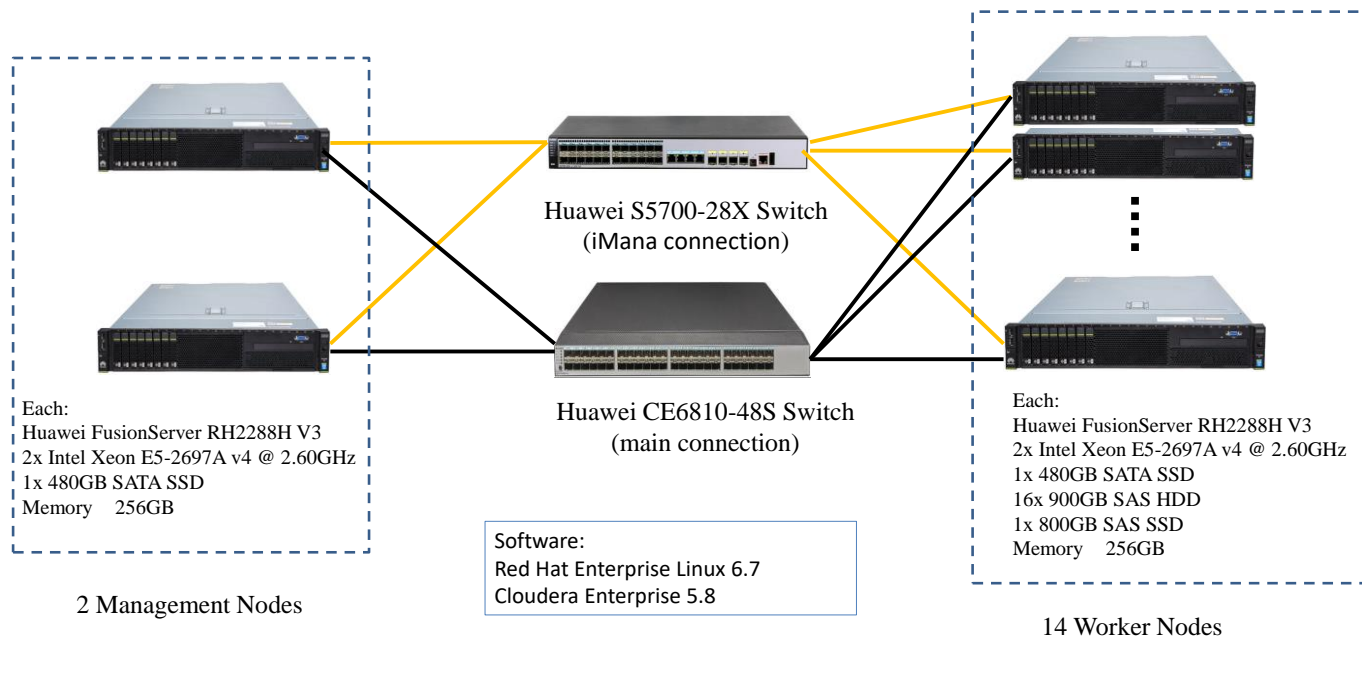
		Huawei FusionServer for Big Data		TPCx-BB Rev. 1.2.0 TPC-Pricing Rev. 2.0.0	
				Report Date: February 16, 2017	
Total System Cost		TPCx-BB Performance Metric		Price/Performance	
395,092 USD		611.31 BBQpm@3000		646.31 USD \$/BBQpm@3000	
Framework	Operating System	Other Software	Availability Date	Scale Factor	Streams
Cloudera for Apache Hadoop (CDH) 5.8	Red Hat Enterprise Linux Server 6.7	None	December 7, 2016	3000	8

System Configuration



Physical Storage/Scale Factor: 73.49

Scale Factor/Physical Memory: 0.73

Servers: 16x RH2288H V3
 Total Processors/Cores/Threads 32/512/1024

Server Configuration:	Per RH2288H V3:
Processors	2x Intel Xeon E5-2697A v4 @ 2.60GHz
Memory	256GB
Storage Controller	LSI 3108 RAID Card
Storage Device	1x 480GB SATA SSD (all nodes) 16x 900GB SAS HDD (worker nodes) 1x 800GB SAS HDD (worker nodes)
Network	Intel Ethernet 2X10GE(82599)-SFP+ Adapter

Connectivity: Huawei CE6810-48S Switch (main connection), Huawei S5700-28X Switch (iMana connection)



Huawei FusionServer for Big Data

TPCx-BB Rev. 1.2.0
 TPC-Pricing Rev. 2.0.0

Report Date:
 February 16, 2017

Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price
<u>Server Hardware - Management Nodes</u>						
RH2288H V3 (25HDD EXP Chassis)H22H-03	02310YJW	1	\$ 1,706.60	2	\$ 3,413.20	
Onboard Network card,2X10GE Port(82599)	02311EUU	1	\$ 1,139.50	2	\$ 2,279.00	
8056 Plus Fan module	02310YKP	1	\$ 45.58	8	\$ 364.64	
3*8X Riser Card Module	02310YKQ	1	\$ 126.14	2	\$ 252.28	
2*2.5" Rear Hard Disk Backplane Module	02311DUP	1	\$ 62.54	2	\$ 125.08	
750W platinum AC power supply unit	02310QWX	1	\$ 295.74	4	\$ 1,182.96	\$ 2,168.00
Intel Xeon E5-2697A v4(with Heatsink)	02311NFD	1	\$ 6,857.14	4	\$ 27,428.56	
32GB,288pin,0.83ns,2400000KHz,1.2V,ECC,2Rank(2G*4bit)	6200214	1	\$ 634.94	16	\$ 10,159.04	
480GB,SATA 6Gb/s, Mixed Use, 2.5inch,VE Series	02311LTP	1	\$ 1,260.34	2	\$ 2,520.68	
LSI 3108 RAID CARD-Support SuperCap	02310YMF	1	\$ 694.30	2	\$ 1,388.60	
LSI Flash Card,8GB,TFM,Supercap and 620mm Cable Moudle	02311BNX	1	\$ 386.90	2	\$ 773.80	
Network Card, Gigabit, RJ45 Copper, 2 ports, PCIE 2.0 x4-8086-1521-2	6310070	1	\$ 60.92	2	\$ 121.84	
<i>SubTotal</i>					\$ 50,009.68	\$ 2,168.00
<u>Server Hardware - Worker Nodes</u>						
RH2288H V3 (25HDD EXP Chassis)H22H-03	02310YJW	1	\$ 1,706.60	14	\$ 23,892.40	
Onboard Network card,2X10GE Port(82599)	02311EUU	1	\$ 1,139.50	14	\$ 15,953.00	
8056 Plus Fan module	02310YKP	1	\$ 45.58	56	\$ 2,552.48	
3*8X Riser Card Module	02310YKQ	1	\$ 126.14	14	\$ 1,765.96	
2*2.5" Rear Hard Disk Backplane Module	02311DUP	1	\$ 62.54	14	\$ 875.56	
750W platinum AC power supply unit	02310QWX	1	\$ 295.74	28	\$ 8,280.72	
Intel Xeon E5-2697A v4(with Heatsink)	02311NFD	1	\$ 6,857.14	28	\$ 191,999.92	\$ 15,176.00
32GB,288pin,0.83ns,2400000KHz,1.2V,ECC,2Rank(2G*4bit)	6200214	1	\$ 634.94	112	\$ 71,113.28	
480GB,SATA 6Gb/s,Mixed Use,2.5inch,VE Series	02311LTP	1	\$ 1,260.34	14	\$ 17,644.76	
900GB,SAS 12Gb/s,10000rpm,2.5inch	02311HAL	1	\$ 592.54	224	\$ 132,728.96	
SSD,800GB,SAS 12Gb/s,Write Intensive	02311HAG	1	\$ 3,433.34	14	\$ 48,066.76	
LSI 3108 RAID CARD-Support SuperCap	02310YMF	1	\$ 694.30	14	\$ 9,720.20	
LSI Flash Card,8GB,TFM,Supercap and 620mm Cable Moudle	02311BNX	1	\$ 386.90	14	\$ 5,416.60	
Network Card, Gigabit, RJ45 Copper, 2 ports, PCIE 2.0 x4-8086-1521-2	6310070	1	\$ 60.92	14	\$ 852.88	
<i>SubTotal</i>					\$ 530,863.48	\$ 15,176.00

(continued next page)



Huawei FusionServer for Big Data

TPCx-BB Rev. 1.2.0
 TPC-Pricing Rev. 2.0.0

Report Date:
 February 16, 2017

Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Year Maint. Price
(continued from previous page)						
<u>Network</u>						
Huawei S5700-28X-LI-AC Switch	2354215	1	\$ 2,730.56	1	\$ 2,730.56	
Huawei CE6810-48S-LI Switch	02350AQC	1	\$ 8,776.80	1	\$ 8,776.80	
Optical Transceiver,SFP+,10G,Multi-mode Module	2318169	1	\$ 270.40	16	\$ 4,326.40	\$ 6,192.72
HUAWEI VTL6900 42U AC CABINET (RACK-42U-VTL)	2114327	1	\$ 2,139.99	1	\$ 2,139.99	
Patch cord-LC/PC-LC/PC-Multimode-A1b-2mm-10m-PVC-Orange	14130222	1	\$ 14.40	20	\$ 288.00	
				<i>SubTotal</i>	\$ 18,261.75	\$ 6,192.72
<u>Monitor / Keyboard / Mouse (includes 2 spares each)</u>						
Lenovo ThinkVision T2424p 23.8-inch FHD LED Backlit LCD Monitor	9SIAA0T56C4340	2	\$ 198.19	3	\$ 594.57	
Lenovo 73P2620 Black 104 Normal Keys USB Wired Standard Keyboard	9SIA1N82KJ2787	2	\$ 40.79	3	\$ 122.37	
lenovo 41U3074 Black 1 x Wheel USB Wired Laser 2000 dpi Mouse	N82E16826509009	2	\$ 30.99	3	\$ 92.97	
				<i>SubTotal</i>	\$ 809.91	\$ -
<u>Server Software</u>						
Cloudera Ent Basic Ed 1yr 24x7	G7M 27A	1	\$ 2,304.00	48	\$ 110,592.00	Included
RHEL Svr 2 Sckt/2 Gst 3yr 24x7 E-LTU	G3J30AAE	1	\$ 3,889.00	16	\$ 62,224.00	Included
				<i>SubTotal</i>	\$ 172,816.00	\$ -
				Total Extended Price	\$772,760.82	\$ 23,536.72
				Total Discounts	\$ 389,437.69	\$ 11,768.36
				Totals	\$383,323.13	\$ 11,768.36

Pricing: 1 = Huawei; 2 = newegg.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	\$395,092
	BBQ pm@3000	611.31
	\$/BBQ pm@3000	\$646.31

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.



Huawei FusionServer for Big Data

TPCx-BB Rev. 1.2.0
TPC-Pricing Rev. 2.0.0

Report Date:
February 16, 2017

Numerical Quantities

Scale Factor	3000
Streams	8
SUT Validation Status	PASS

Performance Run

Overall Run Start Time	2016-12-15 01:26:32.856
Overall Run End Time	2016-12-15 20:59:00.827
Overall Run Elapsed Time	70,347.971

Load Test Start Time	2016-12-15 01:26:32.858
Load Test End Time	2016-12-15 01:48:15.091
Load Test Elapsed Time	1,302.233

Power Test Start Time	2016-12-15 01:48:15.096
Power Test End Time	2016-12-15 06:19:49.545
Power Test Elapsed Time	16,294.449

Throughput Test Start Time	2016-12-15 06:19:49.547
Throughput Test End Time	2016-12-15 20:59:00.826
Throughput Test Elapsed Time	52,751.279

Performance Metric (BBQpm@3000)	611.3126475
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Repeatability Run

Overall Run Start Time	2016-12-14 05:43:20.920
Overall Run End Time	2016-12-15 01:14:22.530
Overall Run Elapsed Time	70,261.610

Load Test Start Time	2016-12-14 05:43:20.922
Load Test End Time	2016-12-14 06:05:13.001
Load Test Elapsed Time	1,312.079

Power Test Start Time	2016-12-14 06:05:13.006
Power Test End Time	2016-12-14 10:34:07.454
Power Test Elapsed Time	16,134.448

Throughput Test Start Time	2016-12-14 10:34:07.456
Throughput Test End Time	2016-12-15 01:14:22.529
Throughput Test Elapsed Time	52,815.073

Performance Metric (BBQpm@SF)	611.7619714
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Run Report – Run 1

```
*****
TPCx-BB
Result
v1.2
*****
INFO: T_LOAD = 1312.079
INFO: T_LD = 0.1 * T_LOAD: 131.2079
INFO: T_PT = 11453.722479841466
INFO: T_T_PUT = 52815.073
INFO: T_TT = 6601.884125
INFO: === Checking validity of the final result ===
INFO: OK: All required BigBench phases were performed.
INFO: OK: All 30 queries were running in the power test.
INFO: OK: All 30 queries were running in the first throughput test.
INFO: OK: Pretend mode was inactive. All commands were executed.
INFO: === Final result ===
INFO: VALID BBQpm@3000 = 611.7619714266989
```

Run Report – Run 2

```
*****
TPCx-BB
Result
v1.2
*****
INFO: T_LOAD = 1302.233
INFO: T_LD = 0.1 * T_LOAD: 130.2233
INFO: T_PT = 11487.29127343826
INFO: T_T_PUT = 52751.279
INFO: T_TT = 6593.909875
INFO: === Checking validity of the final result ===
INFO: OK: All required BigBench phases were performed.
INFO: OK: All 30 queries were running in the power test.
INFO: OK: All 30 queries were running in the first throughput test.
INFO: OK: Pretend mode was inactive. All commands were executed.
INFO: === Final result ===
INFO: VALID BBQpm@3000 = 611.3126474853556
```

Summary details of the run reports are shown above. For the complete run reports, see the Support Files Archive.