



**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

\$50,297

1026.5
QphH@300GB

\$49
\$/QphH@300GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

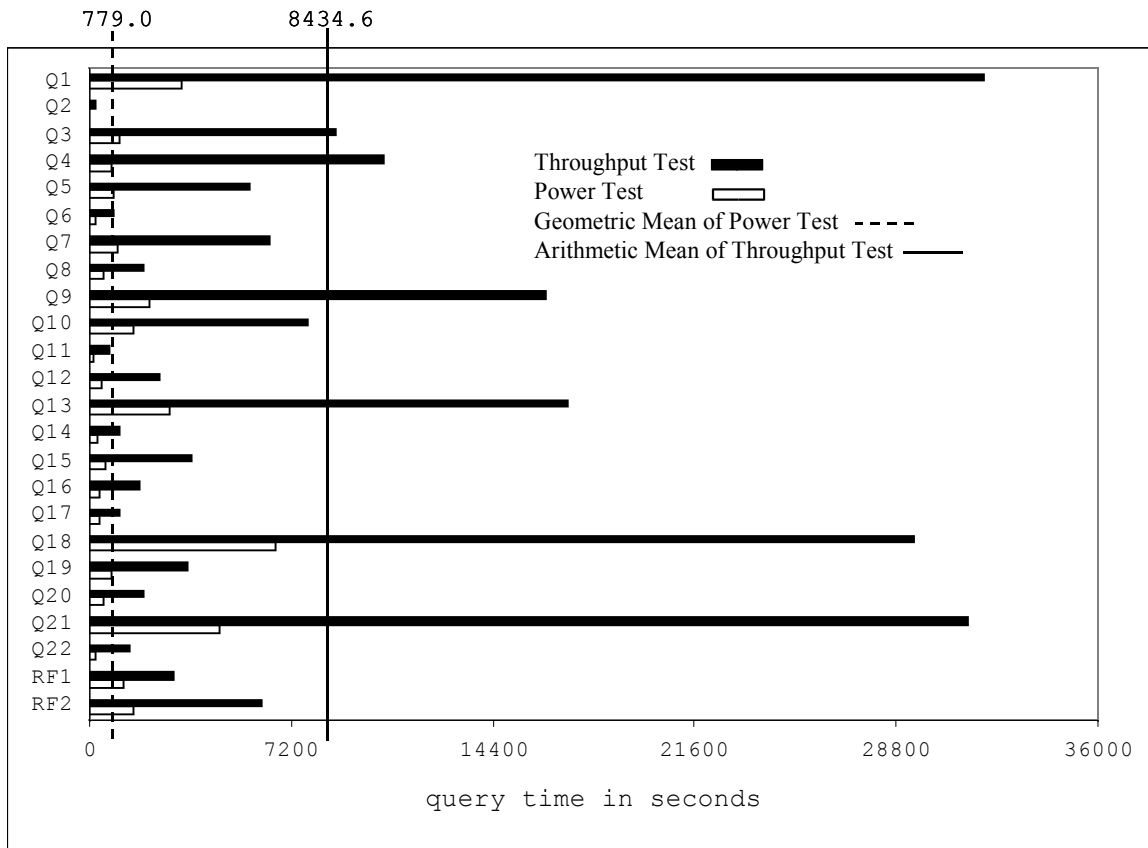
300GB

Sybase IQ 12.5

Solaris 9

Solaris Volume
Manager

June 23, 2003



Database Load Time = 18:49

Load Includes Backup: N

Total Data Storage/Database Size=3.19

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: 4 internal disks (36.4 GB), 1 SE3310 (12x73.4GB)
 Total Storage: 955.9 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	
Internal 36.4GB 10Krpm Ultra 3 SCSI drive Sun Fire V240 LVD disk	X5267A		1 428	2	856	
<i>Server Hardware Subtotal</i>					12,344	5,012
Storage						
SE3310-876GB-12x73-JBOD10k rpm	XTA3310R01A0R876		2 10,707	1	10,707	
73GB-SCSI-10Krpm-disk (spares)	XTA-3310-73GB-10K		2 1,139	2	2,278	
<i>Storage Subtotal</i>					12,985	
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					37,365	12,932
Service for all Sun products is from Sun Microsystems, Inc.					3 Yr. Cost	50,297
Service for Sybase products is from Sybase Inc.					QphH@ 300GB	1,026.50
					\$/QphH@ 300GB	\$49

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	= 300GB
Total Data Storage / Database Size	= 3.19
Start of database load time	= 2003-06-16 20:43:35
End of database load time	= 2003-06-17 15:31:55
Database Load Time	= 18:49
Query Streams for Throughput Test	= 6
TPC-H Power	= 1394.6
TPC-H Throughput	= 755.5
TPC-H Composite Query-per-Hour Rating (QphH@300GB)	= 1026.5
Total System Price Over 3 Years	= \$50,297
TPC-H Price/Performance Metric (\$/QphH@300GB)	= \$49

Measurement Intervals:

Measurement Interval in Throughput Test (Ts)	= 188,692 seconds
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Duration of Stream Execution:

Stream ID	Seed	Start Date	Start Time	End Date	End Time	Duration
Stream 00	617153155	Jun 17, 2003	15:39:16	Jun 18, 2003	00:35:31	08:56:15
Stream 01	617153156	Jun 18, 2003	00:35:52	Jun 20, 2003	02:58:12	50:22:20
Stream 02	617153157	Jun 18, 2003	00:35:56	Jun 20, 2003	04:36:38	52:00:42
Stream 03	617153158	Jun 18, 2003	00:36:01	Jun 20, 2003	04:18:00	51:41:59
Stream 04	617153159	Jun 18, 2003	00:36:04	Jun 20, 2003	04:58:39	52:22:35
Stream 05	617153160	Jun 18, 2003	00:36:08	Jun 20, 2003	03:41:48	51:05:40
Stream 06	617153161	Jun 18, 2003	00:36:13	Jun 20, 2003	05:00:44	52:24:31
Refresh		Jun 18, 2003	00:36:13	Jun 20, 2003	02:53:57	50:17:44



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TPC-H Timing Intervals (in seconds)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	3273.1	94.9	1070.5	786.6	852.1	209.7	981.6	487.7	2168.7	1592.1	154.4	457.7
Stream 01	33799.6	317.9	12403.9	16363.6	3554.0	855.5	5261.6	2126.4	8338.4	6326.9	546.0	2058.1
Stream 02	29421.1	183.8	5452.1	6513.7	8586.1	869.3	3860.0	1656.2	24741.2	9022.0	746.2	2505.1
Stream 03	46383.5	155.9	14819.9	11174.3	5036.8	730.2	9263.7	3535.4	11603.8	5512.7	535.0	2213.0
Stream 04	29594.8	348.7	4994.7	8215.9	7074.7	541.3	9520.4	1367.5	12644.4	8114.4	1038.2	2539.7
Stream 05	25861.7	159.6	7167.0	12294.5	4887.2	1299.7	5313.0	1379.8	21050.2	7983.0	647.3	2232.1
Stream 06	26591.2	193.6	7663.7	8334.5	5053.1	704.0	5399.0	1307.1	19418.8	9649.2	689.3	3401.6
Minimum	25861.7	155.9	4994.7	6513.7	3554	541.3	3860	1307.1	8338.4	5512.7	535	2058.1
Average	31942	226.6	8750.2	10482.8	5698.7	833.4	6436.3	1895.4	16299.5	7768	700.3	2491.6
Maximum	46383.5	348.7	14819.9	16363.6	8586.1	1299.7	9520.4	3535.4	24741.2	9649.2	1038.2	3401.6

	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	2833.5	306.5	577.7	371.2	383.5	6656.2	752.6	527.9	4639.3	240.3	1203.8	1565.6
Stream 01	12911.3	957.4	2539.1	1526.3	916.9	32065.1	2762.7	2182.2	31845.8	1671.4	3324.7	6289.3
Stream 02	15181.9	1794.7	3467.0	2402.2	1910.5	27079.9	3745.4	3271.5	33050.4	1774.4	6485.0	7839.2
Stream 03	18516.0	789.2	2200.3	1691.5	833.2	27680.2	4204.6	1313.8	16701.7	1214.8	2192.9	5569.3
Stream 04	19198.8	1116.7	6255.8	1625.9	1287.1	30787.8	3855.3	563.6	36784.3	1071.8	2052.3	4663.8
Stream 05	12789.3	941.2	2741.4	1925.2	696.4	27983.5	2723.4	2340.4	40074.7	1440.2	1827.1	4705.8
Stream 06	24013.0	1021.2	4585.6	1680.5	827.8	31114.2	3887.7	1931.7	29701.3	1496.1	2322.1	7788.9
Minimum	12789.3	789.2	2200.3	1526.3	696.4	27079.9	2723.4	563.6	16701.7	1071.8	1827.1	4663.8
Average	17101.7	1103.4	3631.5	1808.6	1078.7	29451.8	3529.9	1933.9	31359.7	1444.8	3034	6142.7
Maximum	24013	1794.7	6255.8	2402.2	1910.5	32065.1	4204.6	3271.5	40074.7	1774.4	6485	7839.2