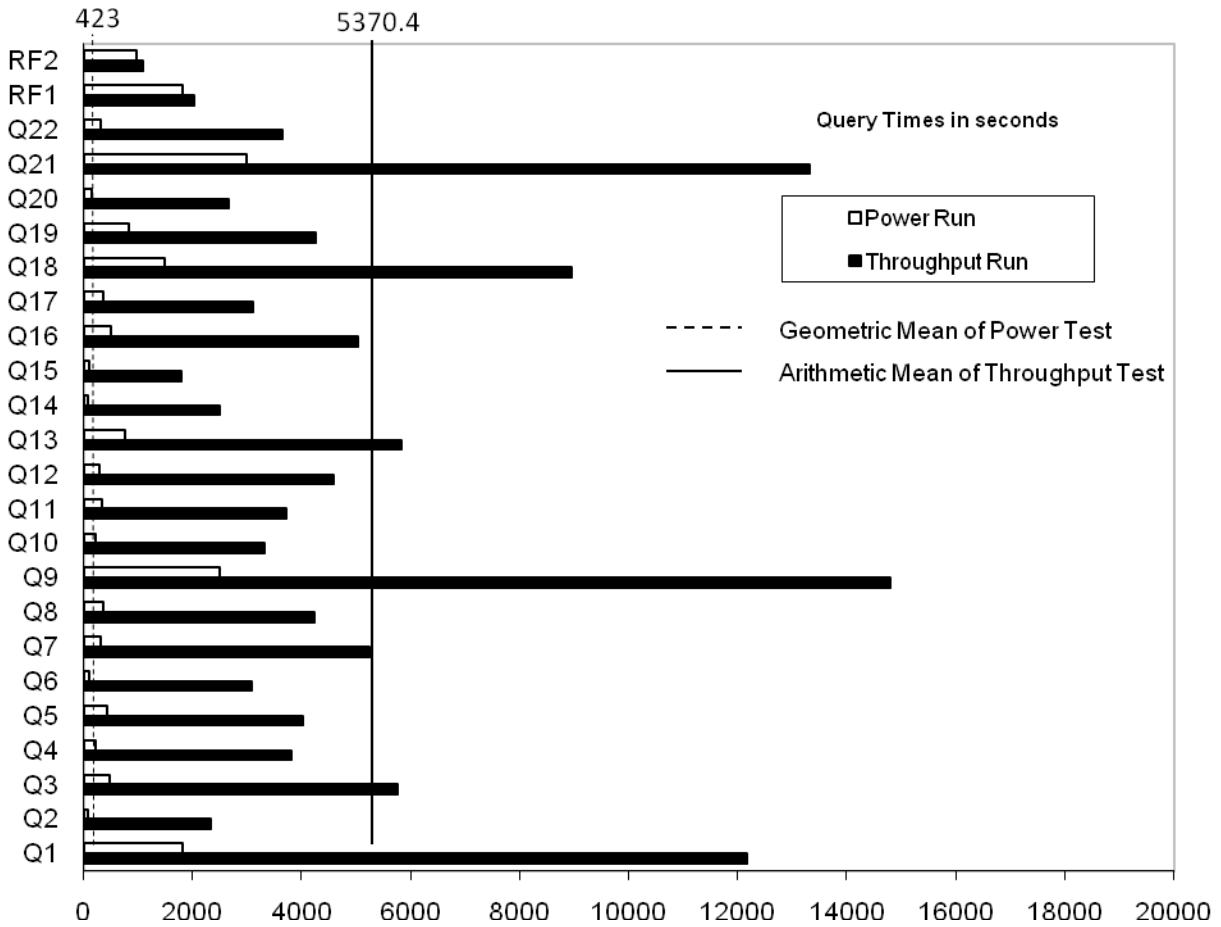
		HP Integrity Superdome		TPC-H Rev. 2.6.1	
				Report Date February 27 2008	
Total System Cost		Composite Query per Hour Rating		Price Performance	
\$2,453,213 USD		63,650.9 QphH @ 10000G		\$38.54 USD \$ / QphH @10000G	
Database size	Database Manager	Operating System	Other Software	Availability Date	
10000G	Microsoft SQL Server 2008 Enterprise Edition for Itanium-based systems	Windows Server 2008 for Itanium-based systems	MS Visual Basic MS Visual C++ MS Resource Kit	August 30, 2008	



Database Load Time = 59h01m31s Load included backup: Y Total Data Storage / Database Size = 8.48
 RAID(Base Tables): Y RAID(Base Tables and Auxiliary Data Structure): Y RAID(All)= Y

System configuration

Processors/Cores/Threads	32/64/64 Dual-Core Intel Itanium Processor 9140N @ 1.6GHz / 18 MB
Memory	768 GB Main Memory
Disk Controllers	24 SmartArray P800 1 Smart Array 6402 (boot) 2 Fibre Channel Controllers
Disk Drives	8 36 GB SCSI (Boot/Tools) 42 146 GB SCSI (Log) 1152 72 GB SCSI (DB)
Total Disk Storage	84,772.2 GB



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Description	Price Key	Part Number	Unit Price	Qty.	Extended Price	3 Yr Maint Price
Server Hardware						
HP Superdome 32p/64c Chassis PCI-e	1	A9834A	\$235,950	1	\$235,950	
IPF Superdome Cell Board (sx2000)	1	A9837A	\$19,250	8	\$154,000	
HP 12 Slot PCI-e Chassis for sx2000	1	AB405A	\$16,950	4	\$67,800	
3 Year Svc & Support Price (Hardware and Software)	1			1		\$621,658
HP Superdome Itanium 1.6 GHz/18MB 9140N	1	AD371A	\$23,000	32	\$736,000	
Superdome 32GB Bundle	1	A9849A	\$99,950	8	\$799,600	
Superdome 512GB Memory Pack	1	A9857A	\$1,299,950	1	\$1,299,950	
Graphite I/O expansion power subsystem	1	A5861D	\$34,860	1	\$34,860	
12 Slot PCI I/O Enclosure	1	A9852A	\$25,750	1	\$25,750	
12 Slot PCIe IO Chassis for rack expansion cabinet	1	AB405AZ	\$16,950	4	\$67,800	
HP Universal Rack 10642 G2 Pallet Rack	1	AF001A	\$1,249	5	\$6,245	
HP 24A High Voltage Modular PDU	1	252663-D72	\$299	10	\$2,990	
HP ProCurve Switch2124	1	J4868AZ	\$279	1	\$279	
HP Superdome Rack System Mgmt. Station	1	A9802C	\$16,000	1	\$16,000	
HP TFT7600 Rackmount Kbd and 17" Monitor	1	AG052A	\$2,199	1	\$2,199	
HP Dual Channel U320 SCSI Adapter	1	A7173A	\$795	1	\$795	
5300 Tape Array plus DVD	1	C7508B	\$1,378	1	\$1,378	
1000Base-T Gigabit Eth Adp	1	A9900A	\$486	1	\$486	
			Subtotal		\$3,452,082	\$621,658
Storage						
FC-HBA 2GB, 2 Channel	1	AB466A	\$2,450	1	\$2,450	
FC-HBA 2GB, 1 Channel	1	AB467A	\$1,520	1	\$1,520	
5M LC to LC Cable Kit	1	221692-B22	\$82	3	\$246	
Modular Storage Array 1000	1	201723-B22	\$6,499	3	\$19,497	
MSA1000 controller	1	218231-B22	\$3,999	3	\$11,997	
Storage MSA1000 Support 3yrs 24x7 4hr incl disks	1	HA110A3 #6FG	\$3,222	3		\$9,666
HP 146GB, 10K U320 Pluggable Hard Drive	1	286716-B22	\$479	42	\$20,118	
HP Smart Array Controller P800	1	AD335A	\$1,405	24	\$33,720	
Storage MSA70	1	418800-B21	\$3,199	48	\$153,552	
Storage MSA70 10% Spares	1	418800-B21	\$3,199	5	\$15,995	
HP ext Mini SAS 2m Cable	1	407339-B21	\$111	12	\$1,332	
HP ext Mini SAS 4m Cable	1	432238-B21	\$142	24	\$3,408	
HP ext Mini SAS 6m Cable	1	432239-B21	\$224	12	\$2,688	
HP 72GB 15k 2.5 Single Port HP SAS Drive	1	431935-B21	\$409	1152	\$471,168	
HP 72GB 15k 2.5 Single Port HP SAS Drive spares	1	431935-B21	\$409	116	\$47,444	



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HP Smart Array Controller 6402	1	A9890A	\$1,669	1	\$1,669	
Storageworks MSA30 SB Storage	1	302969-B21	\$2,594	1	\$2,594	
36GB, 15krpm Ultra320 disk	1	286776-B22	\$319	8	\$2,552	
36GB, 15krpm Ultra320 disk spares	1	286776-B22	\$319	2	\$638	
Storage MSA30 Support 3yrs 24x7 4 hr	1	HA110A3 #7GT	\$1,827	1		\$1,827
			Subtotal		\$792,588	\$11,493
Server Software						
Microsoft Windows Server 2008	1	T8704A #032	\$78,400	1	\$78,400	
Microsoft SQL Server 2008 Enterprise Edition for Itanium-based Systems	2		\$8,318	1	\$8,318	\$245
Microsoft SQL Server 2008 Client License	2		\$156	65	\$10,140	
Microsoft Visual Studio Standard	2	127-00012	\$250	1	\$250	
			Subtotal		\$97,108	\$245
			Total Extended Price		\$4,341,778	\$633,396
HP's Large Configuration Discount *			Total Discounts		\$2,182,473	\$339,488
Price Key: 1 - HP , 2 - Microsoft, Audited by Lorna Livingtree of Performance Metrics, Inc			Grand Total		\$2,159,305	\$293,908
* All discounts are based on US list prices and for similar quantities and configurations. A 50.88% discount was based on the overall specific components and support pricing from vendor 1 in this single quotation. Discounts for similarly sized configurations will be similar to those quoted here, but may vary based on the components in the configuration.			3 year cost of ownership USD:			\$2,453,213
			QphH @ 10000GB:			63,650.9
			\$ USD/QphH @ 10000GB			\$38.54
Sales contact: HP Sales Development, 19111 Pruneridge Ave., Cupertino, CA 95014 (408) 447 2320						
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 sections of the TPC benchmark specifications. If you find that the stated prices are not available according to these terms, please inform at pricing@tpc.org. Thank you.						



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Numerical Quantities

Measurement Results

Database Scale Factor	10000GB
Total Data Storage / Database Size	8.48
Start of Database Load	2/2/2008 17:35:14
End of Database Load	2/5/2008 10:19:02
Database Load Time	59h01m31s
Query Streams for Throughput Test	9
TPC-H Power	85,106.4
TPC-H Throughput	47,604.4
TPC-H Composite Query-per-Hour (QpH@10000GB)	63,650.9
Total System Price over 3 Years	\$ 2,453,213 USD
TPC-H Price/Performance Metric (USD / QpH@10000GB)	\$ 38.54 USD / QpH@10000GB

Measurement Interval

Measurement Interval in Throughput Test (Ts) = seconds 149734 seconds

Duration of Stream Execution

	Seed	Query Start		RF1 Start Date/Time		RF2 Start Date/Time		Duration
		Date/Time	Query End Date/Time	RF1 End Date/Time	RF2 End Date/Time			
Stream 00	205101902	02/07/08	23:25:44	02/07/08	22:51:47	02/08/08	3:30:20	4:54:32
		02/08/08	3:30:20	02/07/08	23:22:02	02/08/08	3:46:19	
Stream 01	205101903	02/08/08	3:46:21	02/09/08	13:32:08	02/09/08	14:01:42	10:33:22
		02/09/08	10:19:34	02/09/08	14:01:40	02/09/08	14:19:43	
Stream 02	205101904	02/08/08	3:46:21	02/09/08	14:19:48	02/09/08	14:56:19	11:27:06
		02/09/08	11:18:35	02/09/08	14:56:17	02/09/08	15:13:27	
Stream 03	205101905	02/08/08	3:46:22	02/09/08	15:13:33	02/09/08	15:47:26	12:19:03
		02/09/08	12:19:12	02/09/08	15:47:23	02/09/08	16:05:24	
Stream 04	205101906	02/08/08	3:46:22	02/09/08	16:05:33	02/09/08	16:39:31	13:10:44
		02/09/08	13:28:52	02/09/08	16:39:28	02/09/08	16:57:06	
Stream 05	205101907	02/08/08	3:46:22	02/09/08	16:57:16	02/09/08	17:31:54	14:04:12
		02/09/08	12:39:11	02/09/08	17:31:49	02/09/08	17:50:35	
Stream 06	205101908	02/08/08	3:46:23	02/09/08	17:50:46	02/09/08	18:25:52	14:57:52
		02/09/08	13:23:00	02/09/08	18:25:47	02/09/08	18:44:15	
Stream 07	205101909	02/08/08	3:46:23	02/09/08	18:44:29	02/09/08	19:18:52	15:50:53
		02/09/08	13:32:06	02/09/08	19:18:46	02/09/08	19:37:16	
Stream 08	205101910	02/08/08	3:46:24	02/09/08	19:37:31	02/09/08	20:11:40	16:44:05
		02/09/08	12:53:34	02/09/08	20:11:33	02/09/08	20:30:29	
Stream 09	205101911	02/08/08	3:46:25	02/09/08	20:30:48	02/09/08	21:04:07	17:35:30
		02/09/08	13:25:30	02/09/08	21:04:00	02/09/08	21:21:55	



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TPC-H Timing Intervals (in seconds):

Query	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Stream 0	1822.0	69.5	474.8	217.2	418.7	93.1	321.5	362.4
Stream 1	10265.8	1078.0	4026.9	4375.4	2806.0	6463.4	7663.7	3932.6
Stream 2	9969.9	5264.2	2824.6	3580.6	2694.4	640.4	3021.9	3361.8
Stream 3	13127.9	935.8	8277.7	3709.3	8354.7	4238.0	3290.8	2892.9
Stream 4	11925.8	1597.3	8999.6	2664.6	1623.5	4876.6	6165.1	2832.0
Stream 5	12547.7	3031.9	3831.4	3398.3	2649.5	3681.8	3463.9	5335.5
Stream 6	12277.7	3283.1	8983.8	2164.1	4727.8	838.5	7879.9	3422.8
Stream 7	11388.5	1738.4	6332.8	8571.0	5057.7	477.0	6672.7	3988.6
Stream 8	15483.7	2290.2	5263.4	3002.2	4229.0	3292.7	3785.0	3699.8
Stream 9	12494.2	1843.1	3225.2	2889.0	4144.6	3176.0	5274.2	8590.5
Min Qi	9969.9	935.8	2824.6	2164.1	1623.5	477.0	3021.9	2832.0
Max Qi	15483.7	5264.2	8999.6	8571.0	8354.7	6463.4	7879.9	8590.5
Avg Qi	12164.6	2340.2	5751.7	3817.2	4031.9	3076.0	5246.4	4228.5
Query	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16
Stream 0	2486.1	210.8	323.9	294.6	759.9	83.3	99.1	494.9
Stream 1	13513.1	2524.3	5600.4	3104.1	5420.0	1688.6	3718.5	5126.0
Stream 2	15332.7	2318.9	3662.2	3489.7	5819.6	2466.1	1407.3	4775.5
Stream 3	12006.2	2793.3	3275.8	5357.6	5053.9	2369.9	1871.5	6700.4
Stream 4	12545.6	2251.5	2276.1	9031.2	5356.9	1507.3	1410.2	3289.0
Stream 5	13820.0	6414.6	2537.2	5973.7	8272.1	1515.5	1851.6	5742.2
Stream 6	14292.8	925.8	3049.6	3624.4	6168.8	1004.7	2310.5	6948.8
Stream 7	17168.8	4961.9	3014.9	1491.3	5714.8	593.7	450.4	7831.6
Stream 8	19058.5	4855.5	3788.8	3696.3	5370.3	4977.5	932.0	3676.3
Stream 9	15455.8	2803.5	6185.0	5489.2	5309.5	6390.2	2207.9	1229.8
Min Qi	12006.2	925.8	2276.1	1491.3	5053.9	593.7	450.4	1229.8
Max Qi	19058.5	6414.6	6185.0	9031.2	8272.1	6390.2	3718.5	7831.6
Avg Qi	14799.3	3316.6	3710.0	4584.2	5831.8	2501.5	1795.5	5035.5
Query	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
Stream 0	367.1	1482.9	821.3	158.9	2996.9	316.5	1814.6	959.0
Stream 1	1520.2	7792.2	6246.7	1090.4	9896.6	2140.3	1772.1	1081.7
Stream 2	7686.0	7198.4	5556.4	2872.0	13118.7	6472.9	2188.2	1027.9
Stream 3	1256.2	7784.3	4065.3	2696.1	15762.4	1350.7	2029.1	1078.8
Stream 4	1871.7	11777.4	5074.0	508.5	19998.3	3767.7	2034.6	1054.2
Stream 5	3090.9	12364.6	2997.7	3364.3	10361.8	2122.9	2073.8	1120.5
Stream 6	4689.8	7669.7	4558.4	5023.1	12309.1	4844.5	2100.7	1102.8
Stream 7	1875.8	7586.9	3526.8	3245.1	14259.9	5594.5	2057.7	1103.8
Stream 8	3385.8	8284.4	2855.4	820.6	13058.2	3423.9	2042.1	1128.8
Stream 9	2606.1	10100.1	3398.1	4218.5	11087.6	3026.7	1991.7	1067.9
Min Qi	1256.2	7198.4	2855.4	508.5	9896.6	1350.7	1772.1	1027.9
Max Qi	7686.0	12364.6	6246.7	5023.1	19998.3	6472.9	2188.2	1128.8
Avg Qi	3109.2	8950.9	4253.2	2648.7	13317.0	3638.2	2032.2	1085.2