



Cisco UCS Integrated Infrastructure for Big Data

TPCx-HS Rev. 1.3.0
TPC-Pricing Rev. 2.1.0

Report Date:
March 22, 2016

Total System Cost

TPCx-HS Performance Metric

Price/Performance

428,489 USD

11.56
HSph@10TB

37,066.53 USD
\$/HSph@10TB

Scale Factor

Apache Hadoop
Compatible Software

Operating System

Other Software

Availability Date

10TB

MapR Converged
Community Edition,
Version 5.0

Red Hat Enterprise Linux
Server 6.5

None

March 22, 2016

System Configuration



16 x Cisco UCS C240 M4 Servers (All DataNodes)
with 24 x 1.2TB 6G SAS 10K rpm SFF HDD and
2 x 120 GB 2.5 inch Enterprise Value 6G SATA SSD (BOOT)



2 x Cisco UCS 6296UP
96-Port Fabric Interconnect

Physical Storage/Scale Factor: 46.46

Scale Factor/Physical Memory: 2.50

	Servers: 16 x Cisco UCS C240M4 Server
Total Processors/Cores/Threads	32/384/768
Server Configuration:	Per node:
Processors	2 x Intel® Xeon® Processor E5-2680 v3, 2.50 GHz, 30MB L3
Memory	256GB
Storage Controller	1 x Cisco 12G SAS Modular Raid Controller, 2GB FBWC Cache
Storage Device	24 x 1.2TB 6G SAS 10Krpm SFF HDD (for all 16 DataNodes)
	2 x 120GB 2.5in. Enterprise Value 6G SATA SSD (boot disks, all nodes)
Network	1 x Cisco UCS VIC 1227 MLOM - Dual Port 10Gb SFP+
Connectivity:	2 x Cisco UCS 6296UP 96-Port Fabric Interconnect



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Description	Part Number	Source	Unit Price	Qty	Extended	3 Year Maint.
Hardware Components						
Cisco UCS CPA v3 Performance Optimized Bundle	UCS-SL-CPA3-P		\$ -	1	\$ -	
(Not sold Standalone)UCS C240 M4SX w /E52680v3,256GB mem	UCS-SA-C240M4SX-P		\$48,005.00	16	\$ 768,080.00	
2.50 GHz E5-2680 v3/120W 12C/30MB Cache/DDR4 2133MHz	UCS-CPU-E52680D		\$ -	32	\$ -	
16GB DDR4-2133-MHz RDIMM/PC4-17000/dual rank/x4/1.2v	UCS-MR-1X162RU-A		\$ -	256	\$ -	
120 GB 2.5 inch Enterprise Value 6G SATA SSD (BOOT)	UCS-SD120G0KSB-EV		\$ -	32	\$ -	
1.2 TB 6G SAS 10K rpm SFF HDD	UCS-HD12T10KS2-E		\$ -	384	\$ -	
Cisco 12Gbps SAS 2GB FBWC Cache module (Raid 0/1/5/6)	UCSC-MRAID12G-2GB		\$ -	16	\$ -	
Cisco 12G SAS Modular Raid Controller	UCSC-MRAID12G		\$ -	16	\$ -	
Cisco UCS VIC1227 VIC MLOM - Dual Port 10Gb SFP+	UCSC-MLOM-CSC-02		\$ -	16	\$ -	
Right PCI Riser Bd (Riser 1) 2onbd SATA bootdrvs+ 2PCI slts	UCSC-PCI-1C-240M4		\$ -	16	\$ -	
1200W / 800W V2 AC Power Supply for 2U C-Series Servers	UCSC-PSU2V2-1200W		\$ -	32	\$ -	
Power Cord 125VAC 13A NEMA 5-15 Plug North America	CAB-9K12A-NA		\$ -	32	\$ -	
Right PCI Riser Bd (Riser 1) 2onbd SATA bootdrvs+ 2PCI slts	UCSC-PCI-1C-240M4		\$ -	16	\$ -	
Heat sink for UCS C240 M4 rack servers	UCSC-HS-C240M4		\$ -	32	\$ -	
Supercap cable 250mm	UCSC-SCCBL240		\$ -	16	\$ -	
Ball Bearing Rail Kit for C220 M4 and C240 M4 rack servers	UCSC-RAILB-M4		\$ -	16	\$ -	
(Not sold standalone) UCS 6296UP 2RU FI w /18p LIC,16xCables	UCS-SA-BD-FI96		\$22,517.00	2	\$ 45,034.00	
UCS 6296UP Power Supply/100-240VAC	UCS-PSU-6296UP-AC		\$ -	4	\$ -	
10GBASE-CU SFP+ Cable 3 Meter	SFP-H10GB-CU3M		\$ -	32	\$ -	
UCS Manager v2.2	N10-MGT012		\$ -	2	\$ -	
UCS 6296UP Chassis Accessory Kit	UCS-ACC-6296UP		\$ -	2	\$ -	
UCS 6200 Series Expansion Module Blank	UCS-BLKE-6200		\$ -	6	\$ -	
UCS 6296UP Fan Module	UCS-FAN-6296UP		\$ -	8	\$ -	
Power Cord 125VAC 13A NEMA 5-15 Plug North America	CAB-9K12A-NA		\$ -	4	\$ -	
Cisco Smart Net 24X7X4 3Y UCS C240 M4S BD SP Server	CON-OSP-C240V4SP		\$ 1,284.99	16		\$20,559.84
Cisco R42610 standard rack w/side panels	RACK-UCS2		\$ 3,429.00	1	\$ 3,429.00	
Cisco Smart Net 24X7X4 3Y UCS 6296UP 2RU Fabric Int/2 PSU/4 Fans	CON-SNTP-FI6296UP		\$ 5,781.00	2		\$11,562.00
Hardware Subtotal					\$ 816,543.00	\$32,121.84
Software Components						
Red Hat Enterprise Linux Server, 3Y 24x7	CON-ISV1-RH2SUG3A		\$ 2,397.00	16	\$ 38,352.00	Inc.
Cisco MapR Community Edi. Hadoop 24x7	UCS-BD-M3-AS-3YR		\$11,842.00	16	\$ 189,472.00	Inc.
Software Subtotal					\$ 227,824.00	\$ -



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Description	Part Number	Source	Unit Price	Qty	Extended	3 Year Maint.
Infrastructure						
Acer V206HQLAbd - LED monitor - 20" (Inc 2 spares)	UM.1V6AA.A02	2	\$ 85.99	3	\$ 257.97	
Logitech USB Corded Keyboard/Mouse Combo MK120 (Inc 2 spares)	920-002565	2	\$ 15.99	3	\$ 47.97	
Infrastructure Subtotal					\$ 305.94	\$ -
Configuration Subtotal					\$ 1,044,672.94	\$32,121.84
Large Purchase Discount (61% for products and 35% for service)		1			\$ 637,063.87	\$11,242.64

Pricing: 1 = Cisco, 2 = CDW.com <small>⁽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.</small> <p style="text-align: center;">Audited by Doug Johnson of InfoSizing, Inc.</p>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Three-Year Cost of Ownership</td> <td style="text-align: right;">\$428,489</td> </tr> <tr> <td style="text-align: right;">HSph@10TB</td> <td style="text-align: right;">11.56</td> </tr> <tr> <td style="text-align: right;">\$/HSph@10TB</td> <td style="text-align: right;">\$37,066.53</td> </tr> </table>	Three-Year Cost of Ownership	\$428,489	HSph@10TB	11.56	\$/HSph@10TB	\$37,066.53
Three-Year Cost of Ownership	\$428,489						
HSph@10TB	11.56						
\$/HSph@10TB	\$37,066.53						

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 10TB

Run Start Time 2016-03-22 09:38:20

Run End Time 2016-03-22 10:30:11

Run Elapsed Time 3,112.000

HSGen Start Time 2016-03-22 09:38:21

HSGen End Time 2016-03-22 09:52:27

HSGen Elapsed Time 847.349

HSSort Start Time 2016-03-22 09:52:29

HSSort End Time 2016-03-22 10:27:15

HSSort Elapsed Time 2,086.785

HSValidate Start Time 2016-03-22 10:27:17

HSValidate End Time 2016-03-22 10:30:11

HSValidate Elapsed Time 175.252

Repeatability Run

Scale Factor 10TB

Run Start Time 2016-03-22 08:31:07

Run End Time 2016-03-22 09:21:37

Run Elapsed Time 3,031.000

HSGen Start Time 2016-03-22 08:31:08

HSGen End Time 2016-03-22 08:43:23

HSGen Elapsed Time 736.853

HSSort Start Time 2016-03-22 08:43:25

HSSort End Time 2016-03-22 09:18:43

HSSort Elapsed Time 2,118.658

HSValidate Start Time 2016-03-22 09:18:45

HSValidate End Time 2016-03-22 09:21:37

HSValidate Elapsed Time 173.368



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Run Report for Performance Run - Run 2

TPCx-HS Performance Metric (HSph@10TB) Report

Test Run 2 Details	Total Time =	3,112
	Total Size =	100,000,000,000
	Scale-Factor =	10

TPCx-HS Performance Metric (HSph@10TB): 11.5687

Run Report for Repeatability Run - Run 1

TPCx-HS Performance Metric (HSph@10TB) Report

Test Run 1 Details	Total Time =	3,031
	Total Size =	100,000,000,000
	Scale-Factor =	10

TPCx-HS Performance Metric (HSph@10TB): 11.8778