



PowerEdge R7525 Server

TPC-H Rev. 3.0.0
 TPC Pricing Rev. 2.7.0

Report Date:
 Dec 15, 2021

Total System Cost

\$379,133 USD

Composite Query per Hour Rating

960,382.0
 QphH@10000 GB

Price/Performance

\$394.78
 \$/kQphH@10000GB

Database Size

10,000 GB

Database Manager

Microsoft® SQL Server
 2019
 Enterprise Edition

Operating System

Red Hat® Enterprise
 Linux® 8.3

Other Software

N/A

Availability Date

Dec 15, 2021



Database load Time = 00D 09H 57M 03S

Storage Redundancy Level

Load Includes Backup: Y

Base Tables and Auxiliary Data Structures

No RAID

Total Data Storage/Database Size = 6.65

DBMS Temporary Space

No RAID

Percentage Memory/ Database size = 41.0 %

OS and DBMS Software

RAID 1

Log

RAID 10

System Configuration:

Dell PowerEdge R7525 Server (2S)

Processors/Model:

2 * AMD EPYC 73F3 3.5GHz, 16C/32T, 256M Cache (240W) DDR4-3200

Cores/Threads:

32C/64T

Memory:

4096 GiB

Storage:

**BOSS controller card + with 2, 480GB ,
 10 * 1.92TB SSD SAS Mix Use 12Gbps ,
 8 * 6.4TB Enterprise NVMe Mixed Use AG Drive U.2 Gen4**

Total Storage:

66,459 GiB



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Description	Part Number	Source	Unit Price	Qty	Ext. Price \$	3 Yr Maint. Price
PowerEdge R7525 Server	210-AUVQ	1	\$200.00	1	\$200.00	
SAS/SATA/NVMe Capable Backplane	379-BDSW	1	\$0.00	1	\$0.00	
Trusted Platform Module 2.0 V3	461-AAIG	1	\$99.00	1	\$99.00	
16X 2.5 SAS/SATA + 8X 2.5 NVMe without XGMI	321-BFEE	1	\$610.00	1	\$610.00	
AMD EPYC 73F3 3.5GHz, 16C/32T, 256M Cache (240W) DDR4-3200	338-BZZJ	1	\$6,099.00	2	\$12,198.00	
Additional Processor Selected	379-BDCO	1	\$0.00	1	\$0.00	
Heatsink for 2 CPU + GPU/FPGA/Full Length card configs configuration	412-AASZ	1	\$199.00	1	\$199.00	
Performance Optimized	370-AAIP	1	\$0.00	1	\$0.00	
3200MT/s LRDIMMs	370-AFNV	1	\$0.00	1	\$0.00	
128GB LRDIMM, 3200MT/s, QuadRank	370-AGEW	1	\$6,249.00	32	\$199,968.00	
Unconfigured RAID	780-BCDS	1	\$0.00	1	\$0.00	
PERC H755 SAS Front	405-AAZB	1	\$1,449.00	1	\$1,449.00	
Front PERC Mechanical Parts,rear load	750-ACFQ	1	\$0.00	1	\$0.00	
1.92TB SSD SAS Mix Use 12Gbps 512e 2.5in Hot-plug AG Drive,3 DWPD	400-AZOY	1	\$3,449.00	10	\$34,490.00	
6.4TB Enterprise NVMe Mixed Use AG Drive U.2 Gen4 with carrier	400-BKGI	1	\$10,529.00	8	\$84,232.00	
Performance BIOS Settings	384-BBBL	1	\$0.00	1	\$0.00	
UEFI BIOS Boot Mode with GPTPartition	800-BBDM	1	\$0.00	1	\$0.00	
Very High Performance Fan x6	750-ACSM	1	\$289.00	1	\$289.00	
Dual, Hot-Plug, Power Supply 2400W Redundant, D Mixed Mode	450-AJEV	1	\$2,099.00	1	\$2,099.00	
Jumper Cord - C13/C14, 0.6M,250V, 13A (North American, Guam, North Marianas, Philippines, Samoa)	492-BBDH	1	\$20.00	2	\$40.00	
Riser Config 3, Half Length,5 x16 slots	330-BBPI	1	\$469.00	1	\$469.00	
R7525 Motherboard with LOM,MLK	384-BCUP	1	\$0.00	1	\$0.00	
iDRAC9,Enterprise 15G	385-BBOT	1	\$489.00	1	\$489.00	
Broadcom 57414 Dual Port 10/25GbE SFP28, OCP NIC 3.0	540-BCOC	1	\$709.00	1	\$709.00	
PowerEdge 2U Standard Bezel	325-BCHU	1	\$49.00	1	\$49.00	
BOSS controller card + with 2 M.2 Sticks 480GB (RAID 1),LP	403-BCHH	1	\$1,499.00	1	\$1,499.00	
Quick Sync 2 (At-the-box mgmt)	350-BBYW	1	\$89.00	1	\$89.00	
iDRAC,Legacy Password	379-BCSG	1	\$0.00	1	\$0.00	
iDRAC Group Manager, Enabled	379-BCQV	1	\$0.00	1	\$0.00	
No Operating System	611-BBBF	1	\$0.00	1	\$0.00	
No Media Required	605-BBFN	1	\$0.00	1	\$0.00	
ReadyRails Sliding Rails	770-BBBQ	1	\$149.00	1	\$149.00	
Assembly BOSS Blank	329-BERC	1	\$0.00	1	\$0.00	
Fan Foam, HDD 2U	750-ACOM	1	\$0.00	1	\$0.00	
No Systems Documentation, NoOpenManage DVD Kit	631-AACK	1	\$0.00	1	\$0.00	
PowerEdge R7525 Shipping	340-COFR	1	\$0.00	1	\$0.00	
R7525 Shipping Material	481-BBFE	1	\$0.00	1	\$0.00	
PowerEdge R7525 no CE or with CCC Marking	389-DUZG	1	\$0	1	\$0.00	
Prosupport and 4 Hrs Mission Critical (36 Months)	865-BBNB	1	\$13,116	1	\$0.00	\$13,115.52
Basic Next Business Day 36 Months	709-BBFM	1	\$200.01	1	\$0.00	\$200.01
				Sub Total	\$339,326.00	\$13,315.53
Large Purchase Discount (56%)				Discounted Price	-190,022.56	-7,456.70
				Server Subtotal	149,303.44	5,858.83
Logitech MK120 USB Keyboard and Mouse Combo (1+2 SPARE)	A6999510	1	\$19.99	3	59.97	
Dell 22 Monitor - E2220H, 54.7cm (21.5")	210-AUNF	1	\$235.49	1	\$235.49	
Dell Limited Hardware Warranty	814-9340	1	\$4.50	1	\$4.50	
Advanced Exchange Service, 3 Years	814-9341	1	\$0.00	1	\$0.00	
				Peripheral Subtotal	\$299.96	
				Discounted Price	-71.99	
				Peripheral Subtotal	227.97	
				Hardware Subtotal	149,531.41	
SOFTWARE						
SQL SERVER 2019 Enterprise Edition for LINUX (2 cores license, 32 Cores)	NA	2	\$13,748.00	16	219,968.00	
Red Hat Enterprise Linux Server, Premium (Physical or Virtual Nodes), 3 Year x 1	RH00003F3	1	\$3,515.20	1	3,515.20	
Microsoft Problem Resolution Services	NA	2	\$259.00	1		259.00
				Software Subtotal	223,483.20	259.00
				Total	373,014.61	6,117.83
Source: 1: DELLEMC 2. MICROSOFT						
Audited by Doug Johnson of InfoSizing (www.sizing.com)		Three Year cost Ownership				\$379,133.00
All discounts are based on US list prices and for similar quantities and configurations. The discounts was 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.		QphH @10,000				960,382.00
Dell EMC Sales Contact: Microsoft.Assist@dell.com		\$/kQphH @10,000				\$394.78
Windows and SQL Server Sales Contact: Microsoft Corporation, One Microsoft Way, Redmond, WA 98052 6399 (425) 882 8080						
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 the TPC at pricing@tpc.org. Thank you.						



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Numerical Quantities

Measurement Results

Database Scale Factor	10,000
Total Data Storage / Database Size	6.65
Percentage Memory / Database Size	41.0 %
Start of Database Load	12-10-2021 2:40:35 AM
End of Database Load	12-10-2021 12:37:38 PM
Database Load Time h m s	00d 09h 57m 03s
Query Streams for Throughput Test	9
TPC-H Power	1,213,443.2
TPC-H Throughput	760,096.2
TPC-H Composite Query-per-Hour (QphH@10,000 GB)	960,382.0
Total System Price over 3 Years (\$ USD)	\$379,133.0
TPC-H Price/Performance Metric (\$ USD / kQphH@10,000 GB)	\$394.78

Measurement Interval

Measurement Interval in Throughput Test (Ts)	9,377.76 Seconds
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Duration of Stream Execution

Power Run	Seed	Query Start Time	Total Time	RF1 Start Time	RF2 Start Time
		Query End Time	(hh:mm:ss)	RF1 End Time	RF2 End Time
	1210123738	2021-12-10 16:26:47	00:16:32	2021-12-10 16:23:25	2021-12-10 16:43:21
		2021-12-10 16:43:19		2021-12-10 16:26:45	2021-12-10 16:48:55
Throughput Stream	Seed	Query Start Time	Total Time	RF1 Start Time	RF2 Start Time
		Query End Time	(hh:mm:ss)	RF1 End Time	RF2 End Time
1	1210123739	2021-12-10 16:48:54	02:28:36	2021-12-10 16:48:54	2021-12-10 16:52:30
		2021-12-10 19:17:30		2021-12-10 16:52:30	2021-12-10 17:00:47
2	1210123740	2021-12-10 16:48:54	02:35:24	2021-12-10 17:00:47	2021-12-10 17:04:10
		2021-12-10 19:24:18		2021-12-10 17:04:09	2021-12-10 17:12:36
3	1210123741	2021-12-10 16:48:54	02:27:14	2021-12-10 17:12:36	2021-12-10 17:16:05
		2021-12-10 19:16:08		2021-12-10 17:16:05	2021-12-10 17:24:44
4	1210123742	2021-12-10 16:48:54	02:24:31	2021-12-10 17:24:44	2021-12-10 17:28:13
		2021-12-10 19:13:25		2021-12-10 17:28:13	2021-12-10 17:35:44
5	1210123743	2021-12-10 16:48:54	02:35:21	2021-12-10 17:35:44	2021-12-10 17:39:24
		2021-12-10 19:24:15		2021-12-10 17:39:24	2021-12-10 17:48:20
6	1210123744	2021-12-10 16:48:54	02:36:01	2021-12-10 17:48:20	2021-12-10 17:52:08
		2021-12-10 19:24:55		2021-12-10 17:52:08	2021-12-10 17:59:59
7	1210123745	2021-12-10 16:48:54	02:33:34	2021-12-10 17:59:59	2021-12-10 18:03:25
		2021-12-10 19:22:28		2021-12-10 18:03:25	2021-12-10 18:11:09
8	1210123746	2021-12-10 16:48:54	02:25:32	2021-12-10 18:11:09	2021-12-10 18:14:32
		2021-12-10 19:14:26		2021-12-10 18:14:32	2021-12-10 18:22:40
9	1210123747	2021-12-10 16:48:54	02:36:18	2021-12-10 18:22:40	2021-12-10 18:26:11
		2021-12-10 19:25:12		2021-12-10 18:26:11	2021-12-10 18:34:11



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TPC-H Timing Intervals (Seconds)

Query	Stream 0	Stream 1	Stream 2	Stream 3	Stream 4	Stream 5	Stream 6	Stream 7	Stream 8	Stream 9	QI Min	QI Avg	QI Max
Q1	21.34	175.03	201.01	282.41	481.52	448.12	392.95	155.19	178.30	408.34	21.34	274.42	481.52
Q2	5.37	89.99	81.84	114.52	81.24	97.71	75.12	124.30	76.77	91.61	5.37	83.85	124.30
Q3	36.73	564.51	445.29	245.25	465.21	762.71	297.35	413.59	387.41	464.61	36.73	408.27	762.71
Q4	37.32	202.62	295.03	577.82	219.01	463.62	304.50	708.52	352.90	487.32	37.32	364.87	708.52
Q5	43.65	841.87	611.11	314.31	373.68	661.85	334.06	378.03	710.99	163.72	43.65	443.33	841.87
Q6	0.84	17.88	2.61	42.06	48.37	19.08	26.47	3.84	23.53	58.57	0.84	24.33	58.57
Q7	30.32	347.54	297.63	315.56	282.94	310.18	422.38	465.74	876.90	355.41	30.32	370.46	876.90
Q8	45.24	703.24	598.53	379.18	606.70	307.43	383.77	368.20	425.78	384.62	45.24	420.27	703.24
Q9	122.70	777.55	1,046.84	640.91	756.53	667.00	1,487.93	1,107.09	789.20	991.90	122.70	838.77	1,487.93
Q10	17.03	412.44	595.74	465.85	172.29	148.05	173.81	115.18	596.69	472.66	17.03	316.97	596.69
Q11	36.60	134.68	78.45	96.65	86.03	95.12	76.64	77.39	83.60	123.07	36.60	88.82	134.68
Q12	12.64	302.81	284.01	117.97	337.76	378.74	558.53	73.37	72.00	463.97	12.64	260.18	558.53
Q13	184.12	1,173.13	1,419.40	1,545.35	1,325.13	880.43	1,593.60	1,499.36	960.51	1,015.57	184.12	1,159.66	1,593.60
Q14	7.43	32.92	24.47	51.10	50.48	45.36	41.81	35.43	29.80	37.42	7.43	35.62	51.10
Q15	6.06	42.45	46.74	46.27	50.93	60.39	51.17	33.12	42.31	23.47	6.06	40.29	60.39
Q16	29.28	143.25	154.15	231.24	186.11	242.76	186.80	157.62	104.39	43.69	29.28	147.93	242.76
Q17	16.54	174.94	294.80	335.59	281.06	283.40	188.25	324.59	289.64	222.37	16.54	241.12	335.59
Q18	168.88	1,148.28	1,448.83	1,624.70	1,284.49	1,745.88	1,605.42	1,482.28	1,561.58	1,332.62	168.88	1,340.30	1,745.88
Q19	8.09	90.04	113.27	168.66	156.42	206.39	222.10	368.44	98.99	496.71	8.09	192.91	496.71
Q20	21.09	239.88	153.56	170.02	244.11	197.65	244.00	169.48	217.04	254.62	21.09	191.15	254.62
Q21	103.89	1,015.18	790.58	882.08	947.50	1,015.01	509.26	935.37	690.62	1,285.33	103.89	817.48	1,285.33
Q22	35.27	285.17	339.29	185.74	232.82	282.96	184.73	217.20	161.54	199.67	35.27	212.44	339.29
RF1	200.06	215.66	202.63	208.40	209.02	219.94	228.55	205.59	202.82	210.53	200.06	210.32	228.55
RF2	333.77	496.30	506.26	519.12	451.33	535.22	470.73	463.75	488.23	479.65	333.77	474.44	535.22