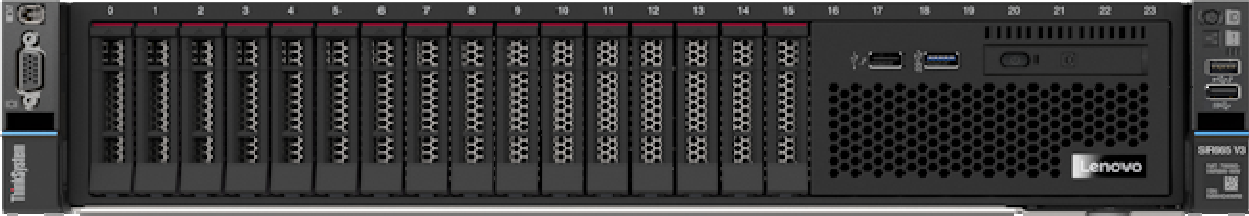



	Lenovo® ThinkSystem™ SR665 V3		TPC-E™ 1.14.0 TPC Pricing 2.9.0
			Report Date: April 30, 2024 Revision Date: April 30, 2024
TPC-E Throughput 15,885.04 <small>tpsE™</small>	Price/Performance \$80.77 <small>USD per tpsE</small>	Availability Date April 30, 2024	Total System Cost \$1,282,920 <small>USD</small>
Database Server Configuration			
Operating System Microsoft® Windows Server® 2022 Standard Edition	Database Manager Microsoft SQL Server® 2022 Enterprise Edition	Processors/Cores/Threads 2/128/256	Memory 3072GB
			
 4x 10Gb Ethernet		 12x 12Gb SAS	
 6 x			
TIER A (Client) 1 x Lenovo ThinkSystem SR650 V3: <ul style="list-style-type: none"> - 2 x Intel Xeon Gold 6442Y Processors @ 2.60GHz (2 Procs/48 Cores/96 Threads) - 256GB Memory - 2 x 960GB SATA SSD (RAID-1) - 1 x ThinkSystem RAID 940-8i - 1 x Quad 10Gb-T Ethernet - 2 x Dual 10Gb-T Ethernet 		TIER B (Database Server and Storage) 1 x Lenovo ThinkSystem SR665 V3: <ul style="list-style-type: none"> - 2 x AMD EPYC 9554 Processors @ 3.1GHz (2 Procs/128 Cores/256 Threads) - 3072GB Memory - 2 x 480GB SATA SSD (RAID-1) - 8 x 1600GB SAS SSD (RAID-10) - 1 x ThinkSystem RAID 940-16i - 6 x ThinkSystem RAID 940-8e - 1 x Quad 10Gb-T Ethernet - 1 x Dual 10Gb-T Ethernet 	
		6 x Lenovo Storage D1224 DAS Enclosures, with: <ul style="list-style-type: none"> - 144 x 800GB 2.5" SAS SSD (6 x 24-drive RAID-5) 144 Total External Drives	
Initial Database Size 65,732 GB	Redundancy Level: 1 RAID-10 Log, tempdb RAID-5 Data	Storage 144x 800GB 2.5" SAS SSD 2x 480GB 2.5" SATA SSD 8x 1600GB 2.5" SAS SSD	



Lenovo ThinkSystem SR665 V3

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Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
Server Hardware						
ThinkSystem SR665 V3 Configure-To-Order, includes:	7D9ACTO1WW		249,791	1	249,791	
ThinkSystem V3 2U 24x2.5" Chassis	BLKK			1		
ThinkSystem AMD EPYC 9554 64C 360W 3.1GHz Processor	BPVJ			2		
ThinkSystem SR665 V3 2U High Performance Heatsink	BQ29			2		
ThinkSystem 128GB TruDDR5 4800MHz (4Rx4) 3DS RDIMM-A v1	BYEE			24		
ThinkSystem RAID 940-16i 8GB Flash PCIe Gen4 12Gb Adapter	B8NZ			1		
ThinkSystem 2.5" 5400 PRO 480GB Read Intensive SATA 6Gb HS SSD	BQ1P			2		
ThinkSystem 2.5" PM1655 1.6TB Mxed Use SAS 24Gb HS SSD	BNW9			8		
ThinkSystem 2U 8x2.5" SAS/SATA Backplane	B8LU			2		
ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter	B5T4			1		
ThinkSystem RAID 940-8e 4GB Flash PCIe Gen4 12Gb Adapter	BNWJ			6		
ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	AUKP			1		
ThinkSystem V3 2U x16/x8/x8 PCIe Gen4 Riser1 or 2	BLKL			2		
ThinkSystem V3 2U x16/x16 PCIe Gen4 Riser3 Kit with Cage	BPKG			1		
ThinkSystem 2400W 230V Platinum Hot-Swap Gen2 Power Supply	B962			2		
1.5m, 16A/100-250V, C19 to IEC 320-C20 Rack Power Cable	B4L1			2		
ThinkSystem 2U V3 Performance Fan Module	BLL6			6		
ThinkSystem Toolless Friction Rail v2	BK7W			1		
ThinkSystem 2U V3 EIA Latch Standard	BQQ2			1		
ThinkSystem SR665 V3 MB	BQ2B			1		
ThinkSystem MS 2U common Airductr Filler	BQ31			2		
ThinkSystem 2U MS main Airduct	BQ2Z			1		
ThinkSystem 2U V3 EIA right with FIO	BQO6			1		
ThinkSystem 2U MS 3FH Riser 1&2 Cage w/Label1	BPKD			1		
ThinkSystem 2U MS 3FH Riser 1&2 Cage w/ lbl2	BLLD			7		
ThinkSystem RAID 930/940 SuperCap	AUNP			1		
ThinkSystem SR665 V3 Absolut-RoW RoT Module	BQ35			1		
Essential Service - 3Yr 24x7 4Hr Resp + YDYD SR665 V3	5PS7B08415	1	2,179			2,179
				Subtotal	249,791	2,179
Server Storage						
Lenovo Storage D1224 SFF Chassis, Dual ESM	4587A31	1	2,999	6	17,994	
External MiniSAS HD 8644/MiniSAS HD 8644 1M Cable	00YL848	1	79	12	948	
Lenovo Storage 800GB 3DWD 2.5" SAS SSD	01DC477	1	2,499	144	359,856	
1.5m, 10A/100-250V, C13 to IEC 320-C14 Rack Power Cable	39Y7937	1	49	12	588	
12Gb SAN Rack Mount Kit-Rails 25"-36"	01DC146	1	149	6	894	
Essential Service - 3Yr 24x7 4Hr Resp DS Series Disk Exp	01JR577	1	1,169	6		7,014
				Subtotal	380,280	7,014
Server Software						
SQL Server 2022 Enterprise Edition (2 Core License)	N/A	2	15,123	64	967,872	
Windows Server 2022 Standard Edition (16 Core License)	N/A	2	1,069	8	8,552	
Microsoft Problem Resolution Services (1 Incident)	N/A	2	259	1		259
				Subtotal	976,424	259
Client Hardware						
ThinkSystem SR650 V3 Configure-To-Order, includes:	7D76CTO1WW	1	35,954	1	35,954	
ThinkSystem V3 2U 24x2.5" Chassis	BLKK			1		
Intel Xeon Gold 6442Y 24C 225W 2.6GHz Processor	BPQE			2		
ThinkSystem 16GB TruDDR5 4800MHz (1Rx8) RDIMM	BKTL			16		
ThinkSystem RAID 940-8i 4GB Flash PCIe Gen4 12Gb Adapter	B8NY			1		
ThinkSystem 2.5" S4520 960GB Read Intensive SATA 6Gb HS SSD	BA7H			2		
ThinkSystem 2U 8x2.5" SAS/SATA Backplane	B8LU			1		
ThinkSystem Broadcom 57454 10GBASE-T 4-port OCP Ethernet Adapter	B5T4			1		
ThinkSystem Broadcom 57416 10GBASE-T 2-Port PCIe Ethernet Adapter	AUKP			2		
ThinkSystem V3 2U x16/x8/x8 PCIe Gen4 Riser1 or 2	BLKL			2		
ThinkSystem 1100W 230V Titanium Hot-Swap Gen2 Power Supply	BLKH			2		
2.8m, 13A/100-250V, C13 to C14 Jumper Cord	6400			2		
ThinkSystem 2U V3 Performance Fan Module	BLL6			6		
ThinkSystem Toolless Friction Rail v2	BK7W			1		
ThinkSystem 2U V3 EIA Latch Standard	BQQ2			1		
ThinkSystem SR650 V3 MB	BLL0			1		
ThinkSystem 2U V3 EIA right with FIO	BQO6			1		
ThinkSystem 2U Main Air Duct	BP46			1		
ThinkSystem SR650 V3 PSU Duct	BLL3			1		
ThinkSystem RAID 930/940 SuperCap	AUNP			1		
MS 2FH Riser Filler	BC4X			1		
ThinkSystem 2U MS 3FH Riser 1&2 Cage w/Label1	BPKD			1		
ThinkSystem 2U MS 3FH Riser 1&2 Cage w/ lbl2	BLLD			1		
ThinkSystem SR650 V3 Firmware and Root of Trust Security Module	BM8T			1		
Essential Service - 3Yr 24x7 4Hr Resp + YDYD SR650 V3	5PS7B07040	1	1,119	1		1,119
				Subtotal	35,954	1,119
Client Software						
Windows Server 2022 Standard Edition (16 Core License)	N/A	2	1,069	3	3,207	
				Subtotal	3,207	0
Infrastructure						
S2 42U Standard Rack	93074RX	1	1,565	1	1,565	
0U 36 C13 and 6 C19 Basic 32A 1 Phase PDU	4PU7A93169	1	989	1	989	
ThinkSystem Pref. Pro II USB Keyboard - US English	7ZB7A05522	1	29	1	29	
ThinkSystem Optical Wheel Mouse - USB	7M57A04698	1	39	1	39	
Lenovo L22e-40 21.45 inch Monitor	67AFKCCBUS	1	88	1	88	
1.0m CAT6 Green Cable	00WE127	1	19	4	76	
Essential Service - 3Yr 24x7 4Hr Response (Rack)	41L2760	1	315	1		315
				Subtotal	2,786	315
				Total	1,648,442	10,886
Dollar Volume Discount (See Note 1)	55.40%	1				

Pricing: 1 - Lenovo 1-877-782-7134; 2 - Microsoft				Three-Year Cost of Ownership USD:	\$1,282,920
Note 1: Discount applies to all line items where Pricing=1; pricing is for these or similar quantities. Discounts for similarly sized configurations will be similar to what is quoted here, but may vary based on the specific components priced.				TPC-E Throughput:	15,885.04
				\$ USD/tpsE:	\$80.77

Benchmark results and test methodology audited by Doug Johnson for InfoSizing, Inc. (www.sizing.com)

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated Line Items. 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 Line Items. For complete details, see the pricing section of the TPC Benchmark Standard. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.



Lenovo ThinkSystem SR665 V3

TPC-E 1.14.0 TPC Pricing 2.9.0

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Numerical Quantities Summary

Reported Throughput:
15,885.04 tpsE

Configured Customers:
8,000,000

Response Time (in seconds)	Minimum	Average	90 th Percentile	Maximum
Broker-Volume	0.01	0.01	0.02	0.57
Customer-Position	0.01	0.01	0.02	1.08
Market-Feed	0.01	0.01	0.02	0.44
Market-Watch	0.01	0.01	0.01	0.57
Security-Detail	0.01	0.01	0.01	0.55
Trade-Lookup	0.01	0.04	0.06	0.51
Trade-Order	0.01	0.03	0.10	0.89
Trade-Result	0.01	0.01	0.04	0.59
Trade-Status	0.01	0.01	0.01	0.46
Trade-Update	0.01	0.04	0.06	1.14
Data-Maintenance	0.01	0.01	N/A	0.07

Transaction Mix	Transaction Count	Mix %
Broker-Volume	56,036,188	4.900%
Customer-Position	148,668,107	13.000%
Market-Feed	11,437,247	1.000%
Market-Watch	205,847,028	18.000%
Security-Detail	160,103,037	14.000%
Trade-Lookup	91,487,533	8.000%
Trade-Order	115,502,866	10.100%
Trade-Result	114,372,332	10.001%
Trade-Status	217,283,703	19.000%
Trade-Update	22,871,915	2.000%
Data-Maintenance	120	N/A

Test Duration and Timings

Ramp-up Time (hh:mm:ss)	00:43:52
Measurement Interval (hh:mm:ss)	02:00:00
Business Recovery Time (hh:mm:ss)	00:42:31
Total Number of Transactions Completed in Measurement Interval	1,143,609,956