



HP ProLiant DL785 G6

TPC-H Rev. 2.8.0

Report Date: July 30, 2009

Total System Cost

Composite Query per Hour Rating

Price Performance

\$ 177,550 USD

91,558.2 QphH
@ 300G

\$ 1.94 USD
\$/ QphH @300G

Database size

Database Manager

Operating System

Other Software

Availability Date

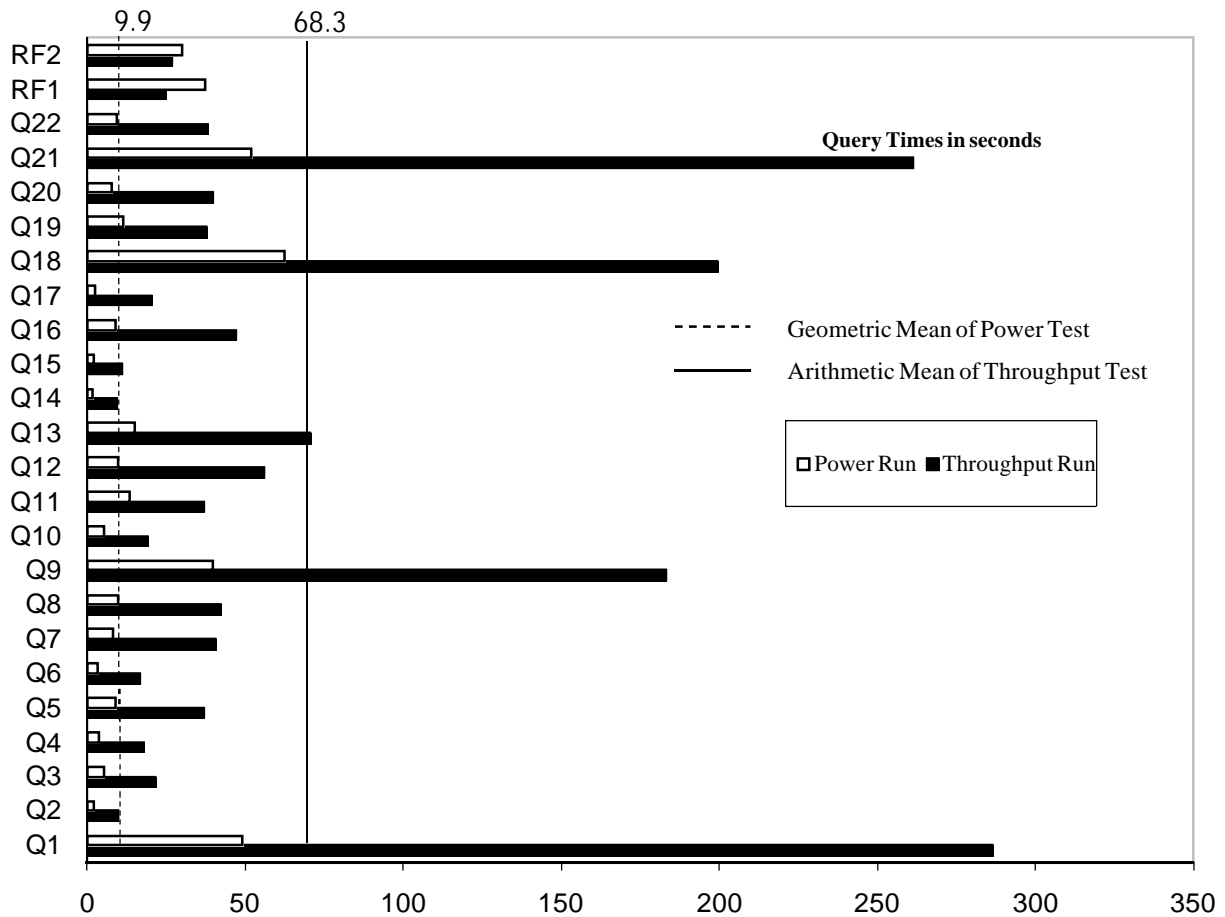
300GB

Microsoft SQL Server
2008 Enterprise Edition
SP1 for x64

Windows Server 2008
Enterprise Edition SP1
for x64

None

10/30/2009



Database Load Time = 13:19:50

Load included backup: Y

Total Data Storage / Database Size = 44.66

RAID(Base Tables): N

RAID (Base Tables and Auxiliary Data Structure): N

RAID(All)= N

System Components

System Total

Per Node

Nodes:	1	n.a.
AMD Opteron™ 8439 Six-Core 2.8GHz:	8	8
Cores:	48	48
Threads:	48	48
Memory:	256GB	256GB
OS Disk Drives(internal:4 x 36GB 15Krpm SAS):	4	4
Network Interfaces (on-board GigE):	2	2
Storage Controllers P800:	6	6
Storage Shelves MSA70:	12	n.a.
Storage Subsystem Disk Drives:	194	n.a.
Total Storage:	13,398.8 GB	n.a.



HP ProLiant DL785 G6

TPC-H Rev. 2.8.0

Report Date: July 30, 2009

Description	Price Key	Part Number	Unit Price	Qty.	Extended Price	3 Yr Maint Price	
Server Hardware							
HP DL785 CTO Chassis	1	AH233A	\$9,999	1	\$9,999		
HP O8439SE 2.8GHz DL785 4p FIO Kit	1	575261-L21	\$19,499	1	\$19,499		
HP O8439SE 2.8GHz DL785 4p Kit	1	575261-B21	\$19,499	1	\$19,499		
HP 8GB Reg PC2-6400 2x4GB	1	497767-B21	\$259	32	\$8,288		
HP 36GB 15k 2.5 Single Port HP SAS Drive	1	431933-B21	\$349	4	\$1,396		
HP 3year 4h 24x7 ProLiant DL785 HW Support	1	HA104A3 Opt.6XP	\$3,208	1		\$3,208	
HP s7540 17" CRT Monitor	1	PF997AA#ABA	\$139	1	\$139		
HP USB Keyboard	1	GM321AA#ABA	\$14	1	\$14		
HP Optical 4 Button USB Mouse	1	EW208AA#ABA	\$7	1	\$7		
Subtotal					\$58,841	\$3,208	
Storage							
HP 5642 Unassembled Rack	1	358254-B21	\$865	1	\$865		
HP Smart Array Controller P800	1	381513-B21	\$949	6	\$5,694		
Storage MSA70	1	418800-B21	\$3,199	12	\$38,388		
Storage MSA70 10% Spares	1	418800-B21	\$3,199	2	\$6,398		
HP ext Mini SAS 4m Cable	1	432238-B21	\$142	12	\$1,704		
HP 72GB 15k 2.5 Single Port HP SAS Drive	1	431935-B21	\$359	194	\$69,646		
HP 72GB 15k 2.5 Single Port HP SAS Drive 10% spares	1	431935-B21	\$359	20	\$7,180		
Subtotal					\$129,875	\$0	
Server Software							
Microsoft Windows Server 2008 Enterprise Edition (x64)	2	P72-03168	\$2,310	1	\$2,310		
Microsoft SQL Server 2008 Enterprise x64 Edition with 25 CALs	2	810-07578	\$8,318	1	\$8,318	\$245	
Microsoft SQL Server 2008 Client License	2	359-01912	\$156	35	\$5,460		
Subtotal					\$16,088	\$245	
Total Extended Price					\$204,804	\$3,453	
Total Discounts					\$30,195	\$513	
Price Key: 1 - HP , 2 - Microsoft, Audited by Lorna Livingtree of Performance Metrics, Inc					Grand Total	\$174,609	\$2,940
All discounts are based on US list prices and for similar quantities and configurations. A 16% discount was based on the overall specific components 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: \$177,550		
					QphH @ 300GB: 91,558.2		
					\$ USD/QphH @ 300GB \$1.94		
Sales contact: HP Sales Development, 19111 Pruneridge Ave., Cupertino, CA 95014 (408) 447 2320 or H-P direct: 800-203-6748							
Prices used in TPC benchmarks reflect the actual prices a customer would pay for a onetime 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.							



Numerical Quantities

Measurement Results

Database Scale Factor	300GB
Total Data Storage / Database Size	44.66
Start of Database Load	07/11/09 14:38:47
End of Database Load	07/12/09 03:58:37
Database Load Time	13h19m50s
Query Streams for Throughput Test	6
TPC-H Power	109,067.1
TPC-H Throughput	76,860.0
TPC-H Composite Query-per-Hour (QphH@300GB)	91,558.2
Total System Price over 3 Years	\$177,550
TPC-H Price/Performance Metric (USD / QphH@300GB)	\$1.94 / QphH@300GB

Measurement Interval

Measurement Interval in Throughput Test (Ts) = seconds 1855 seconds

Duration of Stream Execution

Power Stream	Seed	RF1 Start Time		Query Start Time		RF2 Start Time		Duration
		RF1 End Time		Query End Time		RF2 End Time		
	712035837	07/12/09	10:07:28	07/12/09	10:08:18	07/12/09	10:13:52	0:06:55
		07/12/09	10:08:05	07/12/09	10:13:52	07/12/09	10:14:23	

Throughput Stream	Seed	Query Start Time		Duration	RF1 Start Time		RF2 Start Time	
		Query End Time			RF1 End Time		RF2 End Time	
1	712035838	07/12/09	10:14:43	0:26:34	07/12/09	10:40:20	07/12/09	10:40:46
		07/12/09	10:39:50		07/12/09	10:40:46	07/12/09	10:41:17
2	712035839	07/12/09	10:14:43	0:27:32	07/12/09	10:41:18	07/12/09	10:41:47
		07/12/09	10:39:54		07/12/09	10:41:46	07/12/09	10:42:14
3	712035840	07/12/09	10:14:43	0:28:25	07/12/09	10:42:15	07/12/09	10:42:41
		07/12/09	10:39:06		07/12/09	10:42:40	07/12/09	10:43:08
4	712035841	07/12/09	10:14:43	0:29:15	07/12/09	10:43:09	07/12/09	10:43:32
		07/12/09	10:40:19		07/12/09	10:43:32	07/12/09	10:43:58
5	712035842	07/12/09	10:14:43	0:30:05	07/12/09	10:43:59	07/12/09	10:44:23
		07/12/09	10:39:51		07/12/09	10:44:22	07/12/09	10:44:48
6	712035843	07/12/09	10:14:43	0:30:54	07/12/09	10:44:49	07/12/09	10:45:13
		07/12/09	10:39:34		07/12/09	10:45:12	07/12/09	10:45:38



HP ProLiant DL785 G6

TPC-H Rev. 2.8.0
Report Date: July 30, 2009

TPC-H Timing Intervals (in seconds):

Query	Stream 0	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5	Stream 6	Min Qi	Max Qi	Avg. Qi
Q1	49.0	285.0	287.3	294.7	264.5	290.7	297.3	264.5	297.3	286.6
Q2	2.2	5.5	9.1	10.4	7.1	14.9	11.9	5.5	14.9	9.8
Q3	5.6	24.4	21.2	26.5	6.9	28.1	23.3	6.9	28.1	21.7
Q4	3.8	17.2	16.0	17.2	20.8	22.0	14.8	14.8	22.0	18.0
Q5	9.2	43.6	33.8	41.8	34.6	29.5	37.6	29.5	43.6	36.8
Q6	3.5	30.4	12.6	15.1	12.0	18.3	11.1	11.1	30.4	16.6
Q7	8.4	51.3	36.1	40.3	32.1	45.7	39.5	32.1	51.3	40.8
Q8	9.7	33.6	48.4	44.7	46.8	36.7	42.8	33.6	48.4	42.2
Q9	39.9	159.3	148.6	161.8	317.8	143.6	166.9	143.6	317.8	183.0
Q10	5.3	17.3	20.2	18.6	18.3	22.1	19.3	17.3	22.1	19.3
Q11	13.6	40.4	32.6	34.8	35.3	32.5	46.1	32.5	46.1	37.0
Q12	9.9	54.6	38.2	58.5	59.2	57.5	68.6	38.2	68.6	56.1
Q13	15.0	65.4	74.0	63.9	67.7	80.5	72.1	63.9	80.5	70.6
Q14	1.8	7.7	7.1	15.5	9.4	8.4	8.6	7.1	15.5	9.5
Q15	2.2	12.2	11.5	9.5	11.1	11.3	11.5	9.5	12.2	11.2
Q16	9.2	52.2	50.9	43.0	46.3	43.3	47.5	43.0	52.2	47.2
Q17	2.6	18.4	22.8	14.0	19.7	23.4	24.5	14.0	24.5	20.5
Q18	62.4	194.7	284.4	183.1	182.9	183.9	166.1	166.1	284.4	199.2
Q19	11.6	32.1	19.2	30.2	50.7	48.5	45.3	19.2	50.7	37.7
Q20	8.0	47.1	46.6	48.0	8.2	44.9	44.3	8.2	48.0	39.9
Q21	51.8	275.9	247.9	241.4	275.1	276.3	250.9	241.4	276.3	261.3
Q22	9.6	38.9	42.9	49.9	10.0	46.5	40.7	10.0	49.9	38.2
UF1	37.3	26.0	28.1	24.9	23.0	23.4	23.4	23.0	28.1	24.8
UF2	30.2	30.7	27.9	26.8	25.5	25.2	24.9	24.9	30.7	26.8