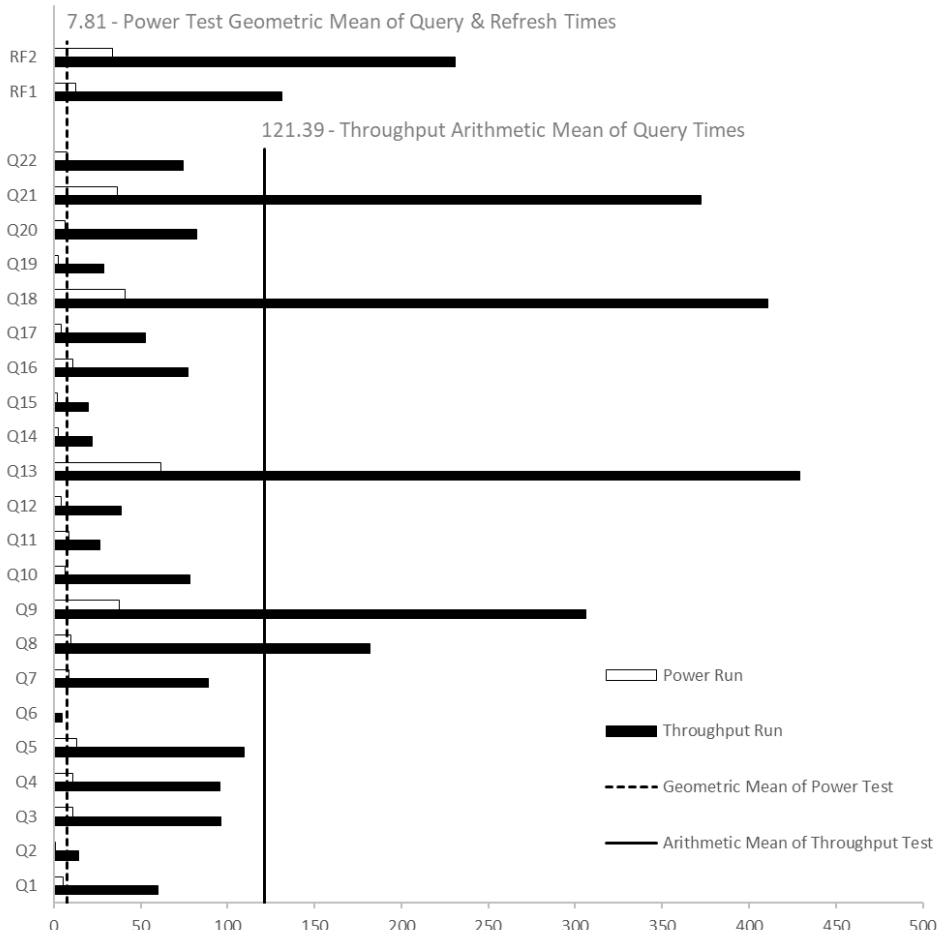


Hewlett Packard Enterprise		HPE ProLiant DL345 Gen11 (with AMD EPYC 9175F Processor)		TPC-H Rev. 3.0.1 TPC Pricing Rev. 2.9.0
Total System Cost		Composite Query per Hour Rating		Report Date: Sept 15,2025
\$229,527 USD		951,753.0 QphH @ 3,000GB		\$241.17 USD \$/ kQphH @ 3,000GB
Database Size	Database Manager	Operating System	Other Software	Availability Date
3,000GB	Microsoft® SQL Server 2022 Enterprise Edition	Microsoft Windows Server 2022	None	Sept 15,2025



Database Load Time = 0d 2h 11m 36s	Storage Redundancy Level	
Load included backup: Y	Base Tables and Auxiliary Data Structures	No RAID
Total Data Storage / Database Size = 12.22	DB Root, transaction log, DB Backup	No RAID
Memory/Database Size = 51.2%	OS	Hardware RAID 1

System Components	System Total
Nodes:	1
AMD® EPYC 9175F @ 4.2 GHz:	1
Cores/Threads:	16/32
Memory:	1536 GiB
3.84TB NVMe Drives	10
RAID1 Boot Controller with 480GB M.2 NVMe	2
Total Storage: 36,656.86 GiB	

 Hewlett Packard Enterprise	HPE ProLiant DL345 Gen11		TPC-H Rev. 3.0.1 TPC Pricing Rev. 2.9.0			
			Report Date: Sept 15,2025			
Description	PriceKey	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price
Server Hardware						
HPE DL345 Gen11 8SFF CTO Server	1	P54207-B21	\$4,200	1	\$4,200	
AMD EPYC 9175F CPU for HPE	1	P73376-B21	\$7,661	1	\$7,661	
HPE DL3X5 Gen11 Max Perf 2U Heat Sink Kit	1	P58459-B21	\$256	1	\$256	
HPE DL3X5 2Y Perf FAN KIT	1	P58465-B21	\$160	1	\$160	
HPE 128GB 4Rx4 PC5-6400B-R 3DS Smart Kit	1	P64988-B21	\$11,676	12	\$140,112	
HPE 1600W FS Plat Ht Plug LH PS Kit	1	P38997-B21	\$890	2	\$1,780	
MLX MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 Adptr	1	B42044-B21	\$1,500	1	\$1,500	
Add to Rack 48U 600mmx1075mm G2 Advanced Pallet	1	P9K19A	\$3,023	1	\$3,023	
HPE 3 Year Total Care Essential for DL345 Gen11	1	H78X5E	\$3,962	1		\$3,962
Subtotal					\$158,692	\$3,962
Storage						
HPE 3.84TB NVMe RI E3S EC1 PM1743 SSD	1	P57799-B21	\$7,050	10	\$70,500	
NS204i-u Gen11 OS Boot, RAID 1	1	P48183-B21	\$1,994	1	\$1,994	
HPE DL3X5 Gen11 Ht Pg Boot Opt Dev	1	P57013-B21	\$83	1	\$83	
HPE DL345 Gen11 20EDSFF x4 FIO Kit	1	P64383-B21	\$1,192	1	\$1,192	
HPE DL345 Gen11 2SFF x4 TM BC Kit	1	P57110-B21	\$756	1	\$756	
HPE Gen 11 EI Rail Kit	1	P52351-B21	\$141	1	\$141	
HPE DL345G11 Standard Riser	1	standardDL345G11Riser incld		1		
Subtotal					\$74,666	\$0
Other						
HP Series 5 23.8 inch FHD White Monitor + Wireless Mouse and Keyboard Bundle	3	94C21AA/3 ML04AA	\$140	3	\$420	
Subtotal					\$420	\$0
Software Components						
SQL Server 2022 Enterprise Edition (2 core license)	2	N/A	\$15,123	8	\$120,984	
Microsoft Problem Resolution Services	2	N/A	\$259	1		\$259
Windows Server 2022 Standard Edition (16 core license)	2	N/A	1,069	1	1,069	
Subtotal					\$122,053	\$259
Total Extended Price					\$355,831	\$4,221
Total Discounts					\$128,346	\$2,179
Price Key: 1 - HPE , 2 – Microsoft, 3 – Hewlett Packard Inc.		Grand Total				
Audited by Doug Johnson of InfoSizing (www.sizing.com)		\$227,485				\$2,042
All discounts are based on US list prices and for similar quantities and configurations. A 55% 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:				\$229,527
		QphH @ 3,000GB :				951,753.0
		\$ USD/QphH @ 3,000GB				\$241.17
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.						

 Hewlett Packard Enterprise	HPE ProLiant DL345 Gen11		TPC-H Rev. 3.0.1 TPC Pricing Rev. 2.9.0		
			Report Date: Sept 15,2025		
Numerical Quantities					
Measurement Results					
Database Scale Factor			3,000		
Total Data Storage / Database Size			12.22		
Percentage Memory / Database Size			51.2%		
Start of Database Load			2025-08-20 06:19:08		
End of Database Load			2025-08-20 08:34:12		
Database Load Time			00d 02h 11m 36s		
Query Streams for Throughput Test			8		
TPC-H Power			1,382,602.2		
TPC-H Throughput			655,165.9		
TPC-H Composite Query-per-Hour (QphH@3,000GB)			951,753.0		
Total System Price over 3 Years (\$ USD)			\$229,527		
TPC-H Price/Performance Metric (\$ USD / kQphH@3,000GB)			\$241.17		
Measurement Interval					
Measurement Interval in Throughput Test			2,901.25 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
	820083412	2025-08-20 09:29:14	00:04:57	2025-08-20 09:29:00	2025-08-20 09:34:13
	2025-08-20 09:34:11	2025-08-20 09:29:12		2025-08-20 09:34:47	
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	820083413	2025-08-20 09:34:46	00:44:25	2025-08-20 09:34:46	2025-08-20 09:37:00
		2025-08-20 10:19:11		2025-08-20 09:37:00	2025-08-20 09:42:37
2	820083414	2025-08-20 09:34:46	00:44:45	2025-08-20 09:42:37	2025-08-20 09:44:41
		2025-08-20 10:19:31		2025-08-20 09:44:41	2025-08-20 09:51:32
3	820083415	2025-08-20 09:34:46	00:45:47	2025-08-20 09:51:32	2025-08-20 09:53:37
		2025-08-20 10:20:33		2025-08-20 09:53:37	2025-08-20 09:59:50
4	820083416	2025-08-20 09:34:46	00:44:38	2025-08-20 09:59:50	2025-08-20 10:07:41
		2025-08-20 10:19:24		2025-08-20 10:07:41	2025-08-20 10:13:41
5	820083417	2025-08-20 09:34:46	00:45:28	2025-08-20 10:13:41	2025-08-20 10:16:21
		2025-08-20 10:20:14		2025-08-20 10:16:21	2025-08-20 10:20:44
6	820083418	2025-08-20 09:34:46	00:40:02	2025-08-20 10:20:44	2025-08-20 10:20:58
		2025-08-20 10:14:48		2025-08-20 10:20:58	2025-08-20 10:21:32
7	820083419	2025-08-20 09:34:46	00:45:39	2025-08-20 10:21:33	2025-08-20 10:21:45
		2025-08-20 10:20:25		2025-08-20 10:21:45	2025-08-20 10:22:21
8	820083420	2025-08-20 09:34:46	00:45:28	2025-08-20 10:22:21	2025-08-20 10:22:33
		2025-08-20 10:20:14		2025-08-20 10:22:33	2025-08-20 10:23:08



TPC-H Timing Intervals (in seconds):

Stream ID	0	1	2	3	4	5	6	7	8	QI Min	QI Avg	QI Max
Q1	5.69	50.41	53.07	54.74	50.68	56.61	52.41	105.74	54.70	5.69	53.78	105.74
Q2	1.00	16.26	15.57	11.50	12.07	16.02	12.25	14.55	15.38	1.00	12.73	16.26
Q3	11.15	128.85	78.62	46.71	79.55	147.79	91.77	105.46	89.51	11.15	86.60	147.79
Q4	11.08	80.66	91.90	90.38	86.01	125.61	79.70	88.78	120.10	11.08	86.02	125.61
Q5	13.16	136.15	89.61	110.90	112.51	114.48	95.88	101.63	113.35	13.16	98.63	136.15
Q6	0.25	3.75	0.38	18.36	2.83	3.86	4.61	1.97	3.69	0.25	4.41	18.36
Q7	8.86	94.25	88.47	94.20	79.67	93.85	74.09	72.87	116.27	8.86	80.28	116.27
Q8	10.08	174.80	133.94	179.49	161.10	207.10	185.82	187.79	225.00	10.08	162.79	225.00
Q9	37.92	365.18	355.06	311.42	376.76	231.94	243.04	261.71	305.80	37.92	276.54	376.76
Q10	6.61	112.41	59.02	95.41	98.84	60.00	61.34	57.52	82.27	6.61	70.38	112.41
Q11	8.99	50.97	26.06	23.82	26.05	22.66	24.40	21.56	16.50	8.99	24.56	50.97
Q12	4.20	37.33	67.28	20.36	38.56	55.47	36.48	11.80	42.96	4.20	34.94	67.28
Q13	61.87	387.39	452.60	455.22	488.76	448.69	292.61	487.87	419.23	61.87	388.25	488.76
Q14	2.39	19.89	20.60	20.75	20.96	20.44	41.04	10.55	23.08	2.39	19.97	41.04
Q15	2.20	21.24	22.02	18.41	25.05	22.35	21.66	6.30	21.84	2.20	17.90	25.05
Q16	10.78	78.34	92.59	75.92	80.99	94.58	58.64	44.70	90.96	10.78	69.72	94.58
Q17	4.55	39.21	47.05	93.52	48.76	37.47	44.05	69.63	43.49	4.55	47.53	93.52
Q18	41.17	354.28	524.37	361.93	345.95	460.53	420.06	469.89	351.75	41.17	369.99	524.37
Q19	2.56	24.36	29.60	26.63	32.87	27.16	27.58	34.18	28.45	2.56	25.93	34.18
Q20	6.69	84.96	85.78	81.15	77.74	66.65	91.00	83.11	88.59	6.69	73.96	91.00
Q21	36.38	324.09	280.83	461.68	367.49	324.03	384.31	435.81	399.70	36.38	334.92	461.68
Q22	7.84	79.71	69.35	93.64	63.37	90.10	58.28	64.65	74.46	7.84	66.82	93.64
RF1	12.47	132.81	123.58	124.94	470.70	159.89	13.74	12.77	12.18	12.18	118.12	470.70
RF2	34.05	337.44	411.08	372.27	360.08	262.70	34.75	35.33	35.02	34.05	209.19	411.08