



Cisco UCS Integrated Infrastructure for Big Data

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

Report Date:
November 10, 2016

Total System Cost

TPCx-HS Performance Metric

Price/Performance

529,779 USD

13.51
HSph@30TB

39,213.85 USD
\$/HSph@30TB

Scale Factor

Apache Hadoop
Compatible Software

Operating System

Other Software

Availability Date

30TB

IBM Open Platform
(IBM IOP) 4.1

Red Hat Enterprise Linux
Server Release 6.7

None

November 10,
2016

System Configuration



8 x Cisco UCS S3260 Dual-node Servers (16 DataNodes)

Per Node:

- 2 x Intel Xeon E5-2680 v4
- 256 GB Memory
- 24 x 8TB LFF HDD
- 2 x 480 GB 2.5 inch Enterprise Value SSD (BOOT)



1 x Cisco UCS C220 M4 Server (NameNode)

- 2 x Intel Xeon E5-2680 v4
- 256 GB Memory
- 8 x 1.2TB 12G SAS 10K rpm SFF HDD

40GigE



2 x Cisco UCS 6332 32-Port Fabric
Interconnect

1*40GigE

Upstream

Physical Storage/Scale Factor: 103.23

Scale Factor/Physical Memory: 7.06

Servers:	8 x Cisco UCS S3260 2-Node Servers (DataNodes), 1 x Cisco UCS C220 M4 Server (NameNode)
Total Processors/Cores/Threads	34/476 /952
Server Configuration:	Per Node:
Processors	2 x Intel® Xeon® Processor E5-2680 v4, 2.40 GHz, 35 MB L3
Memory	256GB
Storage Controller	1 x Cisco UCS C3000 RAID Controller M4 Server w 4G RAID Cache (DataNodes) 1 x Cisco 12G SAS Modular Raid Controller (NameNode)
Storage Device	24 x 8TB LFF HDD (DataNodes) 2 x 480GB 2.5in. Enterprise Value SSD (DataNodes, boot disk) 8 x 1.2TB 12G SAS 10K rpm SFF HDD (NameNode)
Network	Cisco VIC 1300
Connectivity:	2 x Cisco UCS 6332 32-Port Fabric Interconnect
Total Rack Units:	(8*S3260)+(1*C220)+(2*FI) = (8*4RU)+(1*1RU)+(2*1RU) = 32+1+2 = 35



Cisco UCS Integrated Infrastructure for Big Data

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

Report Date:
November 10, 2016

Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price
Cisco S3260 2 Node Bundle	UCSS-SP-S3260-BV1	1	\$97,360.20	8	\$ 778,881.60	
UCS C3000 M4 Server Node for Intel E5-2600 v4	UCSC-C3K-M4SRB	1	\$ -	2	\$ -	
2.40 GHz E5-2680 v4/120W 14C/35MB Cache/DDR4 2400MHz	UCS-CPU-E52680E	1	\$ -	2	\$ -	
16GB DDR4-2400-MHz RDIMM/PC4-19200/single rank/x4/1.2v	UCS-MR-1X161RV-A	1	\$ -	16	\$ -	
Cisco UCS C3000 RAID Controller M4 Server w 4G RAID Cache	UCS-C3K-M4RAID	1	\$ -	1	\$ -	
Cisco UCS C3X60 Server Node CPU Heatsink	UCSC-HS-C3X60	1	\$ -	2	\$ -	
UCSC C3X60 480GB Boot SSD (Gen 2)	UCS-C3X60-G2SD48	1	\$ -	2	\$ -	
Cisco UCS C3260 System IO Controller w with VIC 1300 incl.	UCSC-C3260-SIOC	1	\$ -	2	\$ -	
UCSC 3X60 8TB NL-SAS 7.2KHelium HDD w with HDD Carrier	UCSC-C3X60-HD8TB	1	\$ -	48	\$ -	
Cisco UCS C3260 Base Chassis w/4x PSU, SSD, Railkit	UCSC-C3260	1	\$ -	1	\$ -	
Power Cord Jumper, C13-C14 Connectors, 2 Meter Length	CAB-C13-C14-2M	1	\$ -	4	\$ -	
Cisco UCS C3160 System Bezel	UCSC-C3160-BEZEL	1	\$ -	1	\$ -	
UCS C3X60 Rack Rails Kit	UCSC-C3X60-RAIL	1	\$ -	1	\$ -	
UCS C3X60 1050W Power Supply Unit	UCSC-PSU1-1050W	1	\$ -	4	\$ -	
UCS C220 M4 SFF w/o CPU, mem, HD, PCIe, PSU, rail kit	UCSC-C220-M4S	1	\$ 3,365.00	1	\$ 3,365.00	
2.40 GHz E5-2680 v4/120W 14C/35MB Cache/DDR4 2400MHz	UCS-CPU-E52680E	1	\$ 5,259.00	2	\$ 10,518.00	
16GB DDR4-2133-MHz RDIMM/PC4-17000/dual rank/x4/1.2v	UCS-MR-1X162RU-A	1	\$ 600.00	16	\$ 9,600.00	
1.2 TB 12G SAS 10K RPM SFF HDD	UCS-HD12TB10K12G	1	\$ 1,460.00	8	\$ 11,680.00	
Cisco VIC 1387 Dual Port 40Gb QSFP CNA MLOM	UCSC-MLOM-C40Q-03	1	\$ 2,192.00	1	\$ 2,192.00	
Cisco 12G SAS Modular Raid Controller	UCSC-MRAID12G	1	\$ 656.00	1	\$ 656.00	
Cisco 12Gbps SAS 2GB FBWC Cache module (Raid 0/1/5/6)	UCSC-MRAID12G-2GB	1	\$ 1,405.00	1	\$ 1,405.00	
Ball Bearing Rail Kit for C220 M4 and C240 M4 rack servers	UCSC-RAILB-M4	1	\$ 220.00	1	\$ 220.00	
1050W V2 -48 VDC Power Supply for C220M4 C-Series Server	UCSC-PSUV2-1050DC	1	\$ 1,199.00	2	\$ 2,398.00	
C-Series -48V DC PSU Power Cord, 3.5M, 3 Wire, 8AWG, 40A	CAB-48DC-40A-8AWG	1	\$ -	2	\$ -	
UCS 6332 1RU FI/No PSU/32 QSFP+	UCS-SP-F6332	1	\$22,000.00	2	\$ 44,000.00	
3rd Gen FI Per port License to connect C-direct only	UCS-LIC-6300-40GC	1	\$ 1,388.00	20	\$ 27,760.00	
40GBASE-CR4 Passive Copper Cable, 3m	QSFP-H40G-CU3M-RF	1	\$ 150.00	36	\$ 5,400.00	
Cisco R42610 standard rack w/side panels	RACK-UCS2	1	\$ 3,429.00	1	\$ 3,429.00	
3YR 24X7X4 Support UCS S3260	CON-OSP-S3260BSE	1	\$ 7,872.00	8		\$ 62,976.00
3YR 24X7X4 Support UCS C220 M4 SFF	CON-3SNTP-C220M4S	1	\$ 1,496.00	1		\$ 1,496.00
3YR 24x7x4 Support UCS6332	CON-OSPT-F6332	1	\$ 3,330.25	2		\$ 6,660.50
Red Hat Enterprise Linux Server, 3Y 24x7	CON-ISV1-RH2SUG3A	1	\$ 2,397.00	17	\$ 40,749.00	
					Total	\$ 942,253.60 \$ 71,132.50

(continued next page)



Cisco UCS Integrated Infrastructure for Big Data

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

Report Date:
November 10, 2016

Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price
(continued from previous page)						
				Total	\$ 942,253.60	\$ 71,132.50
Large Purchase Discount 1	61% for products and 35% for service	1			\$ (574,774.70)	\$(24,896.38)
Acer V206HQLAbd - LED monitor - 20" (Inc 2 spares)	UM.1V6AA.A02	2	\$ 79.99	3	\$ 239.97	
Logitech USB Corded Keyboard/Mouse Combo MK120 (Inc 2 spares)	920-002565	2	\$ 17.99	3	\$ 53.97	
IBM Elite Support for Apache Hadoop	IBM-D1G8TLL	3	\$ 6,810.00	17	\$ 115,770.00	
Pricing: 1 = Cisco, 2 = CDW.com, 3 = IBM ⁽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 \$529,779 HSph@30TB 13.51 \$/HSph@30TB \$39,213.85	
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.						



Cisco UCS Integrated Infrastructure for Big Data

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

Report Date:
November 10, 2016

Performance Run

Scale Factor 30TB

Run Start Time 2016-10-29 06:24:50

Run End Time 2016-10-29 08:37:59

Run Elapsed Time 7,991.000

HSGen Start Time 2016-10-29 06:24:51

HSGen End Time 2016-10-29 06:52:01

HSGen Elapsed Time 1,631.350

HSSort Start Time 2016-10-29 06:52:03

HSSort End Time 2016-10-29 08:22:05

HSSort Elapsed Time 5,403.093

HSValidate Start Time 2016-10-29 08:22:09

HSValidate End Time 2016-10-29 08:37:59

HSValidate Elapsed Time 951.669

Repeatability Run

Scale Factor 30TB

Run Start Time 2016-10-29 08:40:05

Run End Time 2016-10-29 10:53:14

Run Elapsed Time 7,991.000

HSGen Start Time 2016-10-29 08:40:06

HSGen End Time 2016-10-29 09:07:32

HSGen Elapsed Time 1,647.728

HSSort Start Time 2016-10-29 09:07:35

HSSort End Time 2016-10-29 10:36:35

HSSort Elapsed Time 5,341.457

HSValidate Start Time 2016-10-29 10:36:38

HSValidate End Time 2016-10-29 10:53:14

HSValidate Elapsed Time 997.461



**Cisco UCS Integrated Infrastructure
for Big Data**

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

Report Date:
November 10, 2016

Run Report for Performance Run - Run 1

TPCx-HS Performance Metric (HSph@SF) Report

Test Run 1 Details	Total Time =	7991
	Total Size =	300000000000
	Scale-Factor =	30

TPCx-HS Performance Metric (HSph@SF): 13.5153

Run Report for Repeatability Run - Run 2

TPCx-HS Performance Metric (HSph@SF) Report

Test Run 2 Details	Total Time =	7991
	Total Size =	300000000000
	Scale-Factor =	30

TPCx-HS Performance Metric (HSph@SF): 13.5153
