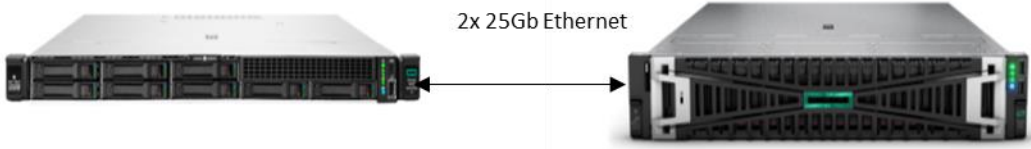
 <b>Hewlett Packard Enterprise</b>	<b>HPE DL345 Gen11</b>		TPC-E™ 1.14.0 TPC Pricing 2.8.0
			Report Date: May 8, 2023 Revision Date: May 8, 2023
TPC-E Throughput <b>12,054.79</b> tpsE™	Price/Performance <b>\$78.95</b> USD per tpsE	Availability Date <b>May 8, 2023</b>	Total System Cost <b>951,612</b> USD
<b>Database Server Configuration</b>			
Operating System <b>Microsoft® Windows Server® 2022 Standard Edition</b>	Database Manager <b>Microsoft SQL Server® 2022 Enterprise Edition</b>	Processors/Cores/Threads <b>1/96/192</b>	Memory <b>1,536 GB</b>
<div style="display: flex; justify-content: space-around; align-items: center;">  </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>Tier-A (Client)</b>            1x HPE DL325 Gen10 Plus V2:</p> <ul style="list-style-type: none"> <li>• 1x 7543P (32C) Processor</li> <li>• 8x32GB DDR4 3200MHz (256 GB total)</li> <li>• 2xM.2 240GB Sata NVMe (O/S)</li> <li>• 8x 7.6 TB NVMe (Samsung) Flat Files and Backup of DB.</li> <li>• 2xDual Port Broadcom 25 GbE Network Card (workload traffic)</li> <li>• 1xIntel Eth Adptr I350T4 OCPv3</li> </ul> </div> <div style="width: 45%;"> <p><b>HPE DL345 Gen11 (Tier-B):</b></p> <ul style="list-style-type: none"> <li>• 1x 9654P (96 core ) processor</li> <li>• 12x128GB DDR4 4800MHz (1.5 TB total)</li> <li>• 1x MR416i-o               <ul style="list-style-type: none"> <li>• 2x 3.2 TB NVMe drives RAID-1 O/S</li> <li>• 4x 3.2 TB NVMe drives RAID-1 Database Logs/master Database file/tempdb runtime</li> <li>• 2x 7.68 TB NVMe drives Raid-0 tempdb during build</li> </ul> </li> <li>• 2x MR416i-p each with               <ul style="list-style-type: none"> <li>• 8x 7.6 TB NVMe drives (Raid-5) containing 2 Logical Volumes</li> </ul> </li> <li>• 1xDual Port Broadcom 25 GbE Network Card (workload traffic)</li> <li>• 1xIntel Eth Adptr I350T4 OCPv3</li> </ul> </div> </div>			
Initial Database Size <b>49,687 GB</b>	Redundancy Level: 1 RAID-10: Log, tempdb Raid-5: Data	Storage: 4x 3.2TB 2.5" NVMe 2x 3.2TB 2.5" NVMe 16x 7.68 TB 2.5" NVMe	



**Hewlett Packard  
Enterprise**


## HPE DL345 Gen11

TPC-E™ 1.14.0  
TPC Pricing 2.8.0

Report Date: May 8, 2023  
Revision Date: May 8, 2023

Availability Date:  
May 8, 2023

Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price
<b>Server Hardware</b>						
HPE DL345 Gen11 24SFF CTO Svr	1	P54206-B21	\$3,556	1	\$3,556	
AMD EPYC 9654P CPU for HPE	1	P53597-B21	\$22,951	1	\$22,951	
HPE DL3X5 Gen11 Perf 2U Heat Sink Kit	1	P58459-B21	\$256	1	\$256	
HPE 128GB 4Rx4 PC5-4800B-R 3DS Smart Kit	1	P50313-B21	\$10,999	12	\$131,988	
BCM 57414 10/25GbE 2p SFP28 Adptr	1	P26262-B21	\$1,184	1	\$1,184	
INT I350 1GbE 4p BASE-T OCP3 Adptr	1	P08449-B21	\$958	1	\$958	
HPE 1600W FS Plat Ht Plg LH PS Kit	1	P38997-B21	\$685	2	\$1,370	
HPE DL3X5 Gen11 2U Perf Fan Kit	1	P58465-B21	\$160	6	\$960	
MR416i-o Gen11 SPDM Storage Cntrl	1	P47781-B21	\$3,586	1	\$3,586	
MR416i-p Gen11 SPDM Storage Cntrl	1	P47777-B21	\$3,955	2	\$7,910	
HPE Gen 11 EI Rail Kit 2	1	P52351-B21	\$141	1	\$141	
HPE DL345 G11 4PCIE Enablement Kit	1	P57116-B21	\$666	1	\$666	
HPE 3Y TC Ess DL345 GEN11 SVC	1	H78X5E	\$3,445	1		\$3,445
		<b>Subtotal</b>			<b>\$175,526</b>	<b>\$3,445</b>
<b>Server Storage</b>						
HPE 3.2TB NVMe MU SFF BC U.3 PM1735a SSD	1	P50230-B21	\$6,476	6	\$38,856	
HPE 7.68 TB NVMe MU SFF BC U.3 PM1735a SSD	1	P50222-B21	\$13,900	16	\$222,400	
		<b>Subtotal</b>			<b>\$261,256</b>	<b>\$0</b>
<b>Server Software</b>						
Windows Server 2022 Standard Editions (16 Core license)	4		\$1,069	6	\$6,414	
Microsoft SQL Server 2022 Standard Edition (2 core license)	4		\$15,123	48	\$725,904	
Microsoft Problem Resolution Services (1 Incident)	4		\$259	1		\$259
		<b>Subtotal</b>			<b>\$732,318</b>	<b>\$259</b>
<b>Client Hardware</b>						
HPE DL325 G10+ v2 8SFF CTO Svr	1	P38471-B21	\$1,979	1	\$1,979	
AMD EPYC 7543P CPU for HPE	1	P38717-B21	\$4,387	1	\$4,387	
HPE 32GB 1Rx4 PC4-3200AA-R Smart Kit	1	P38454-B21	\$1,661	8	\$13,288	
HPE Universal SATA 6G AIC HHHL M.2 SSD Enablement Kit	1	878783-B21	\$181	1	\$181	
HPE 240GB SATA 6G Read Intensive M.2 Multi Vendor SSD	1	P47817-B21	\$796	2	\$1,592	
BCM 57414 10/25GbE 2p SFP28 Adptr	1	P26262-B21	\$1,184	2	\$2,368	
INT I350 1GbE 4p BASE-T OCP3 Adptr	1	P08449-B21	\$958	1	\$958	
HPE 500W FS Plat Ht Plg LH Pwr Sply Kit	1	865408-B21	\$175	2	\$350	
HPE DL325 G10+ v2 Stnd FIO Fan Kit	1	P41471-B21	\$117	1	\$117	
HPE DL325 G10+ v2 High Perf FIO HS Kit	1	P41197-B21	\$95	1	\$95	
HPE DL300 G10+ 1U SFF Easy Inst Rail Kit	1	P26485-B21	\$214	1	\$214	
HPE 3Y TC Essential DL325 GEN10PLUSHWSVC	1	H29VGE	\$2,179	1		\$2,179
		<b>Subtotal</b>			<b>\$25,529</b>	<b>\$2,179</b>
<b>Client Software</b>						
Windows Server 2022 Standard Edition (16 Core license)	4		\$1,069	2	\$2,138	
		<b>Subtotal</b>			<b>\$2,138</b>	<b>\$0</b>
<b>Infrastructure</b>						
HP V22v G5 FHD Monitor (1 + 2 spare)	3	65P56AA#ABA	\$ 129.99	3	\$ 389.97	
HP 225 Wired Mouse and Keyboard Combo	3	286J4UT#ABA	\$21	3	\$63	
HPE 25Gb SFP28 to SFP28 3m Direct Attach Copper Cable, 2 + 2 spare	1	844477-B21	\$392	4	\$1,568	
HPE 42U 800x1075mm Adv G2 Kit Pilt Rack	1	P9K41A	\$4,026	1	\$4,026	
HPE G2 Basic 3Ph 8.6kVA/L15-30P 24A/208V Outlets (18) C13/Vertical NA/JP PDU	1	P9Q54A	\$583	1	\$583	
		<b>Subtotal</b>			<b>\$6,630</b>	<b>\$0</b>
<b>Total Extended Price</b>					<b>\$1,203,397</b>	<b>\$5,883</b>
<b>Total Discounts</b>					<b>\$257,668</b>	<b>\$0</b>
<b>Price Key: 1 - HPE 2 - fs.com 3 hp.factoryoutletstore.com 4. Microsoft Audited by Doug Johnson of Sizing.com</b>					<b>Grand Total</b>	<b>\$945,729</b>
<p>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.</p>					<b>3 year cost of ownership USD:</b>	<b>\$951,612</b>
					<b>TPC-E throughput, tps E:</b>	<b>12,054.79</b>
					<b>\$ USD/tps E:</b>	<b>\$78.95</b>
<p>Sales contact: HPE WW Headquarters, 3000 Hanover St., Palo Alto, CA 94304-1185 (650) 857-1501 or HPE: 855-472-5233 Microsoft Corporatin, One Microsoft Way, Redmond, WA 98052-6399 (425) 882 8080</p>						
<p>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.</p>						

 <b>Hewlett Packard Enterprise</b>	<b>HPE DL345 Gen11</b>		TPC-E™ 1.14.0 TPC Pricing 2.8.0	
			Report Date: May 8, 2023 Revision Date: May 8, 2023	
			Availability Date: May 8,2023	
<b>Numerical Quantities Summary</b>				
Reported Throughput 12054.79 tpsE		Configured Customers 6,050,000		
<b>Response Time (in seconds)</b>		<b>90th</b>		
		<b>Minimum</b>	<b>Average</b>	<b>Percentile</b>
Broker-Volume	0.01	0.01	0.01	0.60
Customer-Position	0.01	0.01	0.01	1.30
Market-Feed	0.01	0.01	0.01	2.84
Market-Watch	0.01	0.01	0.01	0.45
Security-Detail	0.01	0.01	0.01	0.34
Trade-Lookup	0.01	0.03	0.05	1.53
Trade-Order	0.01	0.01	0.04	2.77
Trade-Result	0.01	0.01	0.02	9.78
Trade-Status	0.01	0.01	0.01	1.21
Trade-Update	0.01	0.03	0.05	0.92
Data-Maintenance	0.01	0.01	N/A	0.02
<b>Transaction Mix</b>		<b>Transaction Count</b>		<b>Mix %</b>
Broker-Volume	42,522,427		4.900%	
Customer-Position	112,814,803		13.000%	
Market-Feed	8,679,453		1.000%	
Market-Watch	156,205,307		18.000%	
Security-Detail	121,493,133		14.000%	
Trade-Lookup	69,424,422		8.000%	
Trade-Order	87,648,313		10.100%	
Trade-Result	86,794,522		10.001%	
Trade-Status	164,883,613		19.000%	
Trade-Update	17,356,072		2.000%	
Data-Maintenance	120		N/A	
<b>Test Duration and Timings</b>				
Ramp-up Time (hh:mm:ss)			0:22:00	
Measurement Interval (hh:mm:ss)			2:00:00	
Business Recovery Time (hh:mm:ss)			0:27:11	
Total Number of Transactions Completed in Measurement Interval			867,822,065	