



Cisco UCS Integrated Infrastructure for Big Data

TPCx-HS Rev. 1.4.1
TPC-Pricing Rev. 2.0.0

Report Date:
December 20, 2016

Total System Cost

TPCx-HS Performance Metric

Price/Performance

563,459 USD

13.47
HSph@3TB

41,830.67 USD
\$/HSph@3TB

Scale Factor

Apache Hadoop
Compatible Software

Operating System

Other Software

Availability Date

3TB

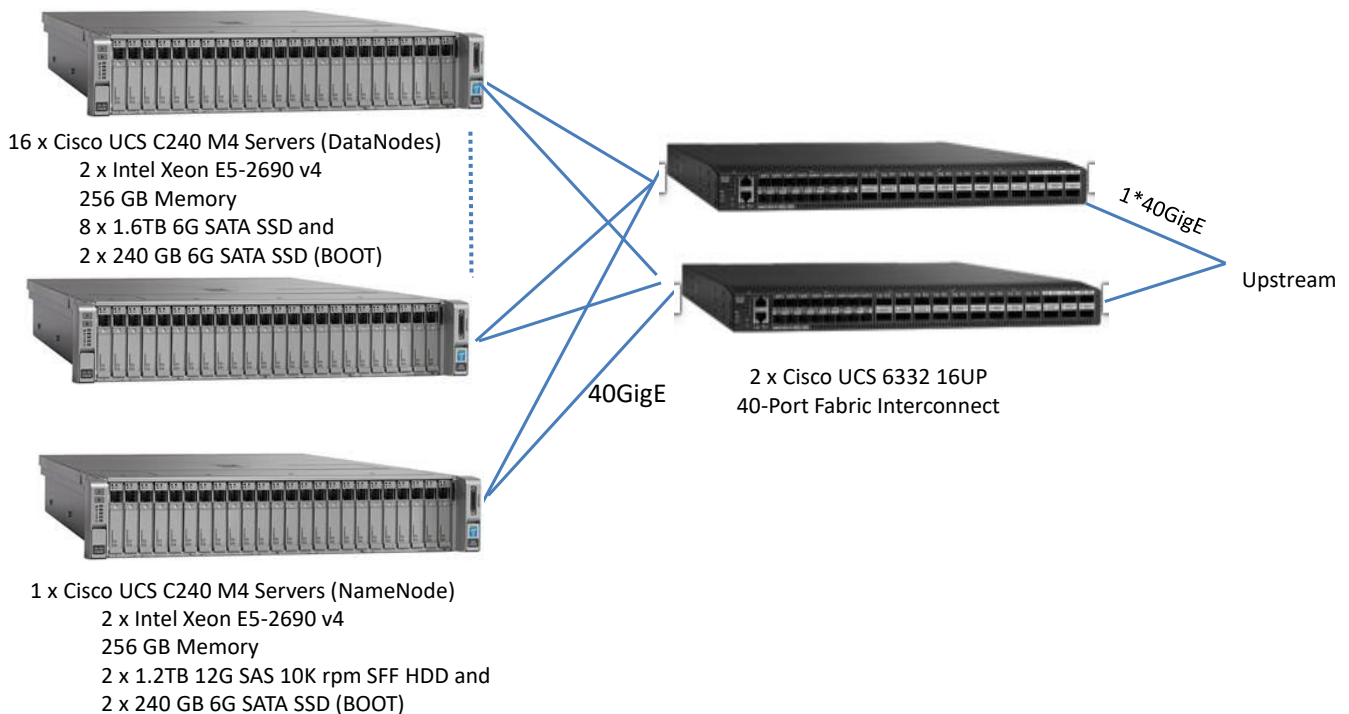
Cloudera Enterprise
Edition

Red Hat Enterprise Linux
Server Release 6.7

None

November 15,
2016

System Configuration



Physical Storage/Scale Factor: 71.79

Scale Factor/Physical Memory: 0.71

Servers:	17 x Cisco UCS C240M4 Servers
Total Processors/Cores/Threads	34/476 /952
Server Configuration:	Per Node:
Processors	2 x Intel® Xeon® CPU E5-2690 v4, 2.60 GHz, 35 MB L3
Memory	256GB
Storage Controller	1 x Cisco 12Gbps Modular SAS HBA
Storage Device	8 x 1.6TB 6G SATA SSD (DataNodes) 2 x 1.2TB 12G SAS 10K rpm SFF HDD (NameNode) 2 x 240GB 2.5 Enterprise Value SSD (all nodes, boot disk)
Network	Cisco VIC 1387 Dual Port 40Gb QSFP CNA MLOM
Connectivity:	2 x Cisco UCS 6332-16UP 40-Port Fabric Interconnect
Total Rack Units:	$(17 * C240) + (2 * FI) = (17 * 2RU) + (2 * 1RU) = 34 + 2 = 36$



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Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price
High Performance Configuration w with SSDs	UCS-SPBD-C240M4-H2	1	\$479,000.00	2	\$ 958,000.00	
UCS C240 M4 SFF 24 HD w/o CPU mem HD PCIe PS railkt w/expndr	UCSC-C240-M4SX	1	\$ -	16	\$ -	
2.60 GHz E5-2690 v4/135W 14C/35MB Cache/DDR4 2400MHz	UCS-CPU-E52690E	1	\$ -	32	\$ -	
32GB DDR4-2400-MHz RDIMM/PC4-19200/dual rank/x4/1.2v	UCS-MR-1X322RV-A	1	\$ -	128	\$ -	
240 GB 2.5 inch Enterprise Value 6G SATA SSD (boot)	UCS-SD240GBKS4-EB	1	\$ -	32	\$ -	
1.6TB 2.5 inch Enterprise Value 6G SATA SSD	UCS-SD16TBKS4-EV	1	\$ -	128	\$ -	
Cisco 12Gbps Modular SAS HBA	UCSC-SAS12GHBA	1	\$ -	16	\$ -	
Cisco VIC 1387 Dual Port 40Gb QSFP CNA MLOM	UCSC-MLOM-C40Q-03	1	\$ -	16	\$ -	
1200W / 800W V2 AC Power Supply for 2U C-Series Servers	UCSC-PSU2V2-1200W	1	\$ -	32	\$ -	
Power Cord 125VAC 13A NEMA 5-15 Plug North America	CAB-9K12A-NA	1	\$ -	32	\$ -	
Right PCI Riser Bd (Riser 1) 2onbd SATA bootdrvs+ 2PCI slts	UCSC-PCI-1C-240M4	1	\$ -	16	\$ -	
Heat sink for UCS C240 M4 rack servers	UCSC-HS-C240M4	1	\$ -	32	\$ -	
Ball Bearing Rail Kit for C220 M4 and C240 M4 rack servers	UCSC-RAILB-M4	1	\$ -	16	\$ -	
UCS C240 M4 SFF 24 HD w/o CPU mem HD PCIe PS railkt w/expndr	UCSC-C240-M4SX	1	\$ 3,995.00	1	\$ 3,995.00	
2.60 GHz E5-2690 v4/135W 14C/35MB Cache/DDR4 2400MHz	UCS-CPU-E52690E	1	\$ 6,307.00	2	\$ 12,614.00	
32GB DDR4-2400-MHz RDIMM/PC4-19200/dual rank/x4/1.2v	UCS-MR-1X322RV-A	1	\$ 1,100.00	8	\$ 8,800.00	
240 GB 2.5 inch Enterprise Value 6G SATA SSD (boot)	UCS-SD240GBKS4-EB	1	\$ 917.00	2	\$ 1,834.00	
1.2 TB 12G SAS 10K RPM SFF HDD	UCS-HD12TB10K12G	1	\$ 1,460.00	2	\$ 2,920.00	
Cisco 12Gbps Modular SAS HBA	UCSC-SAS12GHBA	1	\$ 656.00	1	\$ 656.00	
Cisco VIC 1387 Dual Port 40Gb QSFP CNA MLOM	UCSC-MLOM-C40Q-03	1	\$ 2,192.00	1	\$ 2,192.00	
1200W / 800W V2 AC Power Supply for 2U C-Series Servers	UCSC-PSU2V2-1200W	1	\$ 749.00	2	\$ 1,498.00	
Power Cord 125VAC 13A NEMA 5-15 Plug North America	CAB-9K12A-NA	1	\$ -	2	\$ -	
Right PCI Riser Bd (Riser 1) 2onbd SATA bootdrvs+ 2PCI slts	UCSC-PCI-1C-240M4	1	\$ 148.00	1	\$ 148.00	
Heat sink for UCS C240 M4 rack servers	UCSC-HS-C240M4	1	\$ -	2	\$ -	
Ball Bearing Rail Kit for C220 M4 and C240 M4 rack servers	UCSC-RAILB-M4	1	\$ 220.00	1	\$ 220.00	
Cisco Smart Net 24X7X4 3Y UCS C240 M4S BD SP Server	CON-OSP-C240V4SP	1	\$ 1,284.99	17		\$ 21,844.83

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Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price
(continued from previous page)						
UCS SP Select 6332-16UP F/No PSU/24 QSFP+ 16 Unified PT	UCS-SP-F633216-2X		1 \$ 49,000.00	1	\$ 49,000.00	
(Not sold standalone) UCS 6332-16UP F/No PSU/24 QSFP+ 16 PT	UCS-SP-F6332-16UP		1 \$ -	2	\$ -	
UCS 6332 Power Supply/100-240VAC	UCS-PSU-6332-AC		1 \$ -	4	\$ -	
16 Gbps Fibre Channel SW SFP+, LC	DS-SFP-FC16G-SW		1 \$ -	8	\$ -	
QSFP40G BiDi Short-reach Transceiver	QSFP-40G-SR-BD		1 \$ -	8	\$ -	
Power Cord, 125VAC 13A NEMA 5-15 Plug, North America	CAB-9K12A-NA		1 \$ -	4	\$ -	
UCS 6332 Fan Module	UCS-FAN-6332		1 \$ -	8	\$ -	
40GBASE-CR4 Passive Copper Cable, 3m	QSFP-H40G-CU3M		1 \$ -	8	\$ -	
UCS 6332 Chassis Accessory Kit	UCS-ACC-6332		1 \$ -	2	\$ -	
UCS Manager v3.1	N10-MGT014		1 \$ -	2	\$ -	
40GBASE-CR4 Passive Copper Cable, 3m	QSFP-H40G-CU3M=		1 \$ 250.00	28	\$ 7,000.00	
3rd Gen FI Per port License to connect C-direct only	UCS-LIC-6300-40GC		1 \$ 1,388.00	28	\$ 38,864.00	
Cisco R42610 standard rack w/side panels	RACK-UCS2		1 \$ 3,429.00	1	\$ 3,429.00	
3Y Support 24x7x4 UCS6332-16UP	CON-OSPT-F633216UP		1 \$ 3,330.25	2		\$ 6,660.50
Red Hat Enterprise Linux Server, 3Y 24x7	CON-ISV1-EL2S2V3A		1 \$ 3,897.00	17	\$ 66,249.00	Inc.
Cloudera Enterprise Edition, 3Y 24x7	UCS-BD-CEBN-GD=		1 \$ 14,057.00	17	\$ 238,969.00	Inc.
Total					\$1,396,388.00	\$ 28,505.33
Large Purchase Discount 1	61% for products and 35% for service				\$ (851,796.68)	\$ (9,976.87)
Acer V206HQLAbd - LED monitor - 20" (Inc 2 spares)	UM.1V6AA.A02		2 \$ 94.99	3	\$ 284.97	
Logitech USB Corded Keyboard/Mouse Combo MK120 (Inc 2 spares)	920-002565		2 \$ 17.99	3	\$ 53.97	

Pricing: 1 = Cisco, 2 = CDW.com

⁽¹⁾ All discounts are based on US list prices and for similar quantities and configurations. The discounts are based on the overall specific components pricing from respective vendors 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.

Audited by Doug Johnson of InfoSizing

Three-Year Cost of Ownership \$563,459

HSph@3TB 13.47

\$/HSph@3TB \$41,830.67

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.



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Performance Run

Scale Factor	3TB
Run Start Time	2016-10-17 21:01:31
Run End Time	2016-10-17 21:14:51
Run Elapsed Time	802.000
HSGen Start Time	2016-10-17 21:01:32
HSGen End Time	2016-10-17 21:04:40
HSGen Elapsed Time	189.556
HSSort Start Time	2016-10-17 21:04:42
HSSort End Time	2016-10-17 21:13:33
HSSort Elapsed Time	531.503
HSValidate Start Time	2016-10-17 21:13:36
HSValidate End Time	2016-10-17 21:14:51
HSValidate Elapsed Time	76.640

Repeatability Run

Scale Factor	3TB
Run Start Time	2016-10-17 20:44:08
Run End Time	2016-10-17 20:57:26
Run Elapsed Time	799.000
HSGen Start Time	2016-10-17 20:44:10
HSGen End Time	2016-10-17 20:47:19
HSGen Elapsed Time	190.610
HSSort Start Time	2016-10-17 20:47:21
HSSort End Time	2016-10-17 20:56:02
HSSort Elapsed Time	521.966
HSValidate Start Time	2016-10-17 20:56:06
HSValidate End Time	2016-10-17 20:57:26
HSValidate Elapsed Time	81.546



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Run Report for Performance Run - Run 2

TPCx-HS Performance Metric (HSph@SF) Report

Test Run 2 Details	Total Time =	802
	Total Size =	30000000000
	Scale-Factor =	3

TPCx-HS Performance Metric (HSph@SF): 13.471

Run Report for Repeatability Run - Run 1

TPCx-HS Performance Metric (HSph@SF) Report

Test Run 1 Details	Total Time =	799
	Total Size =	30000000000
	Scale-Factor =	3

TPCx-HS Performance Metric (HSph@SF): 13.5196
