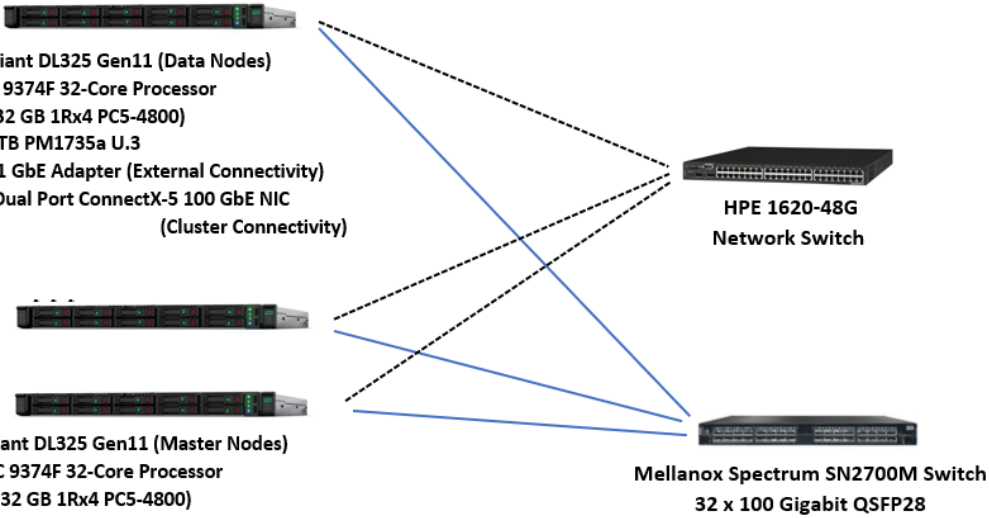



 <b>Hewlett Packard Enterprise</b>	<h1>HPE ProLiant DL325 Gen11</h1>		TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023
Availability Date <b>December 5, 2022</b>	TPCx-HS Performance <b>58.38 HSpH@100TB</b>	Price/Performance <b>\$32,306.38 \$ / HSpH@100TB</b>	Total System Cost <b>\$1,886,046 USD</b>
System Under Test Configuration Overview			
Scale Factor 100	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: 50%; 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: 4.16		Scale Factor/Physical Memory: 15.69	
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			
Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price
<b>Server Hardware</b>						
<b>Master Node</b>						
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		
<b>Data Nodes</b>						
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		
<b>Other Hardware Components</b>						
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>
<b>Other</b>						
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.)						

 <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																																																								
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Price Key</th> <th style="text-align: left;">Part Number</th> <th style="text-align: right;">Unit Price</th> <th style="text-align: right;">Qty</th> <th style="text-align: right;">Extended Price</th> <th style="text-align: right;">3 Yr Maint Price</th> </tr> </thead> <tbody> <tr> <td colspan="7"><b>Server Software</b></td> </tr> <tr> <td>RHEL Svr Sckt/2 Gst 3yr 24x7 E-LTU</td> <td>1</td> <td>G3J30AAE</td> <td style="text-align: right;">\$3,702</td> <td style="text-align: right;">17</td> <td style="text-align: right;">\$62,934</td> <td></td> </tr> <tr> <td>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)</td> <td>4</td> <td>CDP-PVC-BASE-BUS</td> <td style="text-align: right;">\$37,200</td> <td style="text-align: right;">17</td> <td style="text-align: right;">\$632,400</td> <td></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Subtotal</b></td> <td style="text-align: right;"><b>\$695,334</b></td> <td style="text-align: right;"><b>\$0</b></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Total Extended Price</b></td> <td style="text-align: right;"><b>\$2,476,539</b></td> <td style="text-align: right;"><b>\$50,286</b></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Total Discounts</b></td> <td style="text-align: right;"><b>\$623,180</b></td> <td style="text-align: right;"><b>\$17,600</b></td> </tr> <tr> <td colspan="5" style="text-align: right;"><b>Grand Total</b></td> <td style="text-align: right;"><b>\$1,853,359</b></td> <td style="text-align: right;"><b>\$32,686</b></td> </tr> </tbody> </table>			Description	Price Key	Part Number	Unit Price	Qty	Extended Price	3 Yr Maint Price	<b>Server Software</b>							RHEL Svr Sckt/2 Gst 3yr 24x7 E-LTU	1	G3J30AAE	\$3,702	17	\$62,934		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)	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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Pricing: 1 = HPE; 2 = BestBuy.com; 3 = hp.com; 4 = cloudera.com  * 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>Three-Year Cost of Ownership: \$1,886,046</b> <b>HSp@100TB: 58.38</b> <b>\$ / HSp@100TB: \$32,306.38</b>																																																									
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Sales contact: HPE WW Headquarters, 3000 Hanover St., Palo Alto, CA 94304-1185 (650) 857-1501 or HPE: 855-472-5233																																																										
<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>																																																										

 <b>Hewlett Packard</b> <b>Enterprise</b>	<h1>HPE ProLiant DL325 Gen11</h1>	TPCx-HS 2.0.3 TPC Pricing 2.8.0 Report Date Mar. 23, 2023
<div style="border: 1px solid gray; padding: 5px; margin: 10px auto; width: 80%;"> <b>Numerical Quantities</b> </div>		
<b>Performance Run – Run 2</b>		
Scale Factor		100TB
Run Start Time		2023-03-02 14:29:19.000
Run End Time		2023-03-02 16:12:02.000
Run Elapsed Time		6,166.000
HSGen Start Time		2023-03-02 14:29:19.000
HSGen End Time		2023-03-02 14:49:59.000
HSGen Elapsed Time		1,240.993
HSSort Start Time		2023-03-02 14:50:06.000
HSSort End Time		2023-03-02 16:00:09.000
HSSort Elapsed Time		4,203.707
HSValidate Start Time		2023-03-02 16:00:17.000
HSValidate End Time		2023-03-02 16:12:02.000
HSValidate Elapsed Time		706.678
<b>Repeatability Run – Run 1</b>		
Scale Factor		100TB
Run Start Time		2023-03-02 12:46:39.000
Run End Time		2023-03-02 14:27:13.000
Run Elapsed Time		6,037.000
HSGen Start Time		2023-03-02 12:46:39.000
HSGen End Time		2023-03-02 13:05:53.000
HSGen Elapsed Time		1,155.211
HSSort Start Time		2023-03-02 13:06:00.000
HSSort End Time		2023-03-02 14:15:08.000
HSSort Elapsed Time		4,147.877
HSValidate Start Time		2023-03-02 14:15:15.000
HSValidate End Time		2023-03-02 14:27:13.000
HSValidate Elapsed Time		719.337

	<h1>HPE ProLiant DL325 Gen11</h1>	<table> <tr><td>TPCx-HS</td><td>2.0.3</td></tr> <tr><td>TPC Pricing</td><td>2.8.0</td></tr> <tr><td>Report Date</td><td>Mar. 23, 2023</td></tr> </table>	TPCx-HS	2.0.3	TPC Pricing	2.8.0	Report Date	Mar. 23, 2023
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 =	6166
	Total Size =	1000000000000
	Scale-Factor =	100

TPCx-HS Performance Metric (HSph@SF): 58.3873

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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 =	6037
	Total Size =	1000000000000
	Scale-Factor =	100

TPCx-HS Performance Metric (HSph@SF): 59.6338

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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