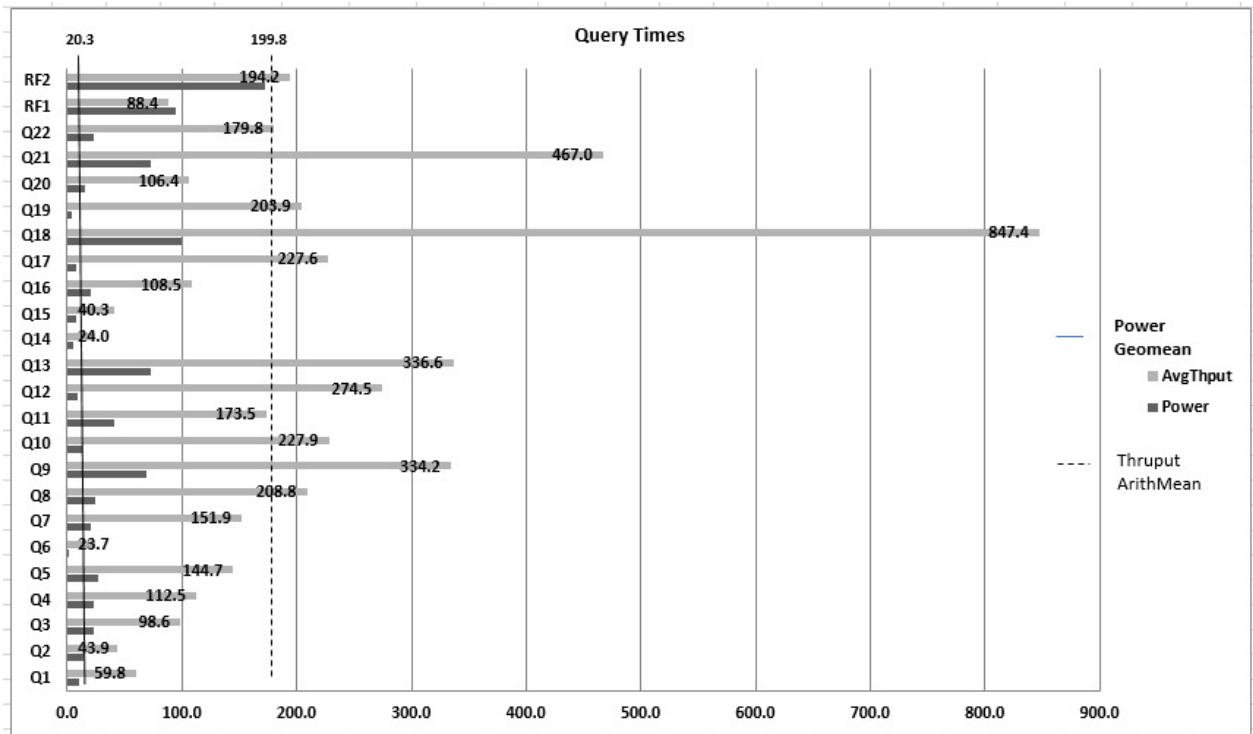
		<b>Lenovo® ThinkSystem™</b> <b>SR950</b>		TPC-H™ 2.17.2 TPC Pricing 2.1.1	
				Report Date: 7/11/17 Revision Date: 7/11/17	
Total System Cost		TPC-H Composite Query per Hour Metric		Price/Performance	
<b>\$1,218,869.80</b> USD		<b>1,336,109.6</b> QphH™@10,000GB		<b>\$0.92</b> \$ / QphH@10,000GB	
Database Size	DBMS Manager	Operating System	Other Software	System Availability Date	
<b>10,000GB*</b>	<b>Microsoft®</b> <b>SQL Server® 2017</b> <b>Enterprise Edition</b>	<b>Microsoft</b> <b>Windows Server® 2016</b> <b>Standard Edition</b>	<b>N/A</b>	<b>October 19, 2017</b>	



Database Load Time <b>00d 05h 13m 36s</b>	Load Includes Backup <b>Y</b>	Memory/Database Size Percentage <b>61.4%</b>	Total Disk/Database Size <b>2.69</b>
Storage Redundancy Level <b>Zero</b>	Base Tables <b>No RAID</b>	Auxiliary Structures <b>No RAID</b>	DBMS Temp Space <b>No RAID</b>
OS and DBMS <b>No RAID</b>			

<u>System Configuration</u>			
Processors/Cores/Threads Memory Total Memory Storage Controllers Storage Devices  Total Storage	<b>4/112/224</b> <b>48</b>  <b>1</b> <b>1</b> <b>4</b> <b>8</b>	<b>Intel® Xeon® Platinum Processor 8180M, 2.50GHz, 38.5MB L3 Cache</b> <b>128GB TruDDR4 2666 MHz 3DS RDIMM</b> <b>6TB</b> <b>ThinkSystem RAID 530-8i PCIe 12Gb Adapter</b> <b>M.2 128GB SATA 6Gbps Non-Hot-Swap SSD</b> <b>800GB Mainstream SAS 12Gb Hot Swap SSD</b> <b>HHHL 3.2TB Performance NVMe PCIe 3.0 x4 Flash Adapter</b> <b>55TB</b>	

\*Database Size includes only raw data (e.g., no temp, index, redundant storage space, etc.).



# Lenovo ThinkSystem SR950

TPC-H 2.17.2  
 TPC Pricing 2.1.1  
 Report Date: 7/11/17  
 Revision Date: 7/11/17

Description	Part Number	Price Source	Unit Price	Quantity	Extended Price	3-Yr. Maint. Price
<b>Server Hardware</b>						
ThinkSystem SR950 Configure-To-Order, includes:	7X12CTO1WW	1	571,293	1	571,293	
ThinkSystem SR950 Intel Xeon Platinum 8180M 28C 205W 2.5GHz Processor	AX74			4		
ThinkSystem 128GB TruDDR4 2666 MHz (8Rx4 1.2V) 3DS RDIMM	AUNF			48		
ThinkSystem 800GB Mainstream SAS 12Gb Hot Swap SSD	AUMD			4		
ThinkSystem 1600W (230V) Platinum Hot-Swap Power Supply	AUPJ			4		
ThinkSystem RAID 530-8i PCIe 12Gb Adapter	AUNG			1		
ThinkSystem 1Gb 2-port RJ45 Media Adapter	AUKG			1		
ThinkSystem Rail Kit	A4AA			1		
Power Cable	6311			4		
ThinkSystem SR950 (4) x8 PCIe Riser	AUN2			2		
ThinkSystem 2.5" SAS/SATA 2x2 Bay Backplane Kit	AUN6			2		
ThinkSystem SR950 2S to 4S Base	AUNY			1		
ThinkSystem SR950 Main I/O Planar	AUMT			1		
ThinkSystem SR950 2-CPU socket, 24 DIMM memory planar	AUN0			2		
ThinkSystem M.2 128GB SATA 6Gbps Non-Hot-Swap SSD	AUUV			1		
ThinkSystem M.2 Enablement Kit	AUMU			1		
ThinkSystem SR950 Lift Handles	AUMY			1		
ThinkSystem Front operator panel with LCD display	AUMW			1		
ServicePac for 3-Year 24x7x4 Support + YourDrive YourData (SR950)	5PS7A01828	1	1,999	1		1,999
				<b>Subtotal</b>	571,293	1,999
<b>ServerStorage</b>						
ThinkSystem HHHH 3.2TB Performance NVMe PCIe 3.0 x4 Flash Adapter	AWG9	1	9,999	8	79,992	
				<b>Subtotal</b>	79,992	
<b>Server Software</b>						
SQL Server 2017 Enterprise Edition (2 Core License)	N/A	2*	13,472.50	56	754,460	
Windows Server 2016 Standard Edition (2 Core License)	N/A	2	92	56	5,152	
Microsoft Problem Resolution Services (1 Incident)	N/A	2	259	1		259
				<b>Subtotal</b>	759,612	259
<b>Infrastructure</b>						
S2 42U Standard Rack	93074RX	1	1,565	1	1,565	
Preferred Pro Keyboard USB - US English 103P RoHS v2	00AM600	1	29	1	29	
2-Button Optical Mouse - Black - USB	40K9200	1	19	1	19	
ThinkVision E2054 19.5-inch LED Backlit LCD Monitor	60DFAAR1US	1	119	1	119	
ServicePac for 3-Year 24x7x4 Support (Rack)	41L2760	1	315	1		315
				<b>Subtotal</b>	1,732	315
				<b>Total</b>	1,412,629	2,573
Dollar Volume Discount (See Note 1)	29.96%	1			196,332	

Pricing: 1 - Lenovo 1-877-782-7134; 2 - Microsoft  
 Note 1: Discount applies to all line items where Source=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.  
 \* These components are not immediately orderable. See the FDR for more information.

**Three-Year Cost of Ownership USD:** \$1,218,869.80  
**QpH@10000GB:** 1,336,109.6  
**\$ USD/QpH@10000GB:** \$0.92

**Benchmark results and test methodology audited by Francois Raab for InfoSizing. (www.sizing.com)**

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 section of the TPC benchmark specifications. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.



# Lenovo ThinkSystem SR950

TPC-H 2.17.2  
TPC-Pricing 2.1.1

Report Date: 7/11/17  
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### Measurement Results:

Database Scale Factor	<b>10,000</b>
Total Data Storage/Database Size	<b>2.69</b>
Memory/Database Size	<b>61.4%</b>
Start of Database Load	<b>07/05/2017 19:40:15</b>
End of Database Load	<b>07/06/2017 00:53:51</b>
Database Load Time	<b>00d 05h 13m 36s</b>
Query Streams for Throughput Test	<b>9</b>
TPC-H Power (QppH™@10,000)	<b>1,776,423.2</b>
TPC-H Throughput (QthH™@10,000)	<b>1,004,934.4</b>
TPC-H Composite Query-per-Hour Metric (QphH@10,000GB)	<b>1,336,109.6</b>
Total System Price over 3 Years	<b>\$1,218,869.80 USD</b>
TPC-H Price/Performance Metric (\$/QphH@10,000GB)	<b>\$ 0.92 USD</b>

### Measurement Intervals:

Measurement Interval in Throughput Test (Ts) **7,093**

### Duration of Stream Execution:

Power Run	Seed	Query Start Time	Duration (sec)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
	706005351	2017-07-06 10:18:52	605	2017-07-06 10:17:18	2017-07-06 10:28:57
		2017-07-06 10:28:57		2017-07-06 10:18:52	2017-07-06 10:31:49
Throughput Stream	Seed	Query Start Time	Duration (sec)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
1	706005352	2017-07-06 10:31:48	4,409	2017-07-06 11:47:34	2017-07-06 11:48:53
		2017-07-06 11:45:17		2017-07-06 11:48:53	2017-07-06 11:51:35
2	706005353	2017-07-06 10:31:48	4,547	2017-07-06 11:51:35	2017-07-06 11:53:02
		2017-07-06 11:47:35		2017-07-06 11:53:01	2017-07-06 11:55:57
3	706005354	2017-07-06 10:31:48	4,427	2017-07-06 11:55:57	2017-07-06 11:57:29
		2017-07-06 11:45:35		2017-07-06 11:57:29	2017-07-06 12:00:20
4	706005355	2017-07-06 10:31:48	4,334	2017-07-06 12:00:20	2017-07-06 12:01:52
		2017-07-06 11:44:02		2017-07-06 12:01:51	2017-07-06 12:05:09
5	706005356	2017-07-06 10:31:48	4,226	2017-07-06 12:05:09	2017-07-06 12:06:35
		2017-07-06 11:42:14		2017-07-06 12:06:35	2017-07-06 12:10:00
6	706005357	2017-07-06 10:31:48	4,489	2017-07-06 12:10:00	2017-07-06 12:11:31
		2017-07-06 11:46:37		2017-07-06 12:11:31	2017-07-06 12:14:39
7	706005358	2017-07-06 10:31:48	4,378	2017-07-06 12:14:39	2017-07-06 12:16:07
		2017-07-06 11:44:46		2017-07-06 12:16:07	2017-07-06 12:19:23
8	706005359	2017-07-06 10:31:48	4,407	2017-07-06 12:19:23	2017-07-06 12:21:00
		2017-07-06 11:45:15		2017-07-06 12:21:00	2017-07-06 12:24:48
9	706005360	2017-07-06 10:31:49	4,353	2017-07-06 12:24:48	2017-07-06 12:26:16
		2017-07-06 11:44:22		2017-07-06 12:26:16	2017-07-06 12:30:01



# Lenovo ThinkSystem SR950

TPC-H 2.17.2  
TPC-Pricing 2.1.1

Report Date: 7/11/17  
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## Timing Intervals (in seconds):

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
0	10.5	14.0	22.8	23.3	27.1	1.0	19.9	24.9	69.5	12.5	40.7	8.9
1	16.0	40.5	87.2	37.7	188.2	26.1	225.4	139.0	356.0	220.8	199.2	182.3
2	35.0	51.6	90.5	120.6	153.8	24.3	62.7	408.3	349.2	228.8	197.9	379.6
3	64.5	33.4	30.5	123.8	131.6	31.7	157.4	202.5	190.5	249.8	204.7	264.7
4	57.2	50.3	67.0	151.1	167.7	39.6	128.7	153.1	291.3	146.7	105.0	53.6
5	32.6	34.3	51.3	71.2	146.1	16.0	174.7	227.3	350.3	234.5	136.1	349.4
6	52.3	40.8	187.9	130.1	144.1	7.8	214.5	149.6	452.8	262.8	180.5	434.5
7	203.2	66.6	99.0	115.5	126.7	7.1	113.3	186.7	240.2	227.7	127.4	262.0
8	31.2	47.6	116.1	104.6	139.8	30.3	162.1	214.1	409.1	240.8	207.2	345.7
9	46.6	30.2	158.1	158.3	104.2	30.3	128.0	198.4	368.7	239.4	203.5	199.0
Qi Min	10.5	14.0	22.8	23.3	27.1	1.0	19.9	24.9	69.5	12.5	40.7	8.9
Qi Avg	54.9	40.9	91.0	103.6	132.9	21.4	138.7	190.4	307.8	206.4	160.2	248.0
Qi Max	203.2	66.6	187.9	158.3	188.2	39.6	225.4	408.3	452.8	262.8	207.2	434.5
Stream ID	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
0	72.9	4.5	7.6	19.9	8.1	99.7	4.2	15.1	73.2	23.1	94.4	172.0
1	376.8	24.8	27.5	124.2	185.7	908.3	235.8	106.4	588.7	111.2	78.1	161.4
2	374.2	14.7	39.7	138.4	301.3	923.7	209.2	135.5	125.1	182.1	86.5	175.4
3	340.8	12.0	32.1	142.5	233.3	859.8	218.2	89.3	577.3	234.8	91.3	171.5
4	331.3	27.3	90.0	88.2	426.5	884.6	102.5	63.2	703.4	204.7	91.0	197.6
5	288.2	36.7	34.7	135.0	232.4	720.4	86.7	123.2	553.9	190.1	85.1	205.0
6	435.8	22.6	35.0	112.2	183.6	730.7	219.3	114.7	244.6	131.5	90.6	188.1
7	358.1	34.0	45.5	137.9	190.4	681.9	244.6	119.1	565.6	224.6	88.0	195.8
8	408.8	21.7	33.1	63.1	66.9	771.3	318.0	91.0	404.3	179.6	96.6	227.7
9	115.1	22.5	25.3	35.2	228.5	1,145.5	201.0	115.4	439.9	159.4	88.3	225.0
Qi Min	72.9	4.5	7.6	19.9	8.1	99.7	4.2	15.1	73.2	23.1	78.1	161.4
Qi Avg	310.2	22.1	37.1	99.7	205.7	772.6	184.0	97.3	427.6	164.1	89.0	192.0
Qi Max	435.8	36.7	90.0	142.5	426.5	1,145.5	318.0	135.5	703.4	234.8	96.6	227.7