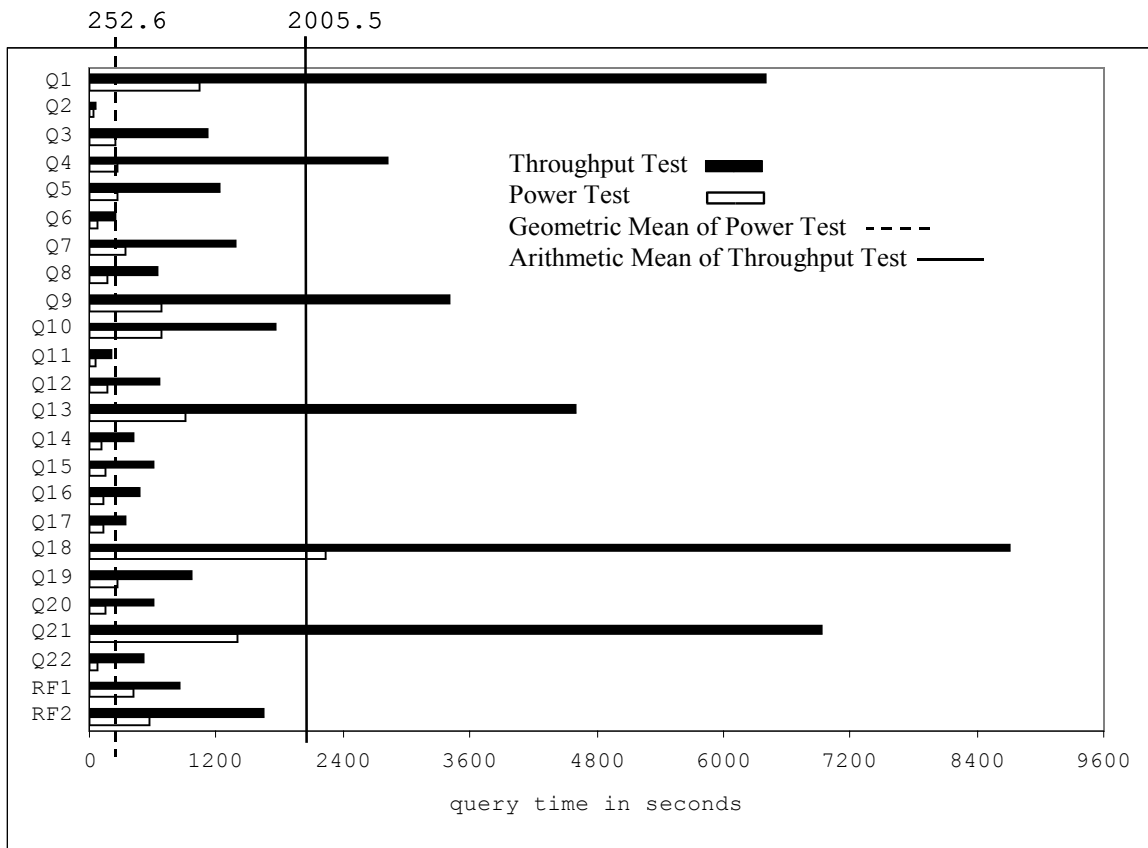
100GB

Sybase IQ 12.5

Solaris 9

Solaris Volume
Manager

June 23, 2003



Database Load Time = 6:16

Load Includes Backup: N

Total Data Storage/Database Size=4.07

RAID (Base tables): Y

RAID (Base tables and auxiliary data structures): Y

RAID (All): N

System Configuration: Sun Fire™ V240 Server
 Processors: 2 UltraSPARC™ IIIi Cu 1 GHz processors
 Memory: 8 GB memory
 Disks: 2 internal disks (36.4 GB), 1 SE3310 (10x36.4GB plus 2 spares)
 Total Storage: 406.8 GB (in this calculation one GB is defined as 1024*1024*1024 bytes)



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Description	Part Number	Source	Unit Price	Qty	Ext. Price	3 Yr. maint.
Server Hardware						
Sun Fire V240 2*1GHz, 2*36.4GB disk	N32-XUB2-9S-204AV2		1 5,781	1	5,781	5,012
2GB Memory Expansion Kit (2X1GB DDR PC2100 ECC) Sunfire V240	X7404A		1 1,243	4	4,972	
2M-SCSI-Cable	X1138A		2 82	2	164	
Dual-Ultra-3-SCSI-HBA	X6758A		2 571	1	571	
<i>Server Hardware Subtotal</i>					11,488	5,012
Storage						
SE3310-436GB-12x36-JBOD 10k rpm	XTA3310R01A0R436		2 8,565	1	8,565	
<i>Storage Subtotal</i>					8,565	
Server Software						
Solaris 9 CD SPARC Edition Slim kit	SOLZS-090C9AYS		1 36	1	36	
Sybase IQ-M Single App Svr - 2 cpu's	12841		3 15,000	1	15,000	
Sybase IQ 3 Years Extended Support 24 x 7	98480		3	1		7,920
Sybase discount (licence and support)			3		-3,000	
<i>Server Software Subtotal</i>					12,036	7,920
Total					32,089	12,932
Service for all Sun products is from Sun Microsystems, Inc.					3 Yr. Cost	45,021
Service for Sybase products is from Sybase Inc.					QphH@ 100GB	1,124.40
					\$/QphH@ 100GB	\$40

Notes (Source):

1. Integrity Networking Systems, Inc.
2. Continental Resources, Inc.
3. Sybase Inc.

Price Quotes 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	= 4.07
Start of database load time	= 2003-05-31 11:04:32
End of database load time	= 2003-05-31 17:19:59
Database Load Time	= 6:16
Query Streams for Throughput Test	= 5
TPC-H Power	= 1425.1
TPC-H Throughput	= 887.2
TPC-H Composite Query-per-Hour Rating (QphH@100GB)	= 1124.4
Total System Price Over 3 Years	= \$45,021
TPC-H Price/Performance Metric (\$/QphH@100GB)	= \$40

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 44,637 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 00	531171959	Jun 1, 2003	08:38:25	Jun 1, 2003	11:34:27	02:56:02
Stream 01	531171960	Jun 1, 2003	11:34:28	Jun 1, 2003	23:28:00	11:53:32
Stream 02	531171961	Jun 1, 2003	11:34:32	Jun 1, 2003	23:58:25	12:23:53
Stream 03	531171962	Jun 1, 2003	11:34:36	Jun 1, 2003	23:52:55	12:18:19
Stream 04	531171963	Jun 1, 2003	11:34:41	Jun 1, 2003	23:57:23	12:22:42
Stream 05	531171964	Jun 1, 2003	11:34:45	Jun 1, 2003	23:53:35	12:18:50
Refresh		Jun 1, 2003	11:34:49	Jun 1, 2003	23:47:39	12:12:50



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TPC-H Timing Intervals (in seconds)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	1040.2	30.1	236.9	259	272	67.5	338.8	169.7	680.5	685.9	47.8	161.6
Stream 01	7347	50.7	917.4	2499	885	270.5	1302.8	376.8	2636.1	1559.2	183.3	399.5
Stream 02	6276.7	67.2	1546	2876.9	1221.7	314.5	1177.6	688.2	4444.4	1839.5	326.1	605.6
Stream 03	6303.5	52.4	917.9	3012.5	1178.3	330.5	1794	1169.8	3086.6	1534.1	139.7	818.9
Stream 04	5972.2	63.8	899.7	2638.5	1920	121.9	1322.4	411.1	3573.4	1979.7	126.7	540.5
Stream 05	6138.6	53.9	1335.9	3058.7	961.8	151.1	1360.1	612	3332	1847.1	228.8	936.9
Minimum	5972.2	50.7	899.7	2499	885	121.9	1177.6	376.8	2636.1	1534.1	126.7	399.5
Average	6407.6	57.6	1123.4	2817.1	1233.4	237.7	1391.4	651.6	3414.5	1751.9	200.9	660.3
Maximum	7347	67.2	1546	3058.7	1920	330.5	1794	1169.8	4444.4	1979.7	326.1	936.9

	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	908.2	104.5	154.7	126	131.8	2240.5	257.3	160.6	1407.1	82.8	415.8	571.4
Stream 01	4214.9	325.3	492.4	331	204.1	8962.7	1313	546.4	7650.3	339.5	1115.5	1985.7
Stream 02	4061.4	457.2	499.4	660.3	588.5	9334.8	981.9	748.6	5303.7	603.9	760.5	1560.8
Stream 03	4983	502	591.3	545.2	306.8	8128.2	879.4	1041.8	6497.9	480	685	1646.3
Stream 04	5284.9	347.2	1033.2	338.2	236.3	8907	974.4	200.3	7013.2	650.7	778.2	1614.8
Stream 05	4438.6	443.7	459.8	483.4	346	8223.3	709.8	520.1	8175.6	506.4	923.5	1396.7
Minimum	4061.4	325.3	459.8	331	204.1	8128.2	709.8	200.3	5303.7	339.5	685	1396.7
Average	4596.6	415.1	615.2	471.6	336.3	8711.2	971.7	611.4	6928.1	516.1	852.5	1640.9
Maximum	5284.9	502	1033.2	660.3	588.5	9334.8	1313	1041.8	8175.6	650.7	1115.5	1985.7