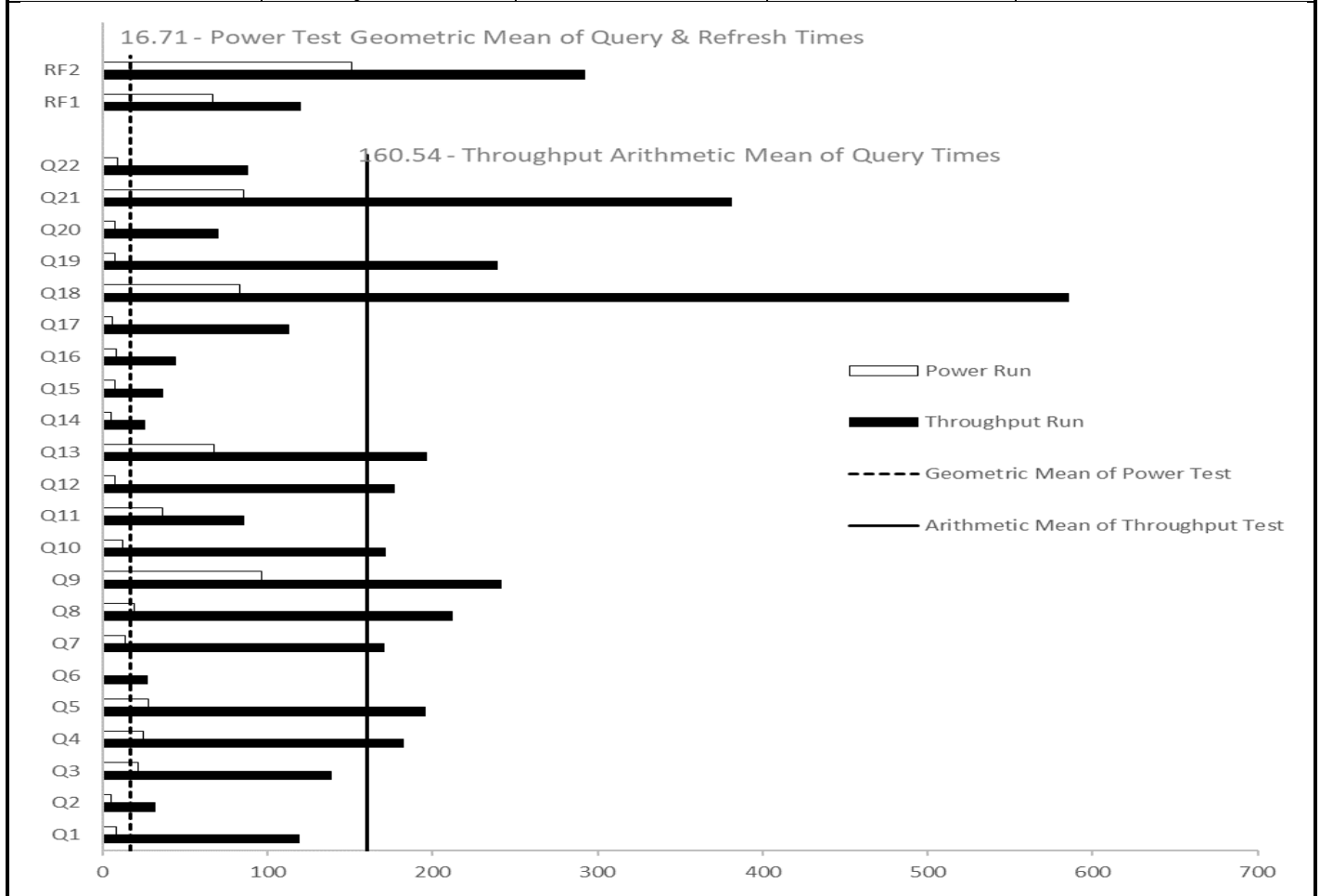
 <b>Hewlett Packard Enterprise</b>		<b>HPE ProLiant DL380 Gen11</b>		TPC-H Rev. 3.0.1 TPC Pricing Rev. 2.8.0	
				Report Date: Feb 8, 2023	
Total System Cost		Composite Query per Hour Rating		Price/Performance	
<b>\$1,666,967 USD</b>		<b>2,028,444.2</b> QphH @ 10,000GB		<b>\$821.80 USD</b> \$/kQphH @ 10,000GB	
Database Size	Database Manager	Operating System	Other Software	Availability Date	
<b>10,000GB</b>	<b>Microsoft® SQL Server 2022 Enterprise Edition</b>	<b>Windows Server 2022</b>	<b>None</b>	<b>May 01, 2023</b>	



Database Load Time = 00d 10h 02m 25s	<b>Storage Redundancy Level</b>	
Load included backup: <b>Y</b>	Base Tables and Auxiliary Data Structures	<b>No RAID</b>
Total Data Storage / Database Size = 6.05	DBMS Temporary Space	<b>No RAID</b>
Memory/Database Size = <b>61.44%</b>	OS, DBMS Software and Transaction Log	<b>RAID 1</b>

System Components	System Total
Nodes:	1
Intel Xeon-P 8490H @ 1.9GHz:	2
Cores/Threads:	120/240
Memory:	6,144 GiB
6.4TB NVMe Drives	10
HPE NS204i-u Gen11 Boot Controlle w/ 2 x 480GB Drives	1
MR416i-p Tri-mode controller	1
MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	1
<b>Total Storage:</b>	<b>60,498.71 GiB</b>



# HPE ProLiant DL380 Gen11

TPC-H Rev. 3.0.1  
TPC Pricing Rev. 2.8.0

Report Date: Feb 08, 2023

Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price	
<b>Server Hardware</b>							
HPE ProLiant DL380 Gen11 Plus 8SFF NC CTO Server	1	P52534-B21	\$4,409	1	\$4,409		
Intel Xeon-Platinum 8490H 1.9GHz 60-core 350W Processor for HPE	1	P49630-B21	\$45,900	2	\$91,800		
HPE DL380/DL560 G11 High Perf 2U HS Kit	1	P48818-B21	\$233	2	\$466		
HPE 256GB 8RX4 PC5-4800B-R 3DS Smart Kit	1	P43337-B21	\$38,039	24	\$912,936		
HPE DL380/DL560 G11 2U High Perf Fan Kit	1	P48820-B21	\$972	1	\$972		
HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	1	P38997-B21	\$685	1	\$685		
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adapter for H	1	P42044-B21	\$1,398	1	\$1,398		
Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter for HPE	1	P21106-B21	\$1,102	1	\$1,102		
HPE 3 Year Tech Care Essential ProLiant DL380 Gen 11 Service	1	HY4Z5E	\$6,064	1		\$6,064	
HPE USB US Keyboard/Mouse Kit	1	631341-B21	\$32	3	\$96		
HPE 42U 800mmx1075mm G2 Enterprise Pallet Rack	1	P9K41A	\$4,026	1	\$4,026		
HPE G2 Basic 2.8kVA/L5-30P 24A/120V Outlets (22) 5-20R/Vertical NA/JP PD	1	P9Q34A	\$473	1	\$473		
			<b>Subtotal</b>		<b>\$1,018,363</b>	<b>\$6,064</b>	
<b>Storage</b>							
HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device	1	P12965-B21	\$1,845	1	1845		
HPE MR416i-p Gen11 SPDM Storage Cntrl	1	P47777-B21	\$3,955	1	3955		
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF BC U.3 PM1735a S	1	P50233-B21	\$12,250	10	122500		
HPE DL380 Gen11 8NVMe Bal FIO Kit	1	P53633-B21	\$1	1	1		
HPE DL380 Gen11 8NVMe CPU1/2 Cable Kit	1	P48825-B21	\$2,127	1	2127		
HPE DL380 Gen11 8SFF U.3 Prem Kit	1	P48814-B21	\$416	1	416		
HPE DL380 G11 2SFF U.3 Prim/Sec Cage Kit	1	P48810-B21	\$485	2	970		
			<b>Subtotal</b>		<b>\$131,814</b>	<b>\$0</b>	
<b>Other</b>							
HP V22v G5 FHD Monitor	3	V9E67AA#ABA	\$130	3	\$390		
			<b>Subtotal</b>		<b>\$390</b>	<b>\$0</b>	
<b>Server Software</b>							
SQL Server 2022 Enterprise Edition (2 core license)	2	NA	\$15,123.00	60	\$907,380	Included	
Microsoft Problem Resolution Services	2	NA	\$259.00	1		\$259.00	
Windows Server 2022 Standard Edition	2	NA	\$123	60	\$7,380		
			<b>Subtotal</b>		<b>\$914,760</b>	<b>\$259</b>	
			<b>Total Extended Price</b>		<b>\$2,065,327</b>	<b>\$6,323</b>	
			<b>Total Discounts</b>		<b>\$402,561</b>	<b>\$2,122</b>	
<b>Price Key: 1 - HPE , 2 - Microsoft. 3 - Hewlett Packard Inc. Audited by Doug Johnson of InfoSizing (www.sizing.com)</b>					<b>Grand Total</b>	<b>\$1,662,766</b>	<b>\$4,201</b>
All discounts are based on US list prices and for similar quantities and configurations. A <b>35% discount</b> 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>\$1,666,967</b>	
					<b>QpH @ 10000GB:</b>	<b>2,028,444.20</b>	
					<b>\$ USD/kQpH @ 10000GB</b>	<b>\$821.80</b>	



**Hewlett Packard  
Enterprise**

# HPE ProLiant DL380 Gen11

TPC-H Rev. 3.0.1  
TPC Pricing Rev. 2.8.0

Report Date:  
Feb 08, 2023

## Numerical Quantities

### Measurement Results

Database Scale Factor	10,000
Total Data Storage / Database Size	6.05
Percentage Memory / Database Size	61.44%
Start of Database Load	2023-02-01 12:36:27
End of Database Load	2023-02-01 22:59:38
Database Load Time	00d 10h 02m 25s
Query Streams for Throughput Test	9
TPC-H Power	2,154,194.6
TPC-H Throughput	1,910,034.4
TPC-H Composite Query-per-Hour (QphH@10,000GB)	2,028,444.2
Total System Price over 3 Years (\$ USD)	\$1,666,967
TPC-H Price/Performance Metric (\$ USD / kQphH@10,000GB)	\$821.80

### Measurement Interval

Measurement Interval in Throughput Test 3,731.9 seconds

### Duration of Stream Execution

Power Run	Seed	Query Start Time	Total Time	RF1 Start Time	RF2 Start Time
		Query End Time	(hh:mm:ss)	RF1 End Time	RF2 End Time
201225938	201225938	2023-02-01 23:19:10	00:09:24	2023-02-01 23:18:03	2023-02-01 23:28:35
		2023-02-01 23:28:34		2023-02-01 23:19:10	2023-02-01 23:31:05
Throughput Stream	Seed	Query Start Time	Total Time	RF1 Start Time	RF2 Start Time
		Query End Time	(hh:mm:ss)	RF1 End Time	RF2 End Time
1	201225939	2023-02-01 23:31:05	00:57:49	2023-02-01 23:31:04	2023-02-01 23:33:23
		2023-02-02 00:28:54		2023-02-01 23:33:23	2023-02-01 23:37:48
2	201225940	2023-02-01 23:31:05	00:58:10	2023-02-01 23:37:48	2023-02-01 23:39:45
		2023-02-02 00:29:15		2023-02-01 23:39:45	2023-02-01 23:43:41
3	201225941	2023-02-01 23:31:05	00:58:25	2023-02-01 23:43:41	2023-02-01 23:45:53
		2023-02-02 00:29:30		2023-02-01 23:45:52	2023-02-01 23:50:06
4	201225942	2023-02-01 23:31:05	01:01:08	2023-02-01 23:50:06	2023-02-01 23:51:59
		2023-02-02 00:32:13		2023-02-01 23:51:59	2023-02-01 23:56:05
5	201225943	2023-02-01 23:31:05	01:02:12	2023-02-01 23:56:05	2023-02-01 23:58:13
		2023-02-02 00:33:17		2023-02-01 23:58:13	2023-02-02 00:03:08
6	201225944	2023-02-01 23:31:05	01:00:54	2023-02-02 00:03:08	2023-02-02 00:04:56
		2023-02-02 00:31:59		2023-02-02 00:04:56	2023-02-02 00:09:11
7	201225945	2023-02-01 23:31:05	00:59:22	2023-02-02 00:09:11	2023-02-02 00:10:50
		2023-02-02 00:30:27		2023-02-02 00:10:50	2023-02-02 00:16:32
8	201225946	2023-02-01 23:31:05	00:59:17	2023-02-02 00:16:32	2023-02-02 00:18:46
		2023-02-02 00:30:22		2023-02-02 00:18:46	2023-02-02 00:24:56
9	201225947	2023-02-01 23:31:05	00:52:37	2023-02-02 00:24:56	2023-02-02 00:26:45
		2023-02-02 00:23:42		2023-02-02 00:26:44	2023-02-02 00:32:53

**TPC-H Timing Intervals (in seconds):**

Stream ID	0	1	2	3	4	5	6	7	8	9	QI Min	QI Avg	QI Max
Q1	8.25	80.00	131.38	113.18	14.10	224.75	77.87	114.52	184.91	132.45	8.25	108.14	224.75
Q2	5.46	31.01	26.55	47.66	36.84	36.73	42.37	30.47	13.26	22.43	5.46	29.28	47.66
Q3	21.99	84.90	198.96	40.20	76.34	179.54	198.69	184.21	114.37	172.34	21.99	127.15	198.96
Q4	24.95	78.68	93.67	120.55	375.16	180.76	119.82	215.29	116.03	341.80	24.95	166.67	375.16
Q5	28.16	193.36	273.15	138.59	139.27	159.54	271.34	131.79	283.85	170.10	28.16	178.92	283.85
Q6	0.75	24.36	6.20	27.17	41.19	26.70	40.58	26.85	24.33	27.43	0.75	24.56	41.19
Q7	14.06	332.63	107.38	208.48	100.58	115.70	339.32	107.73	102.48	121.70	14.06	155.01	339.32
Q8	19.54	283.94	180.21	138.35	235.89	271.26	215.53	149.15	292.00	140.47	19.54	192.63	292.00
Q9	96.41	140.29	166.75	363.14	251.35	72.55	340.10	335.83	198.27	305.18	72.55	226.99	363.14
Q10	12.43	233.23	155.88	150.03	209.60	66.60	156.83	130.13	261.41	178.93	12.43	155.51	261.41
Q11	36.64	74.63	58.90	51.93	155.23	163.89	77.13	78.85	40.85	66.09	36.64	80.41	163.89
Q12	7.40	119.17	363.13	301.50	52.34	214.23	367.21	83.33	61.43	31.62	7.40	160.14	367.21
Q13	67.73	263.88	158.06	267.86	128.25	130.38	187.38	284.72	206.60	138.08	67.73	183.29	284.72
Q14	4.92	23.59	31.53	18.95	38.24	20.11	27.73	16.64	29.22	25.77	4.92	23.67	38.24
Q15	7.73	38.03	24.90	12.82	39.11	54.58	68.67	41.97	38.53	12.51	7.73	33.89	68.67
Q16	8.17	54.38	41.18	30.71	35.71	64.73	76.33	20.44	21.88	54.64	8.17	40.82	76.33
Q17	6.04	145.03	61.44	46.24	162.07	72.88	176.25	73.49	190.39	85.56	6.04	101.94	190.39
Q18	83.48	460.60	781.22	437.17	805.24	738.46	320.62	718.80	678.97	330.29	83.48	535.49	805.24
Q19	7.53	289.39	173.96	235.56	277.26	325.08	277.93	214.60	172.18	184.32	7.53	215.78	325.08
Q20	7.82	77.72	68.21	134.11	14.56	48.62	48.55	41.90	94.56	99.78	7.82	63.58	134.11
Q21	85.22	402.58	281.45	495.56	451.55	424.32	171.58	420.86	349.94	429.63	85.22	351.27	495.56
Q22	9.04	37.10	105.39	124.26	27.14	140.31	51.75	139.76	80.60	84.85	9.04	80.02	140.31
RF1	66.60	137.75	117.12	131.46	112.90	128.13	107.99	98.72	134.12	108.20	66.60	114.30	137.75
RF2	150.71	264.78	235.56	253.69	245.48	294.48	255.12	342.08	369.66	368.49	150.71	278.01	369.66