



HP ProLiant DL580 Gen8

TPC-H Rev. 2.16.1
 TPC Pricing Rev. 1.7.0

Report Date:
 April 15, 2014

Total System Cost

Composite Query per Hour Rating

Price/Performance

\$941,800 USD

404,005.7

\$2.34 USD

QphH @ 10000GB

\$/ QphH @ 10000GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

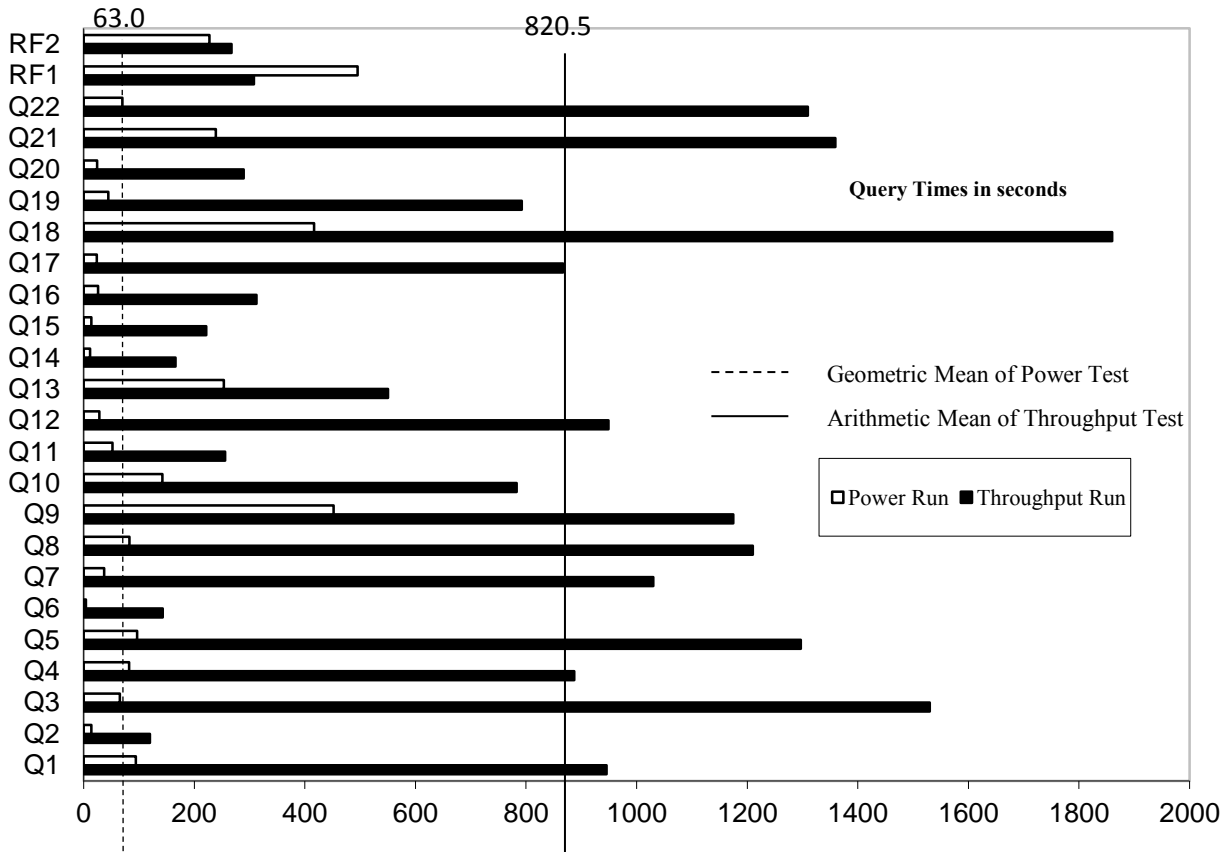
10000GB

SQL Server 2014
 Enterprise Edition

Windows Server 2012
 R2 Standard Edition

None

Now



Database Load Time = 03d 19h 58m 37s

Storage Redundancy Level

Load included backup: Y

Base Tables and Auxiliary Data Structures

0

Total Data Storage / Database Size = 15.13

DBMS Temporary Space

0

Memory/Database Size = 30.72%

OS and DBMS Software

1

System Components

System Total

Per Node

Nodes:	1	n.a.
Intel(R) Xeon(R) CPU E7-4890v2 @ 2.80GHz:	4	4
Cores/Threads:	60/120	60/120
Memory:	3072GB	3072GB
OS Disk Drives(internal)(300GB 6G SAS 15K each):	2	2
Network Interfaces (on-board GigE):	2	2
Storage Controllers HP 16Gb Dual FC:	9	9
MSA 2040 FC:	9	9
Storage Shelves D2700:	18	18
Storage Subsystem Disk Drives (Qty 56:146GB 6G SAS 15K):	528	n.a.
(Qty 472: 300GB 6G SAS 15K):		
Total Storage:	151,276 GB	n.a.



HP ProLiant DL580 Gen8

TPC-H Rev. 2.16.1
TPC Pricing Rev. 1.7.0

Report Date: April 15, 2014

Description	Price Key	Part Number	Unit Price	Qty.	Extended Price	3 Yr Maint Price
Server Hardware						
HP ProLiant DL580 Gen8	1	728551-B21	\$4,999	1	\$4,999	
HP DL580 Gen8 E7-4890v2 FIO processor Kit	1	728955-L21	\$8,749	1	\$8,749	
HP DL580 Gen8 E7-4890v2 Processor Kit	1	728955-B21	\$8,749	3	\$26,247	
HP 32GB 4Rx4 PC3-14900L-13 Kit	1	708643-B21	\$999	96	\$95,904	
HP DL580 Gen8 12 DIMM Slots Memory Cartridge	1	732411-B21	\$499	8	\$3,992	
HP 2G FIO Flash Backed Write Cache	1	758836-B21	\$549	1	\$549	
HP 1200W Common Slot Hot Plug Power Supply Kit	1	656364-B21	\$429	4	\$1,716	
HP 300GB 6G SAS 15K 2.5inch DP Enterp 3-yr warrant	1	652611-B21	\$545	5	\$2,725	
HP 3y 4h 24x7 ProLiant D58x HW Support	1	U4608E	\$2,044	1		\$2,044
HP 17" FlatPanel Monitor	1	GV537A8	\$130	3	\$390	
HP PS/2 Keyboard And Mouse Bundle	1	RC464AA	\$39	3	\$117	
					Subtotal	\$145,388 \$2,044
Storage						
HP Universal Rack 10642 G2 Shock Rack	1	AF002A	\$1,489	2	\$2,978	
HP 24A High Voltage US/JP Modular PDU	1	252663-D72	\$299	2	\$598	
HP MSA 2040 SAN Dual Controller SFF Storage	1	C8R15A	\$11,070	9	\$99,630	
HP MSA 2040 SAN Dual Controller SFF Storage (10% Spares)	1	C8R15A	\$11,070	2	\$22,140	
HP MSA 2040 16Gb SW FC SFP 4 Pk	1	C8R24A	\$1,600	5	\$8,000	
HP MSA 300GB 6G SAS 15K 2.5-inch DP Ent 3-yr warranty	1	C8S61A	\$649	192	\$124,608	
HP MSA 300GB 6G SAS 15K 2.5-inch DP Ent 3-yr warranty	1	C8S61A	\$649	20	\$12,980	
HP StorageWorks D2700 Disk Enclosure	1	AJ941A	\$3,399	18	\$61,182	
HP StorageWorks D2700 Disk Enclosure (10% Spares)	1	AJ941A	\$3,399	2	\$6,798	
HP 300GB 6G SAS 15K 2.5-inch DP Enterprise 3-yr warrant	1	652611-B21	\$649	280	\$181,720	
HP 300GB 6G SAS 15K 2.5-inch DP Enterprise 3-yr warrant	1	652611-B21	\$649	28	\$18,172	
HP 146GB 6G SAS 15K 2.5-inch DP Enterprise 3-yr warrant	1	512547-B21	\$369	56	\$20,664	
HP 146GB 6G SAS 15K 2.5-inch DP Enterprise 3-yr warrant	1	512547-B21	\$369	6	\$2,214	
HP 2m Multi-mode OM3 LC/LC FC Cable	1	627117-B21	\$75	18	\$1,350	
HP StoreFabric SN1000Q 16GB 2-port PCIe FC HBA	1	QW972A	\$2,799	9	\$25,191	
HP StoreFabric SN1000Q 16GB 2-port PCIe FC HBA(10% sp)	1	QW972A	\$2,799	2	\$5,598	
					Subtotal	\$593,823
Server Software						
SQL Server 2014 Enterprise Edition	2	7JQ-00750	\$13,473	30	\$404,175	
Windows Server 2012 R2 Standard Edition	2	P73-06284	\$735	2	\$1,470	
Windows Server 2012 R2 Client Access License	2	R18-04280	\$24	90	\$2,192.40	
Microsoft Problem Resolution Services	2	N/A	\$259	1		\$259
					Subtotal	\$407,837 \$259
					Total Extended Price	\$1,147,048 \$2,303
					Total Discounts	\$206,979 \$572
Price Key: 1 - HP , 2 - Microsoft Audited by Francois Raab of InfoSizing, Inc. (www.sizing.com)					Grand Total	\$940,069 \$1,731
All discounts are based on US list prices and for similar quantities and configurations. A 28% 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:	\$941,800
					QpH @ 10000GB:	404,005.7
					\$ USD/QpH @ 10000GB	\$2.34
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 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.						



HP ProLiant DL580 Gen8

TPC-H Rev. 2.16.1
TPC Pricing Rev. 1.7.0

Report Date: April 15, 2014

Numerical Quantities

Measurement Results

Database Scale Factor	10000
Total Data Storage / Database Size	15.13
Start of Database Load	2014-04-02 18:25:13
End of Database Load	2014-04-06 14:23:49
Database Load Time	03d 19h 58m 37s
Query Streams for Throughput Test	9
TPC-H Power	571,684.4
TPC-H Throughput	285,508.3
TPC-H Composite Query-per-Hour (QphH@10000GB)	404,005.7
Total System Price over 3 Years	\$ 941,800 USD
TPC-H Price/Performance Metric (\$ USD / QphH@10000GB)	\$ 2.34 USD / QphH@10000GB

Measurement Interval

Measurement Interval in Throughput Test 24,966 seconds

Duration of Stream Execution

Power Run	Seed	Query Start Time	Duration	RF1 Start Time	RF2 Start Time
		Query End Time	(sec)	RF1 End Time	RF2 End Time
	406142349	2014-04-06 22:56:51	00 00:37:54	2014-04-06 22:48:35	2014-04-06 23:34:45
		2014-04-06 23:34:45	2,274	2014-04-06 22:56:51	2014-04-06 23:38:32
Throughput Stream	Seed	Query Start Time	Duration	RF1 Start Time	RF2 Start Time
		Query End Time	(sec)	RF1 End Time	RF2 End Time
1	406142350	2014-04-06 23:38:32	00 04:42:01	2014-04-07 05:08:16	2014-04-07 05:15:46
		2014-04-07 04:20:33	16,921	2014-04-07 05:15:46	2014-04-07 05:21:47
2	406142351	2014-04-06 23:38:32	00 04:48:52	2014-04-07 05:21:48	2014-04-07 05:27:07
		2014-04-07 04:27:24	17,332	2014-04-07 05:27:07	2014-04-07 05:31:36
3	406142352	2014-04-06 23:38:32	00 04:39:25	2014-04-07 05:31:37	2014-04-07 05:38:16
		2014-04-07 04:17:57	16,765	2014-04-07 05:38:16	2014-04-07 05:42:31
4	406142353	2014-04-06 23:38:32	00 05:10:40	2014-04-07 05:42:31	2014-04-07 05:46:54
		2014-04-07 04:49:12	18,640	2014-04-07 05:46:53	2014-04-07 05:50:50
5	406142354	2014-04-06 23:38:32	00 04:57:04	2014-04-07 05:50:51	2014-04-07 05:55:35
		2014-04-07 04:35:36	17,824	2014-04-07 05:55:34	2014-04-07 05:59:49
6	406142355	2014-04-06 23:38:32	00 05:02:10	2014-04-07 05:59:49	2014-04-07 06:04:18
		2014-04-07 04:40:42	18,130	2014-04-07 06:04:18	2014-04-07 06:08:25
7	406142356	2014-04-06 23:38:32	00 05:06:10	2014-04-07 06:08:26	2014-04-07 06:12:30
		2014-04-07 04:44:42	18,370	2014-04-07 06:12:30	2014-04-07 06:17:16
8	406142357	2014-04-06 23:38:32	00 05:29:44	2014-04-07 06:17:16	2014-04-07 06:21:36
		2014-04-07 05:08:16	19,784	2014-04-07 06:21:36	2014-04-07 06:25:43
9	406142358	2014-04-06 23:38:32	00 05:11:45	2014-04-07 06:25:43	2014-04-07 06:30:27
		2014-04-07 04:50:17	18,705	2014-04-07 06:30:26	2014-04-07 06:34:38



HP ProLiant DL580 Gen8

TPC-H Rev. 2.16.1
TPC Pricing Rev. 1.7.0

Report Date: April 15, 2014

TPC-H Timing Intervals (in seconds):

Query	Stream 0	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5	Stream 6	Stream 7	Stream 8	Stream 9	Min Qi	Max Qi	Avg. Qi
Q1	94.4	392.2	1,366.3	491.4	345.7	970.9	1,202.9	575.0	2,832.9	333.3	94.4	2,832.9	860.5
Q2	13.7	214.9	63.8	132.4	52.6	120.6	38.0	174.6	5.9	276.7	5.9	276.7	109.3
Q3	65.4	3,143.4	1,146.7	558.4	118.1	782.2	2,994.6	862.7	2,433.5	1,729.5	65.4	3,143.4	1,383.5
Q4	82.1	209.9	837.1	413.4	479.1	540.3	1,368.4	455.6	1,043.1	2,635.8	82.2	2,635.7	806.5
Q5	96.5	1,254.9	1,668.7	2,852.2	158.6	2,392.4	676.3	851.7	1,672.1	142.2	96.5	2,852.2	1,176.6
Q6	3.9	243.0	8.7	130.6	152.0	132.7	113.5	71.0	183.6	251.8	3.9	251.8	129.1
Q7	37.0	2,177.3	434.7	1,604.9	900.2	1,684.5	1,455.3	240.8	547.7	223.3	37.0	2,177.3	930.6
Q8	82.5	1,139.4	417.3	363.3	1,325.6	1,152.8	1,637.2	1,626.8	913.1	2,316.3	82.5	2,316.3	1,097.4
Q9	452.1	1,300.7	1,869.1	1,423.7	1,824.7	741.3	1,140.3	1,369.4	722.6	179.1	179.1	1,869.1	1,102.3
Q10	142.5	2,012.6	517.6	605.7	1,157.2	364.3	223.5	725.7	225.6	1,215.8	142.5	2,012.6	719.1
Q11	52.0	530.0	228.2	143.8	291.9	325.5	258.2	142.1	57.4	322.9	52.0	530.0	235.2
Q12	28.4	104.2	1,101.1	405.0	1,687.7	1,150.9	1,284.9	203.6	2,383.3	221.5	28.4	2,383.3	857.1
Q13	253.6	531.1	391.6	576.2	649.0	527.6	579.4	761.1	282.8	652.2	253.6	761.1	520.5
Q14	11.2	313.3	85.3	89.0	69.2	545.2	93.6	104.3	141.1	52.4	11.2	545.2	150.5
Q15	13.7	130.3	263.7	356.2	121.8	382.7	171.7	128.7	256.7	181.9	13.7	382.7	200.7
Q16	25.8	70.9	641.1	495.2	125.1	350.5	184.5	279.6	500.4	166.9	25.8	641.1	284.0
Q17	23.4	370.0	2,296.8	597.6	612.2	470.6	252.9	2,419.0	415.5	364.8	23.4	2,419.0	782.3
Q18	416.8	1,595.8	2,030.6	1,636.3	3,109.2	1,227.6	2,476.9	2,036.8	515.2	2,110.1	416.8	3,109.3	1,715.5
Q19	44.3	220.8	593.8	876.5	852.1	619.1	524.2	2,469.8	302.0	671.8	44.3	2,469.8	717.4
Q20	24.4	286.7	443.4	287.4	151.0	271.5	182.4	152.6	444.8	383.6	24.4	444.8	262.8
Q21	239.0	521.3	535.4	2,440.3	2,546.0	2,705.6	238.1	1,984.0	243.1	1,019.3	238.1	2,705.6	1,247.2
Q22	69.8	157.5	390.2	284.5	1,910.7	364.0	1,032.1	733.7	3,660.8	3,252.2	69.8	3,660.8	1,185.6
RF1	495.3	448.7	319.0	399.4	262.3	283.8	268.4	244.4	259.8	283.5	244.4	495.3	326.5
RF2	227.5	361.2	269.2	254.6	236.8	254.2	247.6	285.6	246.5	251.1	227.5	361.2	263.4