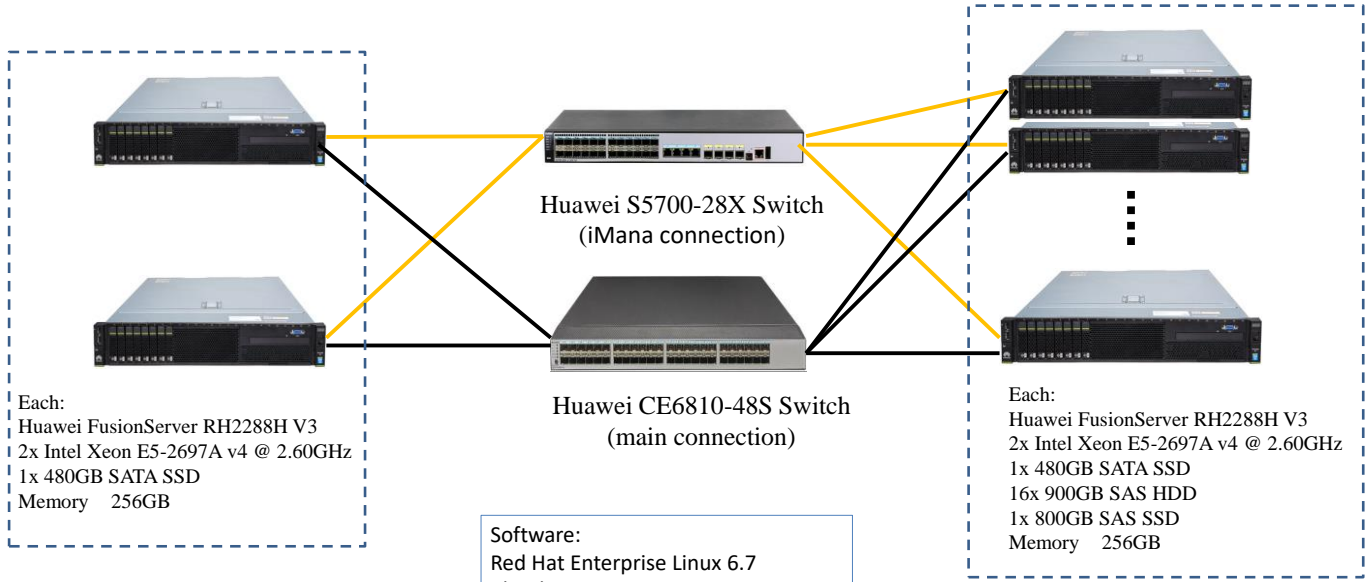
		<b>Huawei FusionServer for Big Data</b>			TPCx-BB Rev. 1.2.0 TPC-Pricing Rev. 2.0.0	
					Report Date: February 16, 2017	
Total System Cost		TPCx-BB Performance Metric			Price/Performance	
<b>395,092 USD</b>		<b>366.69</b> BBQpm@1000			<b>1,077.44 USD</b> \$/BBQpm@1000	
Framework	Operating System	Other Software	Availability Date	Scale Factor	Streams	
Cloudera for Apache Hadoop (CDH) 5.8	Red Hat Enterprise Linux Server 6.7	None	December 7, 2016	1000	8	
<b>System Configuration</b>						
 <p>Each:          Huawei FusionServer RH2288H V3          2x Intel Xeon E5-2697A v4 @ 2.60GHz          1x 480GB SATA SSD          Memory 256GB</p> <p>2 Management Nodes</p> <p>Each:          Huawei FusionServer RH2288H V3          2x Intel Xeon E5-2697A v4 @ 2.60GHz          1x 480GB SATA SSD          16x 900GB SAS HDD          1x 800GB SAS SSD          Memory 256GB</p> <p>14 Worker Nodes</p> <p>Software:          Red Hat Enterprise Linux 6.7          Cloudera Enterprise 5.8</p>						
Physical Storage/Scale Factor: 220.48				Scale Factor/Physical Memory: 0.24		
Servers: Total Processors/Cores/Threads		16x RH2288H V3 32/512/1024				
Server Configuration: Processors Memory Storage Controller Storage Device		<b>Per RH2288H V3:</b> 2x Intel Xeon E5-2697A v4 @ 2.60GHz 256GB LSI 3108 RAID Card 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

<sup>(1)</sup> 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**

<b>Three-Year Cost of Ownership</b>	<b>\$395,092</b>
<b>BBQ pm@1000</b>	<b>366.69</b>
<b>\$/BBQ pm@1000</b>	<b>\$1,077.44</b>

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](mailto: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	1000
Streams	8
SUT Validation Status	TRUE

#### Performance Run

Overall Run Start Time	2016-12-13 07:20:27.081
Overall Run End Time	2016-12-13 16:45:05.843
Overall Run Elapsed Time	33,878.762

Load Test Start Time	2016-12-13 07:20:27.082
Load Test End Time	2016-12-13 07:32:58.426
Load Test Elapsed Time	751.344

Power Test Start Time	2016-12-13 07:32:58.431
Power Test End Time	2016-12-13 10:33:27.374
Power Test Elapsed Time	10,828.943

Throughput Test Start Time	2016-12-13 10:33:27.375
Throughput Test End Time	2016-12-13 16:45:05.843
Throughput Test Elapsed Time	22,298.468

Performance Metric (BBQpm@1000)	366.6978534
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#### Repeatability Run

Overall Run Start Time	2016-12-13 16:52:43.512
Overall Run End Time	2016-12-14 02:09:07.379
Overall Run Elapsed Time	33,383.867

Load Test Start Time	2016-12-13 16:52:43.514
Load Test End Time	2016-12-13 17:05:22.502
Load Test Elapsed Time	758.988

Power Test Start Time	2016-12-13 17:05:22.507
Power Test End Time	2016-12-13 20:01:27.468
Power Test Elapsed Time	10,564.961

Throughput Test Start Time	2016-12-13 20:01:27.470
Throughput Test End Time	2016-12-14 02:09:07.379
Throughput Test Elapsed Time	22,059.909

Performance Metric (BBQpm@1000)	370.5561682
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### Run Report – Run 1

```
*****
TPCx-BB
Result
v1.2
*****
INFO: T_LOAD = 751.344
INFO: T_LD = 0.1 * T_LOAD: 75.13440000000001
INFO: T_PT = 8381.956751650918
INFO: T_T_PUT = 22298.468
INFO: T_TT = 2787.3085
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@1000 = 366.697853361945
```

### Run Report – Run 2

```
*****
TPCx-BB
Result
v1.2
*****
INFO: T_LOAD = 758.988
INFO: T_LD = 0.1 * T_LOAD: 75.89880000000001
INFO: T_PT = 8291.716624644496
INFO: T_T_PUT = 22059.909
INFO: T_TT = 2757.488625
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@1000 = 370.5561682041379
```

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