

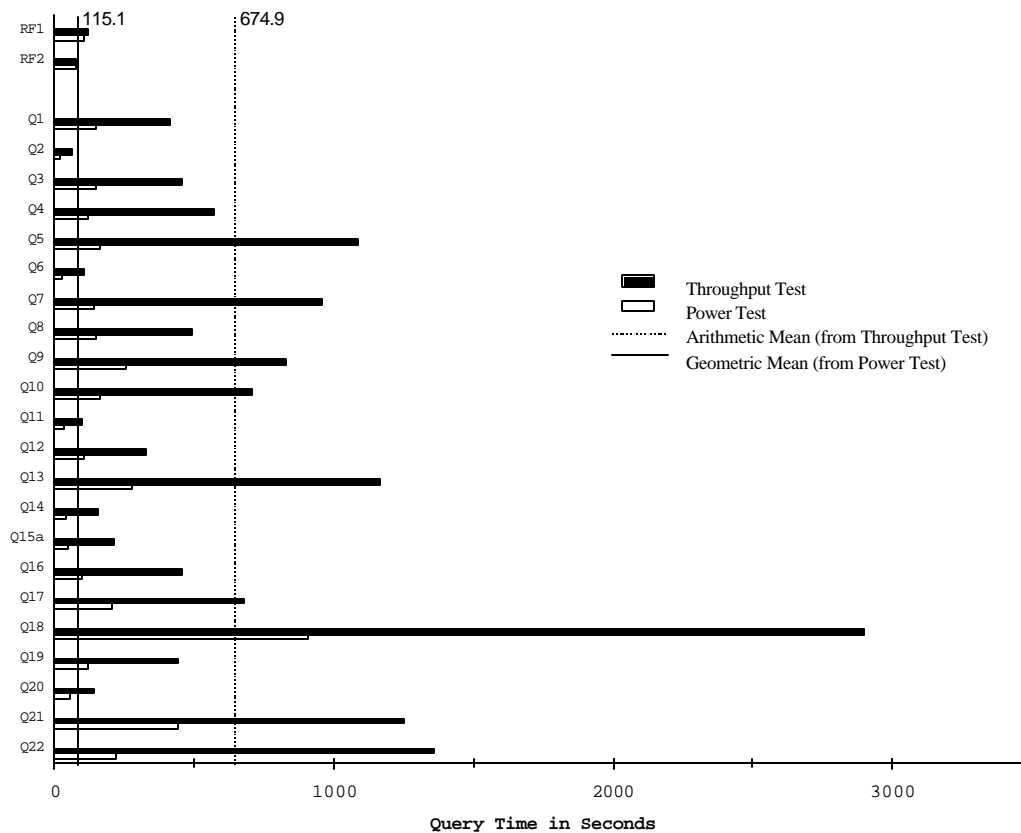


SGI 1450 Server with DB2 UDB EEE v7.2

TPC-H Rev. 1.3.0

Report Date:
May 11, 2001

Total System Cost	Composite Query per Hour Rating			Price/Performance
\$948,966	2,733.8 QphH@100GB			\$347 \$/QphH@100GB
Database Size	Database Manager	Operating System	Other Software	Availability Date
100GB	DB2 UDB EEE v7.2	Linux 2.4.3	SGI ProPack 1.5	October 31, 2001



Database Load Time: 2:13:50	Load included backup: N	Total Data Storage/Database Size: 44.88
RAID (base tables): N	RAID (Base Tables and Auxiliary Data Structures): N	RAID (All): Y
System Components		
4 x SGI 1450 Server nodes, each with		
Processors	4 x 700 MHz Intel Pentium III Xeon w/2MB cache	
Memory	4 GB	
Disk Controllers	5 PCI FC (Fibre Channel)	
Disk Drives	60 x 18 GB FC (external – formatted size 17.13 GB), 2 x 36.4 GB SCSI (internal – formatted size 33.90 GB)	
Network Controller	1 x PCI Gigabit Ethernet Adapter	
Total Storage	4383.08 GB (GB is defined as 1024*1024*1024 Bytes)	



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Description	Part Number	Source	Unit Price	Qty	Ext Price	5 Yr Maint Price
Server Hardware						
SGI 1450 Server	SYS1450	SGI	3,599.20	4	14,396.80	
Intel Pentium III 700mhz Xeon CPU w/2MB cache	CPUX0321	SGI	2,319.20	16	37,107.20	
1GB memory	MEM1GBS1	SGI	1,207.20	16	19,315.20	
36.4 GB SCSI drive	DRV36GB1	SGI	735.20	8	5,881.60	
PCI Gigabit Ethernet Adapter	PCI00012	SGI	559.20	4	2,236.80	
SGI 19" CRT No. Hemisphere	D-M19	SGI	399.20	4	1,596.80	
Full Express 7x24 OS and Hrdwr 3YF	SSE51033	SGI	3,343.12	4		13,372.48
Full Express 7x24 OS and Hrdwr 1+A	SSE51013	SGI	1,583.12	8		12,664.96
Keyboard	KBD00100U	SGI	55.20	4	220.80	
Monitor Cable	CBL00022U	SGI	7.20	4	28.80	
Power Cord	PWR00027	SGI	0.00	8	0.00	
10 meter optical cable	X-F-OPT-10M	SGI	94.50	4	378.00	
3 meter optical cable	X-F-OPT-3M	SGI	72.45	20	1,449.00	
PCI FC Card - Opt interface	PCI-FC-1POPT-A	SGI	1,880.00	20	37,600.00	
Cisco Catalyst						
Gigabit Ethernet Switch	3508G XI	CDW	3,679.10	1	3,679.10	9,198.05
GBICs for switch	Cisco GBIC	CDW	299.68	4	1,198.72	
20 KVA UPS	SL20KF	APC	18,287.00	1	18,287.00	15,722.00
Switch Pannel for UPS	SBP20KFC1M1	APC	1,279.00	1	1,279.00	
Batteries for UPS	SLB15K20F2	APC	10,000.00	1	10,000.00	2,334.00
Subtotal					154,654.82	53,291.49
Server Storage						
TP 9100 Rack	STOR-RACK	SGI	2,520.00	4	10,080.00	
TP 9100 Base enclosure	STOR-NEWBASE	SGI	6,930.00	20	138,600.00	52,800.00
18GB FC drive	STOR-18GB-A	SGI	630.00	240	151,200.00	
Optical Interface for Raid Controller	STOR-OPT	SGI	189.00	20	3,780.00	
US PDU for TP9100 rack (set of 2)	STOR-DKRACK-US	SGI	0.00	4	0.00	
Upgrade to 7x24 4hr response	CS-EXHR-7X24	SGI	924.00	4		18,480.00
Subtotal					303,660.00	71,280.00
Server Software						
Red Hat 6.2	SC5-REDHAT-6.2	SGI	\$79.20	4	\$316.80	
SGI ProPack v1.5	SC5-PROPACK-1.3	SGI	\$0.00	4	\$0.00	
DB2 UDB EEE v7.2 Program Package	20P5196	IBM	\$19,813.00	1	19,813.00	50,255.00
DB2 UDB EEE v7.2 1 processor Entitlement	20P5202	IBM	\$19,713.00	15	295,695.00	
Subtotal					315,824.80	50,255.00
Total Cost of Hardware and Software					774,139.62	174,826.49
Five Year Cost Of Ownership					\$948,966.11	
QphH@100GB					2733.8	
\$ / QphH@100GB					\$347.12	

Audited by Brad Askins for InfoSizing, Inc.

Note: Hardware available now, SGI ProPack 1.5 and Database software available October 31, 2001.

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 base 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 sections of the TPC benchmark specifications. If you find the stated prices are not available according to these terms, please notify the TPC at pricing@tpc.org. Thank You.



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Numerical Quantities Summary

Measurement Results:

Database Scaling (SF/Size)	=	100
Total Data Storage/Database Size	=	44.88
Database Load Time	=	2:13:50
Query Streams for Throughput Test	=	5
TPC-H Power Metric (QppH@100GB)	=	3,128.8
TPC-H Throughput Metric (QthH@100GB)	=	2,388.6
Composite Query-per-Hour Rating (QphH@100GB)	=	2,733.8
Total System Price over 5 years	=	\$948,966
TPC-H Price/Performance Metric (\$/QphH@100GB)	=	\$347

Measurement Intervals

Measurement Interval in Throughput Test (TS) = 16,579 seconds

Duration of Stream Execution

Stream ID	Seed Used	Start Date	Start Time	End Date	End Time
Stream 00	508100805	05/08/2001	16:50:43	05/08/2001	17:58:04
Stream 01	508100806	05/08/2001	18:02:05	05/08/2001	21:40:29
Stream 02	508100807	05/08/2001	18:02:05	05/08/2001	22:22:15
Stream 03	508100808	05/08/2001	18:02:05	05/08/2001	22:17:32
Stream 04	508100809	05/08/2001	18:02:05	05/08/2001	22:13:48
Stream 05	508100810	05/08/2001	18:02:05	05/08/2001	22:13:37
Refresh		05/08/2001	18:02:02	05/08/2001	22:38:21



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Timing Intervals (in Seconds)

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
Stream 00	145.1	20.9	146.2	120.3	163.1	26.7	139.1	144.2	253.8	160.5	36.0	105.6
Stream 01	420.1	45.4	410.1	489.3	996.9	101.8	1209.6	295.9	759.2	422.1	155.4	208.7
Stream 02	267.0	109.5	472.5	284.5	1193.8	106.2	623.0	519.9	808.7	1128.2	129.3	428.9
Stream 03	550.1	63.3	309.4	722.4	1244.7	107.3	952.7	746.1	891.1	947.9	59.7	400.8
Stream 04	535.5	48.4	472.0	783.9	1148.8	90.8	918.4	324.7	926.3	411.5	61.8	367.5
Stream 05	289.4	54.6	605.9	564.4	845.2	125.9	1064.5	572.2	743.8	627.0	93.2	212.3
Minimum	267.0	45.4	309.4	284.5	845.2	90.8	623.0	295.9	743.8	411.5	59.7	208.7
Average	412.4	64.2	454.0	568.9	1085.9	106.4	953.6	491.8	825.8	707.3	99.9	323.6
Maximum	550.1	109.5	605.9	783.9	1244.7	125.9	1209.6	746.1	926.3	1128.2	155.4	428.9
Stream ID	Q13	Q14	Q15a	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 00	276.6	39.0	45.9	95.0	205.3	908.7	114.9	51.0	443.0	217.0	106.8	76.1
Stream 01	1095.3	79.9	130.9	339.5	604.6	1520.2	267.0	228.7	1548.6	1774.4	122.6	73.6
Stream 02	1212.1	235.5	433.8	633.2	952.5	3537.5	617.2	74.4	554.0	1288.2	118.5	74.1
Stream 03	959.2	93.7	118.9	360.3	854.0	3210.3	256.5	114.8	1126.1	1237.7	122.6	73.3
Stream 04	1162.5	217.2	154.5	392.6	639.4	2967.6	640.3	174.3	1480.8	1183.7	116.1	73.9
Stream 05	1383.8	160.9	233.9	537.3	342.0	3250.4	436.0	102.6	1549.8	1296.8	117.2	74.2
Minimum	959.2	79.9	118.9	339.5	342.0	1520.2	256.5	74.4	554.0	1183.7	116.1	73.3
Average	1162.6	157.4	214.4	452.6	678.5	2897.2	443.4	139.0	1251.9	1356.2	119.4	73.8
Maximum	1383.8	235.5	433.8	633.2	952.5	3537.5	640.3	228.7	1549.8	1774.4	122.6	74.2