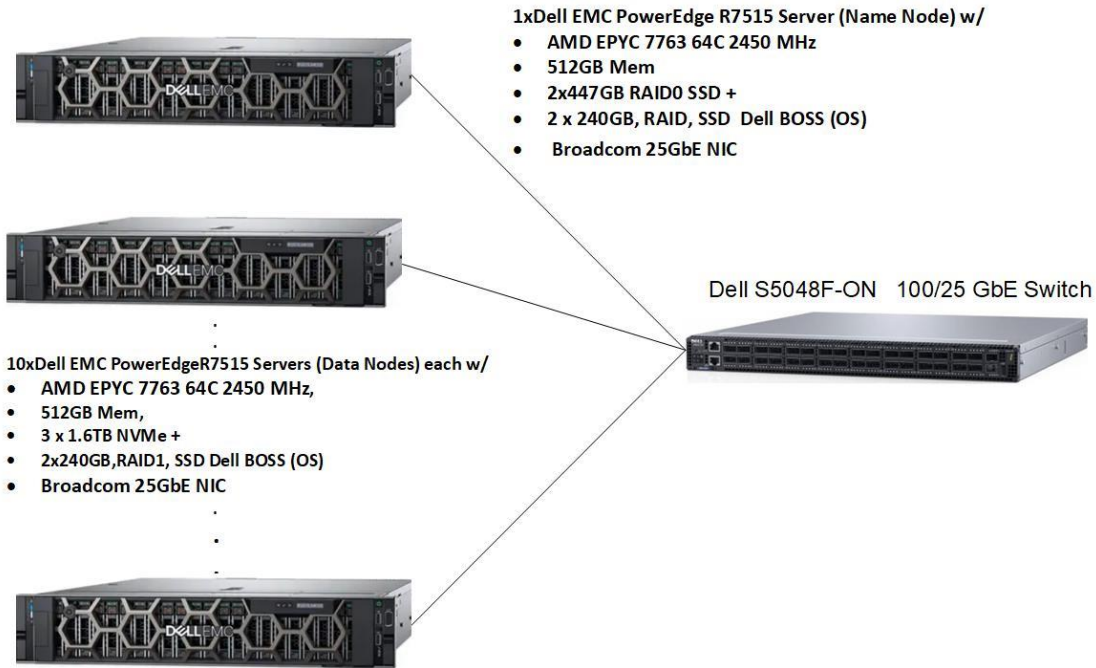
	Dell PowerEdge R7515	TPCx-BB Rev. 1.5.0 TPC-Pricing Rev. 2.7.0
		Report Date: March 15, 2021
Total System Cost	TPCx-BB Performance Metric	Price/Performance
753,292 USD	1,544.13 BBQpm@3000	487.85 USD \$/BBQpm@3000

Framework	Operating System	Other Software	Availability Date	Scale Factor	Streams
Cloudera CDP 7.1.4	SUSE Linux Enterprise Server 12 SP5	None	March 15, 2021	3000	7

System Configuration



Physical Storage/Scale Factor: 18.08	Scale Factor/Physical Memory: 0.53	Main Data Redundancy Model: 3-way replication
Servers:	11x PowerEdge R7515 / PowerEdge R7515	
Total Processors/Cores/Threads	11/704/1,408	
Server Configuration:	1x PowerEdge R7515 (Name Node):	10x PowerEdge R7515 (Data Node):
Processors	1x AMD EPYC 7763 64-Core Processor	1x AMD EPYC 7763 64-Core Processor
Memory	512 GiB	512 GiB
Storage Controller	HBA330 12Gbps SAS HBA	n/a
Storage Device	2x 240 GB BOSS M.2 SSD 2x 480 GB SATA SSD	2x 240 GB BOSS M.2 SSD 3x 1.6 TB NVMe+
Network Controller	Broadcom 25 GbE NIC	Broadcom 25 GbE NIC
Connectivity:	Dell S5048F-ON 100/25 GbE Switch	



Dell PowerEdge R7515

TPCx-BB Rev. 1.5.0
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Report Date:
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Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Yr. Maint.	Price
HARDWARE COMPONENTS							
PowerEdge R7515 -Worker Nodes							
			1	\$61,361.38	10	\$613,613.80	
2.5 Chassis	379-BDTF		1		10		
NVMe Backplane	379-BDSX		1		10		
PowerEdge R7515 Server	210-ASVQ		1		10		
No Trusted Platform Module	461-AADZ		1		10		
2.5" Chassis with up to 24 NVMe Drives	321-BERW		1		10		
AMD 7763 2.45GHz,64C/128T,256M,280W,3200	338-BZRR		1		10		
Standard Heatsink	412-AASE		1		10		
Performance Optimized	370-AAIP		1		10		
3200MT/s RDIMMs	370-AEVR		1		10		
C30, No RAID for NVME chassis	780-BCDO		1		10		
No Controller	405-AACD		1		10		
CFI,STANDARD OPTION NOT SELECTED	692-BBBB		1		10		
Performance BIOS Settings	384-BBBL		1		10		
UEFI BIOS Boot Mode with GPT Partition	800-BBDM		1		10		
No Additional Mid Fan	384-BBSO		1		10		
Dual, Hot-plug, Redundant Power Supply (1+1), 1100W	450-ADWM		1		10		
Riser Config 2, 2 x 16 FH + 2 x 16 LP PCIe slot	330-BBNL		1		10		
PowerEdge R7515 Motherboard,MLK	384-BCUN		1		10		
iDRAC9,Enterprise 15G	385-BBOT		1		10		
PowerEdge R7515 Motherboard, with 2x1Gb Onboard LOM (BCM5720) V2	384-BCNQ		1		10		
PowerEdge 2U Standard Bezel	350-BBWP		1		10		
BOSS controller card + with 2 M.2 Sticks 240G (RAID 1),FH	403-BCHP		1		10		
No Quick Sync	350-BBKU		1		10		
iDRAC,Legacy Password	379-BCSG		1		10		
iDRAC Group Manager, Enabled	379-BCQV		1		10		
Enterprise Linux OS, Non Factory Installed, Requires Subscription	605-BBFL		1		10		
No Media Required	605-BBFN		1		10		
ReadyRails Sliding Rails	770-BBBQ		1		10		
No Internal Optical Drive	429-AAIQ		1		10		
No Systems Documentation, No OpenManage DVD Kit	631-AACK		1		10		
PowerEdge R7515 Shipping	340-CMZG		1		10		
PowerEdge R7515 Ship Material	340-CODN		1		10		
PowerEdge R7515 CCC Marking, No CE Marking	343-BBPQ		1		10		
GCP Operations Management	929-8509		1		10		
Basic Next Business Day 36 Months	709-BBFM		1		10		Included
Prosupport Plus and 4Hr Mission Critical Initial, 36 Month(s)	865-BBNF		1		10		Included
On-Site Installation Declined	900-9997		1		10		
64GB RDIMM, 3200MT/s, Dual Rank	370-AEVP		1		80		
1.6TB Enterprise NVMe Mixed Use AG Drive U.2 Gen4 with carrier	400-BKGF		1		30		
Jumper Cord - C13/C14, 4M, 250V, 12A (North America, Guam, North	492-BBDV		1		20		
Broadcom 57414 Dual Port 10/25GbE SFP28 Adapter, Mezz Card	540-BCKU		1		10		
SUSE Linux Enterprise Server, 1-2 SKT w Unlimited VMs, L3 Subscription, 3 \	528-CHFF		1		10		

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Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Yr. Maint. Price
PowerEdge R7515 - Master Node				1	\$53,965.14	
2.5 Chassis	379-BDTF			1		
SAS/SATA Backplane	379-BDSS			1		
PowerEdge R7515 Server	210-ASVQ			1		
No Trusted Platform Module	461-AADZ			1		
2.5" Chassis with up to 24 Hot Plug Hard Drives	321-BERX			1		
AMD 7763 2.45GHz,64C/128T,256M,280W,3200	338-BZRR			1		
Standard Heatsink	412-AASE			1		
Performance Optimized	370-AAIP			1		
3200MT/s RDIMMs	370-AEVR			1		
No RAID	780-BCDI			1		
HBA330 12Gbps SAS HBA Controller (NON-RAID), Minicard	405-AAJU			1		
Performance BIOS Settings	384-BBBL			1		
UEFI BIOS Boot Mode with GPT Partition	800-BBDM			1		
High Performance Fan	750-AAWT			1		
Dual, Hot-plug, Redundant Power Supply (1+1), 1100W	450-ADWM			1		
Riser Config 2, 2 x 16 FH + 2 x 16 LP PCIe slot	330-BBNL			1		
PowerEdge R7515 Motherboard,MLK	384-BCUN			1		
iDRAC9,Enterprise 15G	385-BBOT			1		
PowerEdge R7515 Motherboard, with 2x1Gb Onboard LOM (BCM5720) V2	384-BCNQ			1		
PowerEdge 2U Standard Bezel	350-BBWP			1		
BOSS controller card + with 2 M.2 Sticks 240G (RAID 1),FH	403-BCHP			1		
No Quick Sync	350-BBKU			1		
iDRAC,Legacy Password	379-BCSG			1		
iDRAC Group Manager, Enabled	379-BCQV			1		
Enterprise Linux OS, Non Factory Installed, Requires Subscription	605-BBFL			1		
No Media Required	605-BBFN			1		
ReadyRails Sliding Rails	770-BBBQ			1		
No Internal Optical Drive	429-AAIQ			1		
No Systems Documentation, No OpenManage DVD Kit	631-AAACK			1		
PowerEdge R7515 Shipping	340-CMZG			1		
PowerEdge R7515 Ship Material	340-CODN			1		
PowerEdge R7515 CCC Marking, No CE Marking	343-BBPQ			1		
GCP Operations Management	929-8509			1		
Basic Next Business Day 36 Months	709-BBFM			1		Included
Prosupport Plus and 4Hr Mission Critical Initial, 36 Month(s)	865-BBNF			1		Included
On-Site Installation Declined	900-9997			1		
64GB RDIMM, 3200MT/s, Dual Rank	370-AEVP			1	8	
480GB SSD SATA Read Intensive 6Gbps 512 2.5in Hot-plug AG Drive,	400-AXTV			1	2	
Jumper Cord - C13/C14, 4M, 250V, 12A (North America, Guam, North	492-BBDV			1	2	
Broadcom 57414 Dual Port 10/25GbE SFP28 Adapter, PCIe Low Profile	540-BBVK			1		
SUSE Linux Enterprise Server, 1-2 SKT w Unlimited VMs, L3 Subscription, 3 \528-CHFF				1	1	

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Description	Part Number	Source	Unit Price	Qty	Extended Price	3 Yr. Maint. Price
PowerSwitch S5248-ON			1		\$41,049.37	
Dell EMC S5248F-ON Switch, 48x25GbE SFP28, 4x100GbE QSFP28,	210-APEX	1		1		
Dell EMC S52XX-ON Series User Guide	343-BBLP	1		1		
OS10 Enterprise, S5248F-ON	634-BRUN	1		1		
Dell Hardware Limited Warranty 1 Year	818-4856	1		1		Included
ProSupport Plus:Mission Critical 4-Hour 7x24 On-Site Service with Emerger	818-4898	1		1		Included
ProSupport Plus Mission Critical:7x24 HW/SW Technical Support and Assis	818-4901	1		1		Included
ProSupport Plus:Mission Critical 4-Hour 7x24 On-Site Service with Emerger	818-4902	1		1		Included
Dell Limited Hardware Warranty Extended Year(s)	975-3461	1		1		Included
Info 3rd Party Software Warranty provided by Vendor	997-6306	1		1		
On-Site Installation Declined	900-9997	1		1		
Dell Networking, Cable, SFP+ to SFP+, 10GbE, Active Optical (Optics include	470-ABME	1		11		
Power Cord, 125V, 15A, 10 Feet, NEMA 5-15/C13	450-AAFH	1		1		
Power Cord, 125V, 15A, 10 Feet, NEMA 5-15/C13	450-AAFH	1		1		
APC NetShelter SX Deep Enclosure - Rack - cabinet - black - 24U - 18-inch	A7522217	1	\$1,129.99	1	\$1,129.99	
APC Basic Rack PDU AP9567 - 0U - 120V NEMA 5-15 Input / (14) NEMA 5-15						
Output	A7541362	1	\$189.99	1	\$189.99	
24 Inch LED monitor VE248Q - Widescreen Full HD Monitor	A6732050	1	\$136.99	1	\$136.99	
Logitech MK200 Media Keyboard and Mouse Combo	A6859396	1	\$24.99	1	\$24.99	
HARDWARE COMPONENTS					Subtotal	\$710,110.27
SOFTWARE COMPONENTS						
Cloudera CDP - 3 year 24x7 support		1	\$40,800.00	11	\$448,800.00	
SOFTWARE COMPONENTS					Subtotal	\$448,800.00
TOTAL						\$1,158,910.27
Large Purchase Discount (35%)*						-\$405,618.59

Pricing:1 = {Source 1}; 2 = {Source 2}

⁽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	\$753,292
BBQpm@3000	1,544.13
\$/BBQpm@3000	\$ 487.85

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.



Dell PowerEdge R7515

TPCx-BB Rev. 1.5.0
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Numerical Quantities

Scale Factor	3000
Streams	7
SUT Validation Test	PASS

Performance Run (Run 1)

Overall Run Start Time	2021-03-09 06:59:44.024
Overall Run End Time	2021-03-09 15:36:16.763
Overall Run Elapsed Time	30,992.739
Load Test Start Time	2021-03-09 06:59:44.024
Load Test End Time	2021-03-09 07:07:37.124
Load Test Elapsed Time	473.100
Power Test Start Time	2021-03-09 07:07:37.126
Power Test End Time	2021-03-09 08:41:09.654
Power Test Elapsed Time	5,612.528
Throughput Test Start Time	2021-03-09 08:41:09.655
Throughput Test End Time	2021-03-09 15:36:16.763
Throughput Test Elapsed Time	24,907.108
Performance Metric (BBQpm@ 3000)	1,544.13

Repeatability Run (Run 2)

Overall Run Start Time	2021-03-09 15:58:49.796
Overall Run End Time	2021-03-10 00:33:45.551
Overall Run Elapsed Time	30,895.755
Load Test Start Time	2021-03-09 15:58:49.796
Load Test End Time	2021-03-09 16:06:42.485
Load Test Elapsed Time	472.689
Power Test Start Time	2021-03-09 16:06:42.487
Power Test End Time	2021-03-09 17:40:33.047
Power Test Elapsed Time	5,630.560
Throughput Test Start Time	2021-03-09 17:40:33.047
Throughput Test End Time	2021-03-10 00:33:45.551
Throughput Test Elapsed Time	24,792.504
Performance Metric (BBQpm@ 3000)	1,547.29



Dell PowerEdge R7515

TPCx-BB Rev. 1.5.0
TPC-Pricing Rev. 2.7.0

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Performance Run Report (Run 1)

```
*****
TPCx-BB
Result
v1.5
*****
INFO: T_LOAD = 473.1
INFO: T_LD = 0.1 * T_LOAD: 47.31
INFO: T_PT = 3344.72753844527
INFO: T_T_PUT = 24907.108
INFO: T_TT = 3558.15828571428
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 = 1544.13535691466
```

Repeatability Run Report (Run 2)

```
*****
TPCx-BB
Result
v1.5
*****
INFO: T_LOAD = 472.689
INFO: T_LD = 0.1 * T_LOAD: 47.2689
INFO: T_PT = 3346.39272029584
INFO: T_T_PUT = 24792.504
INFO: T_TT = 3541.78628571428
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 = 1547.29014415038
```

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