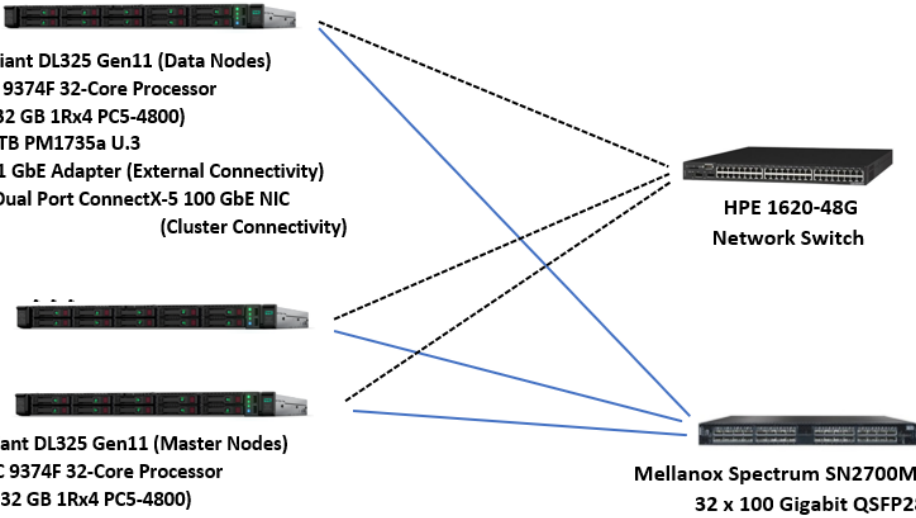



 <b>Hewlett Packard Enterprise</b>	<h1>HPE ProLiant DL325 Gen11</h1>		TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023
Availability Date <b>December 5, 2022</b>	TPCx-HS Performance <b>49.83 HSp@3TB</b>	Price/Performance <b>\$37,849.61 / HSp@3TB</b>	Total System Cost <b>\$1,886,046 USD</b>
System Under Test Configuration Overview			
Scale Factor 3	Hadoop Software CDP Private Cloud Base Edition 7.1.7	Operating System Red Hat Enterprise Linux 8.6	Other Software N/A
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>16 x HPE ProLiant DL325 Gen11 (Data Nodes)</b>                      1x AMD EPYC 9374F 32-Core Processor                      384 GB (12 x 32 GB 1Rx4 PC5-4800)                      8x NVMe 3.2 TB PM1735a U.3                      1x USB3.0 to 1 GbE Adapter (External Connectivity)                      1x Mellanox Dual Port ConnectX-5 100 GbE NIC (Cluster Connectivity)</p> <p><b>1 x HPE ProLiant DL325 Gen11 (Master Nodes)</b>                      1x AMD EPYC 9374F 32-Core Processor                      384 GB (12 x 32 GB 1Rx4 PC5-4800)                      2x NVMe 3.2 TB PM1735a U.3                      1x USB3.0 to 1 GbE Adapter (External Connectivity)                      1x Mellanox Dual Port ConnectX-5 100 GbE NIC (Cluster Connectivity)</p> </div> <div style="width: 45%; text-align: center;">  <p><b>HPE 1620-48G Network Switch</b></p> <p><b>Mellanox Spectrum SN2700M Switch 32 x 100 Gigabit QSFP28</b></p> </div> </div>			
Physical Storage/Scale Factor: 138.67		Scale Factor/Physical Memory: 0.47	
Total Number of Servers:		17 (1x ProLiant DL325 Gen11; 16x ProLiant DL325 Gen11)	
Total Processors/Cores/Threads:		17/544/1,088	
Server Configuration: Processors	1x ProLiant DL325 Gen11 1x AMD EPYC 9374F 32-Core Processor	16x ProLiant DL325 Gen11 1x AMD EPYC 9374F 32-Core Processor	
Memory	384 GiB	384 GiB	
Storage Device	2x 3.2 TB NVMe	8x 3.2 TB NVMe	
Network Connectivity:	1x Mellanox Spectrum SN2700M 32x100 GbE (cluster) 1x HPE 1620-48G (admin)		
Total Rack Units:	17 (1U) + 1 (1U) + 1 (1U) = 19U		

	<h1>HPE ProLiant DL325 Gen11</h1>	TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023					
Server Hardware							
Master Node							
Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price	
HPE DL325 Gen11 8SFF CTO Server	1	P54199-B21	\$2,767	1	\$2,767		
AMD EPYC 9374F 3.85GHz 32-core 320W Processor for HPE	1	P53710-B21	\$11,087	1	\$11,087		
HPE ProLiant DL3X5 Gen11 CPU Performance 1U Heat Sink Kit	1	P58457-B21	\$430	1	\$430		
HPE ProLiant DL3XX Gen11 1U Performance Fan Kit	1	P58462-B21	\$305	7	\$2,135		
HPE 32GB (1x32GB) Single Rank x4 DDR5-4800 EC8 Reg. Smart Memory	1	P50310-B21	\$2,465	12	\$29,580		
HPE DL3X5 Gen11 NS204i-u NVMe Hot Plug Boot Device Cable Kit	1	P57013-B21	\$83	1	\$83		
HPE 3.2TB NVMe MU SFF BC U.3 PM1735a SSD	1	P50230-B21	\$6,476	2	\$12,952		
HPE 1600W FS Plat Ht Plug LH PS Kit	1	P38997-B21	\$685	2	\$1,370		
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	1	P25960-B21	\$4,373	1	\$4,373		
HPE DL3XX Gen11 Easy Install Rail 2 Kit	1	P52351-B21	\$141	1	\$141		
HPE DL325Gen11 Standard Riser	1	stdDL325Gen11Riser		1			
Data Nodes							
HPE DL325 Gen11 8SFF CTO Server	1	P54199-B21	\$2,767	16	\$44,272		
AMD EPYC 9374F 3.85GHz 32-core 320W Processor for HPE	1	P53710-B21	\$11,087	16	\$177,392		
HPE ProLiant DL3X5 Gen11 CPU Performance 1U Heat Sink Kit	1	P58457-B21	\$430	16	\$6,880		
HPE ProLiant DL3XX Gen11 1U Performance Fan Kit	1	P58462-B21	\$305	112	\$34,160		
HPE 32GB (1x32GB) Single Rank x4 DDR5-4800 EC8 Reg. Smart Memory	1	P50310-B21	\$2,465	192	\$473,280		
HPE DL3X5 Gen11 NS204i-u NVMe Hot Plug Boot Device Cable Kit	1	P57013-B21	\$83	16	\$1,328		
HPE 3.2TB NVMe MU SFF BC U.3 PM1735a SSD	1	P50230-B21	\$6,476	128	\$828,928		
HPE 1600W FS Plat Ht Plug LH PS Kit	1	P38997-B21	\$685	32	\$21,920		
Mellanox MCX623106AS-CDAT Ethernet 100Gb 2-port QSFP56 Adapter for HPE	1	P25960-B21	\$4,373	16	\$69,968		
HPE DL3XX Gen11 Easy Install Rail 2 Kit		P52351-B21	\$141	16	\$2,256		
HPE DL325Gen11 Standard Riser		stdDL325Gen11Riser		16			
Other Hardware Components							
HPE 1620 48G Switch (no support available above 90 days, hence increase qty to 3 )	1	JG914A	\$630	3	\$1,890		
HPE SN2700M 100GbE 32QSFP28 Switch with 3Y Tech Care Essential Service	1	Q2F21A	\$34,510	1	\$34,510		
HPE USB US Keyboard/Mouse Kit	1	631341-B21	\$32	3	\$96		
HPE 100Gb QSFP28 to QSFP28 3m Direct Attach Copper Cable	1	845406-B21	\$685	20	\$13,700		
Rack 48U 600mmx 1075mm G2 Advanced Pallet	1	P9K19A	\$3,023	1	\$3,023		
HPE C13 - JIS C8303 JP 100V 12Amp 2.0m Power Cord	1	AF572A	\$54	37	\$1,994		
HPE 3 Year Tech Care Essential DL325 GEN11 Service	1	H78S6E	\$2,958	17		\$50,286	
			<b>Subtotal</b>		<b>\$1,780,515</b>		<b>\$50,286</b>
Other							
HP V22v G5 FHD Monitor	3	65P56AA	\$130	3	\$390		
USB3.0 to 1GbE Adapter	2		\$14.99	20	\$300		
			<b>Subtotal</b>		<b>\$690</b>		<b>\$0</b>
(Continued on next page.)							

	<h1>HPE ProLiant DL325 Gen11</h1>	TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023																																																	
(Continued from previous page.)																																																			
<p><b>Server Software</b></p> <p>RHEL Svr Sckt/2 Gst 3yr 24x7 E-LTU</p> <p>Cloudera Data Platform Private Cloud Base Edition - Annual Subscription per Node for up to 16 Cores/128 GB RAM for compute or up to 48 TB for storage. Business-Level Support. (3 years support)</p>	<table border="1"> <thead> <tr> <th>Description</th> <th>Price Key</th> <th>Part Number</th> <th>Unit Price</th> <th>Qty</th> <th>Extended Price</th> <th>3 Yr Maint Price</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>G3J30AAE</td> <td>\$3,702</td> <td>17</td> <td>\$62,934</td> <td></td> </tr> <tr> <td></td> <td>4</td> <td>CDP-PVC-BASE-BUS</td> <td>\$37,200</td> <td>17</td> <td>\$632,400</td> <td></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Subtotal</b></td> <td><b>\$695,334</b></td> <td><b>\$0</b></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Total Extended Price</b></td> <td><b>\$2,476,539</b></td> <td><b>\$50,286</b></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Total Discounts</b></td> <td><b>\$623,180</b></td> <td><b>\$17,600</b></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Grand Total</b></td> <td><b>\$1,853,359</b></td> <td><b>\$32,686</b></td> </tr> </tbody> </table>	Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price		1	G3J30AAE	\$3,702	17	\$62,934			4	CDP-PVC-BASE-BUS	\$37,200	17	\$632,400		<b>Subtotal</b>					<b>\$695,334</b>	<b>\$0</b>	<b>Total Extended Price</b>					<b>\$2,476,539</b>	<b>\$50,286</b>	<b>Total Discounts</b>					<b>\$623,180</b>	<b>\$17,600</b>	<b>Grand Total</b>					<b>\$1,853,359</b>	<b>\$32,686</b>	
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<p>Pricing: 1 = HPE; 2 = BestBuy.com; 3 = hp.com; 4 = cloudera.com</p> <p>* 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.</p> <p style="text-align: center;"><b>Audited by Doug Johnson, InfoSizing</b></p>	<table border="1"> <tr> <td><b>Three-Year Cost of Ownership:</b></td> <td style="text-align: right;"><b>\$1,886,046</b></td> </tr> <tr> <td><b>HSph@3TB:</b></td> <td style="text-align: right;"><b>49.83</b></td> </tr> <tr> <td><b>\$ / HSph@3TB:</b></td> <td style="text-align: right;"><b>\$37,849.61</b></td> </tr> </table>		<b>Three-Year Cost of Ownership:</b>	<b>\$1,886,046</b>	<b>HSph@3TB:</b>	<b>49.83</b>	<b>\$ / HSph@3TB:</b>	<b>\$37,849.61</b>																																											
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<p><i>Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated Line Items. 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 Line Items. For complete details, see the pricing section of the TPC Benchmark Standard. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.</i></p>																																																			

 <b>Hewlett Packard Enterprise</b>	<h1>HPE ProLiant DL325 Gen11</h1>	TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023
<h2>Numerical Quantities</h2>		
<b>Performance Run – Run 2</b>		
Scale Factor		3TB
Run Start Time	2023-02-28 22:32:21.000	
Run End Time	2023-02-28 22:35:57.000	
Run Elapsed Time		217.000
HSGen Start Time	2023-02-28 22:32:22.000	
HSGen End Time	2023-02-28 22:33:10.000	
HSGen Elapsed Time		48.849
HSSort Start Time	2023-02-28 22:33:12.000	
HSSort End Time	2023-02-28 22:35:39.000	
HSSort Elapsed Time		147.964
HSValidate Start Time	2023-02-28 22:35:42.000	
HSValidate End Time	2023-02-28 22:35:57.000	
HSValidate Elapsed Time		16.842
<b>Repeatability Run – Run 1</b>		
Scale Factor		3TB
Run Start Time	2023-02-28 22:28:35.000	
Run End Time	2023-02-28 22:32:08.000	
Run Elapsed Time		214.000
HSGen Start Time	2023-02-28 22:28:36.000	
HSGen End Time	2023-02-28 22:29:23.000	
HSGen Elapsed Time		47.860
HSSort Start Time	2023-02-28 22:29:25.000	
HSSort End Time	2023-02-28 22:31:50.000	
HSSort Elapsed Time		145.970
HSValidate Start Time	2023-02-28 22:31:53.000	
HSValidate End Time	2023-02-28 22:32:08.000	
HSValidate Elapsed Time		16.827

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TPCx-HS	2.0.3							
TPC Pricing	2.8.0							
Report Date	Mar. 23, 2023							

Run Reports

Run Report for Performance Run – Run 2

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TPCx-HS Performance Metric (HSph@SF) Report

Test Run 2 Details	Total Time =	217
	Total Size =	30000000000
	Scale-Factor =	3

TPCx-HS Performance Metric (HSph@SF): 49.8338

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Run Report for Repeatability Run – Run 1


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TPCx-HS Performance Metric (HSph@SF) Report

Test Run 1 Details	Total Time =	214
	Total Size =	30000000000
	Scale-Factor =	3

TPCx-HS Performance Metric (HSph@SF): 50.5050

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 <b>Hewlett Packard Enterprise</b>	<h1>HPE ProLiant DL325 Gen11</h1>	TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023
<b>Revision History</b>		
Date	Edition	Description
March 23, 2023	First	Initial Publication