



# HPE ProLiant DL380 Gen10

TPC-H Rev. 2.18.0  
 TPC Pricing Rev. 2.4.0

Report Date:  
 April 2, 2019

Total System Cost

Composite Query per Hour Rating

Price/Performance

**\$470,989 USD**

**1,244,450.6**

QphH @ 3000GB

**\$0.38 USD**

\$/ QphH @3000GB

Database Size

Database Manager

Operating System

Other Software

Availability Date

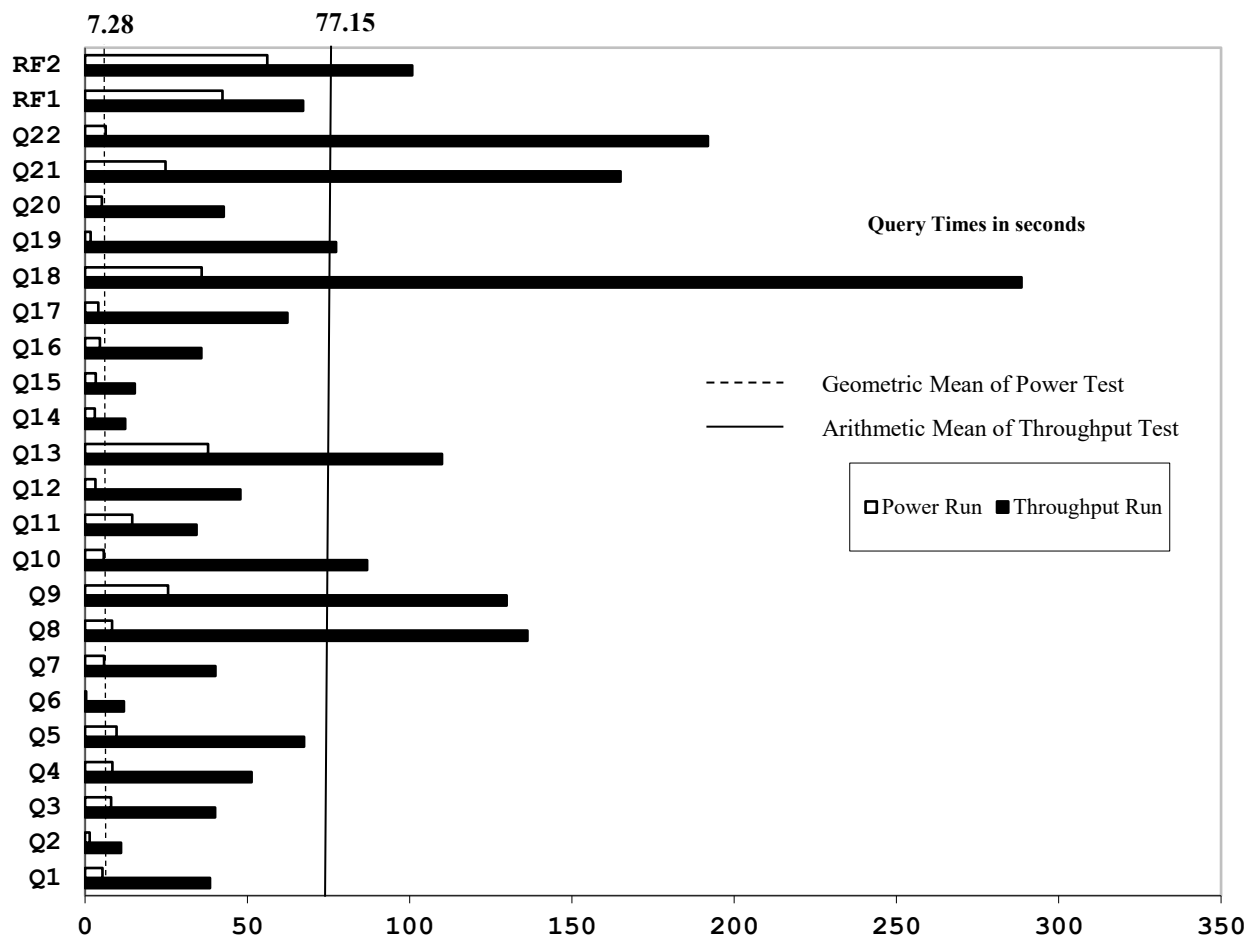
3000GB

SQL Server 2017 Enterprise Edition

SUSE Linux Enterprise Server 15

None

April 2, 2019



Database Load Time = 00d 22h 13m 04s

Storage Redundancy Level

Load included backup: Y

Base Tables and Auxiliary Data Structures

0

Total Data Storage / Database Size = 7.09

DBMS Temporary Space

0

Memory/Database Size = 51.2%

OS and DBMS Software

1

### System Components System Total

Nodes: 1

Intel(R) Xeon(R) Platinum 8280 @ 2.70GHz: 2

Cores/Threads: 56/112

Memory: 1,536 GiB

1.92 TB Read Intensive NVMe Drives 10

SAS 12 Gbps 2.4 TB 10k HDD 1

SAS 12 Gbps 600 GB SAS 15k HDD 2

Total Storage: 22.8 TB (21,270 GiB)



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Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price
<b>Server Hardware</b>						
HPE DL380 Gen10 8SFF CTO Server (Customer to Order)	1	868703-B21	\$2,359	1	\$2,359	
HPE DL380 Gen10 Intel® Xeon® Platinum 8280 (2.7GHz/28-core) Kit	1	P02527-B21	\$17,699	1	\$17,699	
HPE DL380 Gen10 Intel® Xeon® Platinum 8280 (2.7GHz/28-core) FIO Kit	1	P02527-L21	\$17,699	1	\$17,699	
HPE 64GB 2Rx4 PC4-2933Y-R Smart Kit	1	P00930-B21	\$2,462	24	\$59,088	
HPE DL38X Gen10 High Perf Fan	1	867810-B21	\$239	1	\$239	
HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	1	830272-B21	\$479	1	\$479	
HPE 3Y FC 24x7 DL380 Gen10 SVC	1	H8QP7E	\$2,448	1		\$2,448
HPE USB US Keyboard/Mouse Kit	1	631341-B21	\$29	1	\$29	
HPE 42U 600x1075mm Advanced Pallet Rack	1	H6J65A	\$1,019	1	\$1,019	
HPE Bsic 11kVA/60309/C13/INTL PDU	1	H5M73A	\$349	1	\$349	
		<b>Subtotal</b>			<b>\$98,960</b>	<b>\$2,448</b>
<b>Storage</b>						
HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) Controller	1	830824-B21	\$599	1	\$599	
HPE 600GB SAS 12G Enterprise 15K SFF (2.5in) SC 3yr Wty HDD	1	870757-B21	\$1,079	2	\$2,158	
HPE 2.4TB SAS 12G Enterprise 10K SFF (2.5in) SC 3yr Wty 512e HDD	1	881457-B21	\$1,249	1	\$1,249	
HPE 1.92TB NVMe x4 RI SFF SCN DS SSD	1	P10214-B21	\$3,120	10	\$31,200	
HPE DL38X NVMe 8 Solid State Drive Express Bay Enablement Kit	1	826689-B21	\$399	2	\$798	
HPE DL38X Gen10 4-port 8 NVMe Primary Slim SAS FIO Riser	1	867807-B21	\$359	1	\$359	
HPE DL38X Gen10 4-port 8 NVMe Secondary Slim SAS Riser	1	873732-B21	\$369	1	\$369	
		<b>Subtotal</b>			<b>\$36,732</b>	<b>\$0</b>
<b>Other</b>						
HP 23 Inch Monitor	3	HP 23f			\$199	
					<b>\$199</b>	<b>\$0</b>
<b>Server Software</b>						
SQL Server 2017 Enterprise Edition (2 core license)	2	N/A	\$13,472.50	28	\$377,230	included
Microsoft Problem Resolution Services	2	N/A	\$259	1		\$259
SLES 1-2 Sckt/1-2 VM 3yr 24x7 Flx LTU	1	M6K28A	\$3,509	1	\$3,509	
		<b>Subtotal</b>			<b>\$380,739</b>	<b>\$259</b>
Price Key: 1 - Hewlett Packard Enterprise, 2 - Microsoft, 3 - Hewlett Packard Inc.		<b>Total Extended Price</b>			<b>\$516,431</b>	<b>\$2,707</b>
		<b>Total Discounts</b>			<b>\$47,492</b>	<b>\$856</b>
Audited by Francois Raab of InfoSizing (www.sizing.com)		<b>Grand Total</b>			<b>\$469,138</b>	<b>\$1,851</b>
All discounts are based on US list prices and for similar quantities and configurations. A 35% 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.		<b>3 year cost of ownership USD:</b>				<b>\$470,989</b>
		<b>QpH @ 3000GB:</b>				<b>1,244,450.6</b>
		<b>\$ USD/QpH @ 3000GB</b>				<b>\$0.38</b>
Sales contact: HPE WW Headquarters, 3000 Hanover St., Palo Alto, CA 94304-1185 (855) 472-5233 / (800) 786-7967 / (888) 269-4073 (US)						
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-6399 (425) 882 8080						
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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Enterprise**

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### Numerical Quantities

#### Measurement Results

Database Scale Factor	3,000
Total Data Storage / Database Size	7.09
Percentage Memory / Database Size	51.2%
Start of Database Load	3/18/2019 3:25:09 AM
End of Database Load	3/19/2019 8:01:59 AM
Database Load Delay	00d 06h 23m 46s
Database Load Time	00d 22h 13m 04s
Query Streams for Throughput Test	8
TPC-H Power	1,483,804.0
TPC-H Throughput	1,043,707.4
TPC-H Composite Query-per-Hour (QphH@3000GB)	1,244,450.6
Total System Price over 3 Years (\$ USD)	\$470,989
TPC-H Price/Performance Metric (\$ USD / QphH@3000GB)	\$0.38

#### Measurement Interval

Measurement Interval in Throughput Test 1,821.20 seconds

#### Duration of Stream Execution

Power Run	Seed	Query Start Time	Duration (sec)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
	319080159	2019-03-19 08:58:52	00:03:45	2019-03-19 08:58:10	2019-03-19 09:02:37
		2019-03-19 09:02:37		2019-03-19 08:58:52	2019-03-19 09:03:33
Throughput Stream	Seed	Query Start Time	Duration (sec)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
1	319080160	2019-03-19 09:03:32	00:30:04	2019-03-19 09:03:32	2019-03-19 09:03:32
		2019-03-19 09:33:36		2019-03-19 09:04:32	2019-03-19 09:04:32
2	319080161	2019-03-19 09:03:32	00:26:16	2019-03-19 09:06:18	2019-03-19 09:06:18
		2019-03-19 09:29:48		2019-03-19 09:07:42	2019-03-19 09:07:42
3	319080162	2019-03-19 09:03:32	00:29:34	2019-03-19 09:09:12	2019-03-19 09:09:12
		2019-03-19 09:33:06		2019-03-19 09:10:15	2019-03-19 09:10:15
4	319080163	2019-03-19 09:03:32	00:30:22	2019-03-19 09:11:54	2019-03-19 09:11:54
		2019-03-19 09:33:54		2019-03-19 09:12:57	2019-03-19 09:12:57
5	319080164	2019-03-19 09:03:32	00:28:27	2019-03-19 09:14:38	2019-03-19 09:14:38
		2019-03-19 09:31:59		2019-03-19 09:16:05	2019-03-19 09:16:05
6	319080165	2019-03-19 09:03:32	00:24:20	2019-03-19 09:17:37	2019-03-19 09:17:37
		2019-03-19 09:32:03		2019-03-19 09:18:34	2019-03-19 09:18:34
7	319080166	2019-03-19 09:03:32	00:28:54	2019-03-19 09:20:31	2019-03-19 09:20:31
		2019-03-19 09:27:52		2019-03-19 09:21:26	2019-03-19 09:21:26
8	319080167	2019-03-19 09:03:32	00:28:54	2019-03-19 09:22:58	2019-03-19 09:24:05
		2019-03-19 09:32:26		2019-03-19 09:24:05	2019-03-19 09:26:01



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**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	Min Qi	Max Qi	Avg. Qi
Q1	5.34	6.27	39.33	36.36	75.02	30.73	55.41	48.74	15.74	5.34	75.02	34.77
Q2	1.47	14.99	11.59	7.64	10.13	10.47	7.84	16.27	9.74	1.47	16.27	10.02
Q3	8.03	66.02	18.77	8.97	8.20	59.56	37.75	77.30	44.34	8.03	77.30	36.55
Q4	8.44	9.05	67.58	52.91	46.33	83.75	54.94	43.72	52.48	8.44	83.75	46.58
Q5	9.66	56.80	72.74	45.77	72.52	84.22	82.95	58.81	65.75	9.77	84.22	61.02
Q6	0.34	6.27	4.25	16.97	8.91	10.05	10.77	12.70	25.75	0.34	25.75	10.67
Q7	5.89	48.30	31.50	66.03	27.50	30.55	46.75	36.06	34.92	5.89	66.03	36.39
Q8	8.33	203.50	267.32	97.22	101.38	125.17	86.33	99.47	110.08	8.33	267.32	122.09
Q9	25.55	46.53	74.95	225.38	227.69	54.75	200.97	101.13	107.50	25.55	227.69	118.27
Q10	5.73	134.53	77.80	77.17	105.64	60.44	84.74	87.14	67.66	5.73	134.53	77.87
Q11	14.49	41.56	16.88	24.11	38.77	24.56	52.86	54.44	21.84	14.49	54.44	32.17
Q12	3.19	37.77	63.00	4.11	36.10	72.99	65.42	67.61	36.20	3.19	72.99	42.93
Q13	37.91	110.44	89.06	43.50	55.52	168.96	137.16	97.66	177.31	37.91	177.31	101.95
Q14	3.03	47.03	5.25	6.86	6.58	9.28	6.52	8.06	9.55	3.03	47.03	11.35
Q15	3.28	11.02	14.88	6.88	13.64	23.39	37.81	6.66	8.63	3.28	37.81	14.02
Q16	4.53	10.83	62.19	5.11	17.66	30.45	58.94	75.41	26.08	4.53	75.41	32.36
Q17	4.08	87.75	90.31	61.74	85.31	85.89	8.86	38.11	40.78	4.08	90.31	55.87
Q18	35.97	214.46	191.22	272.71	476.83	402.94	302.91	230.85	216.39	35.97	476.83	260.48
Q19	1.74	66.41	126.88	61.80	105.63	73.13	33.69	80.11	71.17	1.74	126.88	68.95
Q20	5.20	48.70	83.58	38.83	5.06	15.97	61.81	41.66	46.08	5.06	83.58	38.54
Q21	24.80	215.31	146.61	148.02	151.11	198.66	208.00	130.06	122.20	24.80	215.31	149.42
Q22	6.31	319.50	19.30	464.93	145.58	49.42	67.33	46.52	422.89	6.31	464.93	171.31
RF1	42.31	59.38	84.36	62.89	63.44	87.81	57.34	55.30	67.26	42.31	87.81	64.45
RF2	56.15	105.19	89.18	98.26	100.02	90.72	116.30	91.29	115.78	56.15	116.30	95.88