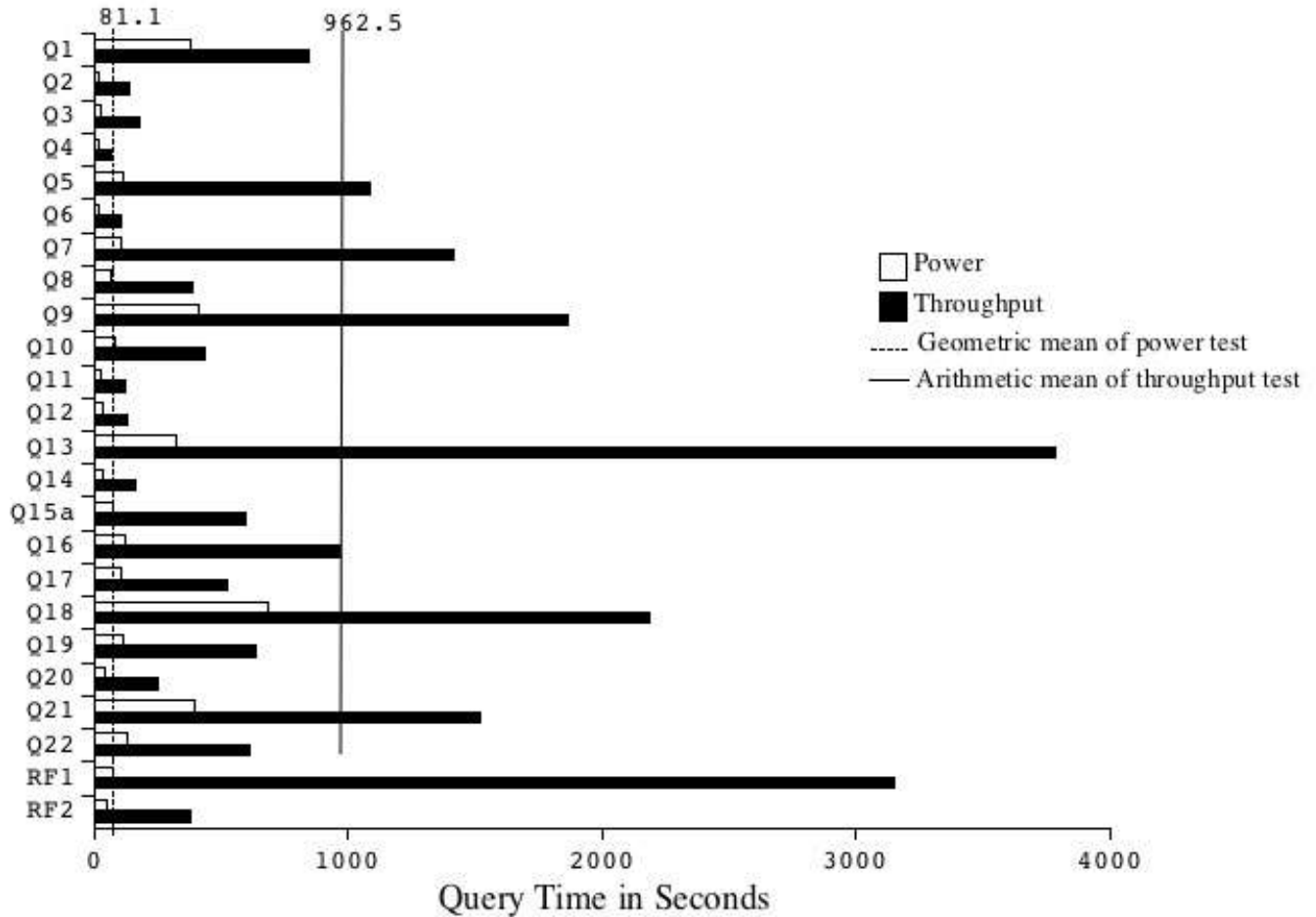




**SGI Altix 350
with
DB2 UDB V8.2**

TPC-H Revision 2.1.0
Report Date: 2005/03/25

Total System Cost		Composite Query-per-hour Metric		Price/Performance	
\$586,017		9962.5 QphH@300GB		\$59/QphH@300GB	
Database Size	Database Manager	Operating System		Other Software	Availability Date
300GB	DB2 UDB V8.2 + FixPak 1	SUSE Linux Enterprise Server 9 + SP1		None	2005/03/25



Database Load Time: 2:45:14	Load Included Backup: Y	Total Data Storage / Database Size: 17.03
RAID (Base Table): N	RAID (Base Table and Auxiliary Data Structures): N	RAID (ALL): N

System Configuration: SGI Altix 350
Processors: 8 x 1.6GHz, 6MB-L3 Intel Itanium 2 Processors
Memory: 64GB
Disk Controllers: 8 x Dual-port 2Gbit Fibre Channel HBAs
Disks: 70 x 73GB FC disks



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Description	Part #	Src	Unit Price	Qty	Extended Price	3-Yr. Maint. Price
Server Hardware						
SGI Altix 350 System	LS-SYS-A350	1	\$0	1	\$0	\$7,620
SGI Altix 350 short rack	S-RACK-A350	1	\$3,500	1	\$3,500	
SGI Altix 350 1.6GHz, 6MB-L3 processor	LS-CPU-A350-96	1	\$6,000	8	\$48,000	\$6,968
SGI Altix 350 8GB DIMM set (4x2GB)	LS-MEM-A350-8G	1	\$12,900	8	\$103,200	
73GB, 10K SCSI disk	LS-SCSIDRV-73GB	1	\$1,400	2	\$2,800	
SGI Altix 350 Base System	LS-BASE-A350	1	\$5,000	1	\$5,000	
IO9 PCI card s/SCSI	LS-BASEIO-SCSI	1	\$1,000	1	\$1,000	
SGI Altix 350 CPU, memory & PCI expansion module	LS-EXP-CMPX-C	1	\$4,500	3	\$13,500	
PDU220V	RAKPWR220V	1	\$0	1	\$0	
Rackmount shelves. Factory installed.	RM-KIT-SHELVES-I	1	\$300	4	\$1,200	
500W power supply	RPS-A350	1	\$500	4	\$2,000	
10 metre 50 micron optical cable w/LC connectors	X-F22-OPT-10M	1	\$223	16	\$3,568	
SUSE Linux Ent. Server 9 Maint. 3Yr/1-8cpu	SR5-SLES9-SVR16P-3Y	1	\$3,064	1	\$3,064	
SUSE Linux Ent. Server 9 for IPF Media kit	SC5-SLES9-ENG-GER	1	\$33	1	\$33	
Dual channel optical Fibre Channel HBA	PCIX-FC-2POPT-B	1	\$4,600	8	\$36,800	
CD-ROM Media Update requirement	MO5-CD	1	\$0	1	\$0	\$972
Server Hardware Subtotals:					\$223,665	\$15,560
Server Storage						
SGI TP9300	TP9300-BASE-2C	1	\$18,750	8	\$150,000	\$50,576
2Gbit, 73GB, 15K rpm LP disk drive	TP9500-73GB-E	1	\$1,175	68	\$79,900	
38-U rack enclosure fr TP9500/TP9300	TP9500-RACK	1	\$8,990	1	\$8,990	
U.S. Power desination kit	TP9500-DK-US	1	\$250	1	\$250	
TP9300 destination kit for USA/Canada/Japan	DK-TP-001	1	\$0	1	\$0	
TPSSM host S/W license req'd for TP9300	SC5-TPSSM-9.10	1	\$3,750	8	\$30,000	
Server Storage Subtotals					\$269,140	\$50,576
Server Hardware + Server Storage Subtotals:					\$498,052	\$66,136
Software Licenses						
DB2 UDB Enterprise Server Edition (ESE) V8.2 License/1-yr. Maint.		2	\$22,260	8	\$178,080	
DB2 UDB Enterprise Server Edition (ESE) V8.2 Support - 1-yr./proc.		2	\$1,060	16		\$16,960
DB2 UDB Data Partitioning Feature (DPF) Lic./1-yr. Maint.		2	\$6,686	8	\$53,488	
DB2 UDB Data Partitioning Feature (DPF) Support 1 yr/proc		2	\$318	16		\$5,088
Software Licenses Subtotals:					\$231,568	\$22,048
Totals:					\$724,373	\$88,184
SGI Large System Discount:						-\$226,540
Total Three-Year Cost of Ownership:						\$586,017
QphH@300GB						9,962.5
US\$/QphH@300GB						\$59

Sources: 1 = SGI – Scott Ellman <scotte@sgi.com> 1-650-933-4577; 2 = IBM– Bernard Spang <spang@us.ibm.com> 1-914-766-1491

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing section 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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Measurement Results:

Database Scale Factor	300
Total Data Storage/Database Size	17.03
Start of Database Load	03:45:35
End of Database Load	06:30:49
Database Load Time	02:45:14
Query Streams for Throughput Test	6
TPC-H Power	13,311.4
TPC-H Throughput	7,456.1
TPC-H Composite Query-per-Hour (QphH@300GB)	9,962.5
Total System Price over 3 Years	\$586,017
TPC-H Price/Performance Metric (\$/QphH@300GB)	\$59

Measurement Interval:

Measurement Interval in Throughput Test (Ts) = 19120 seconds

Duration of Stream Execution:

	Seed	Query Start Date/Time	RF1 Start Date/Time	RF2 Start Date/Time	Duration
		Query End Date/Time	RF1 End Date/Time	RF2 End Date/Time	
Stream-00		02/22/05 11:40:23	02/22/05 11:39:12	02/22/05 12:35:19	
	222063049	02/22/05 12:35:19	02/22/05 11:40:23	02/22/05 12:36:07	00:56:55
Stream-01		02/22/05 12:39:22	02/22/05 12:39:27	02/22/05 17:49:45	
	22063050	02/22/05 17:44:00	02/22/05 17:49:45	02/22/05 17:50:22	05:04:38
Stream-02		02/22/05 12:39:22	02/22/05 17:50:22	02/22/05 17:51:25	
	22063051	02/22/05 17:34:27	02/22/05 17:51:25	02/22/05 17:52:04	04:55:05
Stream-03		02/22/05 12:39:22	02/22/05 17:52:04	02/22/05 17:52:56	
	22063052	02/22/05 17:31:13	02/22/05 17:52:56	02/22/05 17:53:35	04:51:51
Stream-04		02/22/05 12:39:22	02/22/05 17:53:35	02/22/05 17:54:28	
	22063053	02/22/05 17:35:33	02/22/05 17:54:28	02/22/05 17:55:03	04:56:11
Stream-05		02/22/05 12:39:22	02/22/05 17:55:03	02/22/05 17:55:57	
	22063054	02/22/05 17:41:27	02/22/05 17:55:57	02/22/05 17:56:33	05:02:05
Stream-06		02/22/05 12:39:22	02/22/05 17:56:33	02/22/05 17:57:24	
	22063055	02/22/05 17:48:33	02/22/05 17:57:24	02/22/05 17:58:02	05:09:01



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TPC-H Timing Intervals (in seconds):

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	374.5	19.6	26.8	19.2	109.7	16.3	103.6	66.6	410.0	81.1	28.2	34.1
Stream 01	771.0	212.5	146.3	37.5	1133.0	115.9	1975.4	502.6	1952.1	573.0	118.7	154.6
Stream 02	635.0	138.4	105.1	47.5	920.1	141.6	1199.1	318.5	2141.4	455.8	128.1	167.9
Stream 03	677.8	108.8	242.2	99.2	1300.7	65.2	1222.9	423.3	1580.7	320.3	78.4	142.3
Stream 04	813.4	161.1	233.1	62.2	1129.2	49.3	1389.0	326.4	2223.0	416.6	140.6	85.7
Stream 05	1067.4	115.6	212.6	81.8	977.4	95.1	1194.5	292.5	1695.7	507.3	107.6	109.9
Stream 06	1088.2	84.7	121.4	45.2	1068.6	139.8	1521.6	472.6	1595.1	353.0	151.4	119.9
Minimum	635.0	84.7	105.1	37.5	920.1	49.3	1194.4	292.5	1580.7	320.3	78.4	85.7
Average	842.1	136.9	176.8	62.2	1088.2	101.1	1417.0	389.3	1864.7	437.7	120.8	130.1
Maximum	1088.2	212.5	242.2	99.2	1300.7	141.6	1975.3	502.5	2222.9	573.0	151.4	167.9

Stream ID	Q13	Q14	Q15a	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	321.6	30.0	71.5	120.3	101.3	681.8	115.8	38.2	397.0	128.7	71.0	48.3
Stream 01	3151.4	67.9	545.8	953.8	521.9	1836.3	656.7	235.4	1714.9	901.9	18618.3	37.5
Stream 02	3477.5	221.2	945.0	1261.4	625.0	1758.6	704.7	157.6	1696.4	459.9	62.5	38.8
Stream 03	3600.7	195.8	725.3	962.4	512.6	2346.2	432.7	130.2	1756.8	587.0	52.8	38.2
Stream 04	3444.1	57.4	473.4	1061.0	459.3	2433.1	633.0	297.3	1454.7	428.2	53.1	35.7
Stream 05	4270.0	201.9	467.0	811.3	433.3	2479.8	613.8	148.0	1719.4	523.4	53.4	36.1
Stream 06	4762.8	226.6	422.9	716.3	605.6	2251.3	759.1	525.7	768.6	751.6	50.6	38.4
Minimum	3151.4	57.4	422.9	716.3	433.3	1758.6	432.7	130.2	768.6	428.2	50.6	35.7
Average	3784.4	161.8	596.6	961.0	526.3	2184.2	633.3	249.0	1518.5	608.7	3148.4	37.5
Maximum	4762.8	226.6	945.0	1261.4	625.0	2479.8	759.1	525.6	1756.8	901.9	18618.3	38.8