



**Microsoft SQL Server 2019  
on SYSGEAR  
M50CYP2UR208\_6334**

**TPC-H Rev. 3.0.1  
TPC-Pricing Rev. 2.9.0**

**Report Date:  
Feb 1, 2024**

**Total System Cost**

**Composite Query per Hour Metric**

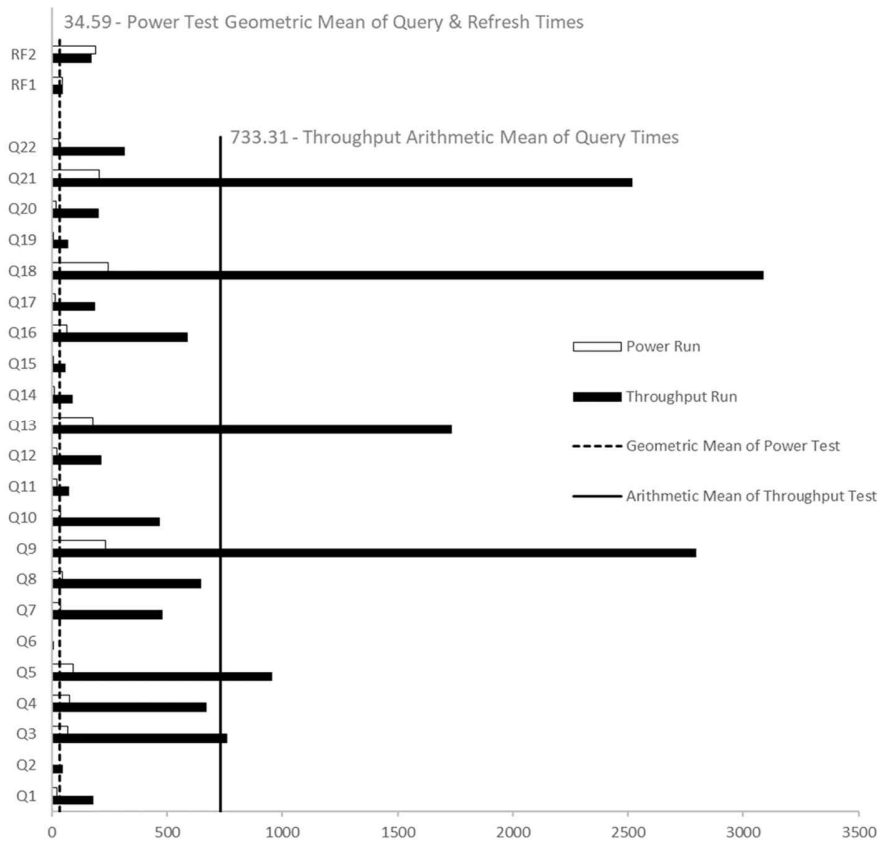
**Price / Performance**

**158,573,900<sup>W</sup>**

**181,448.9 QphH@3,000GB**

**839,991.10W/kQphH@3,000GB**

Database Size	Database Manager	Operating System	Other Software	Availability Date
3,000GB	Microsoft SQL Server 2019 Enterprise Edition	RHEL 7.3	None	Available Now



Database Load Time = <b>00d 08h 30m 33s</b>	<b>Storage Redundancy Level</b>	
Load included backup: <b>Y</b>	Base Tables and Auxiliary Data Structures, DBMS Temporary Space	<b>No RAID</b>
Total Data Storage/Database Size = <b>17.04</b>	OS and DBMS Software	<b>No RAID</b>
Memory/Database Size = <b>68.3%</b>	Log	<b>RAID 10</b>

System Components	System Total
Nodes	1
Intel(R) Xeon(R) Gold 6334 CPU @ 3.60GHz	2
Cores/Threads:	16/32
Memory:	2,048 GiB
4TB NVMe Drives	7
3.84TB SAS SSD:	7
<b>Total Storage</b>	<b>54.88 TB (51,110.98 GiB)</b>



**Microsoft SQL Server 2019  
on SYSGEAR  
M50CYP2UR208\_6334**

**TPC-H Rev. 3.0.1  
TPC-Pricing Rev. 2.9.0**

**Report Date:  
Feb 1, 2024**

Description	Key	Unit Price(₩)	Qty	Price(₩)	3-Yr. Maint. Price(₩)
<b><u>Hardware</u></b>					
Intel® Server System M50CYP2UR208, 2U	1	2,100,000	1	2,100,000	
Intel® Xeon® Gold 6334 Processor (8-Core 3.6GHz/18MB)	1	3,450,000	2	6,900,000	
(Samsung) DDR4 64GB M393A8G40AB2-CWE	1	138,000	32	4,416,000	
(Seagate) Nytro XS3840SE70124 3.8TB	1	1,000,000	7	7,000,000	
(Seagate) FireCuda 530 ZP4000GM30013 4TB	1	410,000	7	2,870,000	
Quad M.2 NVMe PCIe 4.0x4 PCIe x16	1	114,000	2	228,000	
Intel® Ethernet Network Adapter X710-T2L for OCP 3.0	1	390,000	1	390,000	
1300W Power Supply	1	290,000	2	580,000	
2U Riser#1 w/ x16 DW slot	1	115,000	1	115,000	
2U Riser #2 w/ x16 DW slot	1	115,000	1	115,000	
2U 2 slots Riser #3	1	110,000	1	110,000	
Cable kit for 2U SB to 8 x 2.5" drives if 8 drives	1	110,000	1	110,000	
Intel® Cable kit CYPCLHDHDX1, Single	1	40,000	1	40,000	
2U GPGPU Kit (includes airducts, bracket, power cables)	1	100,000	1	100,000	
2U Bezel	1	55,000	1	55,000	
Half extension rail kit	1	65,000	1	65,000	
Heat Sink tall (1U or 2U capable)	1	85,000	2	170,000	
Intel® RAID Adapter RS3DC080	1	430,000	1	430,000	
24-Inch Monitor	1	150,000	1	150,000	
Mouse	1	20,000	1	20,000	
M50CYP2UR208_6334_3-Yr. maint(7x24x4)	1				4,828,200
<b>Hardware Sub Total</b>				<b>25,964,000</b>	<b>4,828,200</b>
<b><u>Software</u></b>					
SQL Server 2019 Enterprise Core - 2 Core License Pack	1	13,786,500	8	110,292,000	
Microsoft Problem Resolution Services(3Y, 7x24x4)	1				336,700
Red Hat Enterprise Linux Operating System Platform	2	4,089,000	1	4,089,000	
Rockplace Support Carepack - Linux Premium 3Year	2				9,000,000
SMES 1T(3Y, 7x24x4)	1	3,900,000	3	11,700,000	
<b>Software Sub Total</b>				<b>126,081,000</b>	<b>9,336,700</b>
<b><u>Discount</u></b>					
HW Discount - M50CYP2UR208_6334	1			-6,158,440	
SW Discount - RHEL	2			-1,636,000	
SW Support Discount - RHEL	2				-6,000,000
<b>Discount Sub Total</b>				<b>-7,794,440</b>	<b>-6,000,000</b>
<b>Total</b>				<b>144,250,560</b>	<b>8,164,900</b>

\* All discounts are based on Korea list prices and for similar quantities and configurations. Discounts for similarly sized configurations will be similar to those quoted here, but may vary based on the components in the configuration.

<b><u>Pricing Key</u></b>		<b>3 Yr. cost of ownership KRW(₩):</b>	<b>152,415,460₩</b>
1) SYSGEAR Inc.	2) RockPlace Inc.	<b>QphH@3,000GB:</b>	<b>181,448.9</b>
All of the prices are based on South Korea's currency, KRW (₩, Korean Won) and excluded VAT.		<b>₩/kQphH@3,000GB:</b>	<b>839,991.10₩/kQphH</b>
<b>Benchmark implementation and results independantly audited by Doug Johnson of InfoSizing (www.sizing.com)</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 pricing specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at [pricing@tpc.org](mailto:pricing@tpc.org). Thank you.



**Microsoft SQL Server 2019  
on SYSGEAR  
M50CYP2UR208\_6334**

**TPC-H Rev. 3.0.1  
TPC-Pricing Rev. 2.9.0  
Report Date:  
Feb 1, 2024**

**Numerical Quantities**

**Measurement Results:**

Database Scale Factor = 3,000GB  
 Total Data Storage / Database Size = 17.04  
 Start of database load time = 2023-12-07 9:37:55 AM  
 End of database load time = 2023-12-07 6:08:28 PM  
 Database Load Time = 00d 08h 30m 33s  
 Query Streams for Throughput Test = 8  
 TPC-H Power = 312,243.4  
 TPC-H Throughput = 105,442.4  
 TPC-H Composite Query-per-Hour Rating (QphH@3,000GB) = 181,448.9  
 Total System Price Over 3 Years (₩, KRW) = 158,573,900  
 TPC-H Price/Performance Metric (₩/kQphH@3,000GB) = 839,991.10

**Measurement Intervals:**

Measurement Interval in Throughput Test (Ts) = 18,026.91 seconds

**Duration of Stream Execution:**

Power Run	Seed	Query Start Time	Total Time (hh:mm:ss)	RF1 Start Time	RF2 Start Time
		Query End Time		RF1 End Time	RF2 End Time
	1207180828	2023-12-08 07:12:59	00:24:12	2023-12-08 07:12:01	2023-12-08 07:37:24
		2023-12-08 07:37:11		2023-12-08 07:12:46	2023-12-08 07:40:33
Throughput Stream	Seed	Query Start Time	Total Time (hh:mm:ss)	RF1 Start Time	RF2 Start Time
1	1207180829	2023-12-08 07:40:33	04:31:27	2023-12-08 12:12:11	2023-12-08 12:12:58
		2023-12-08 12:12:00		2023-12-08 12:12:58	2023-12-08 12:16:00
2	1207180830	2023-12-08 07:40:33	04:29:55	2023-12-08 12:16:01	2023-12-08 12:16:45
		2023-12-08 12:10:28		2023-12-08 12:16:45	2023-12-08 12:19:18
3	1207180831	2023-12-08 07:40:33	04:26:16	2023-12-08 12:19:18	2023-12-08 12:20:02
		2023-12-08 12:06:49		2023-12-08 12:20:02	2023-12-08 12:22:42
4	1207180832	2023-12-08 07:40:33	04:29:48	2023-12-08 12:22:42	2023-12-08 12:23:29
		2023-12-08 12:10:21		2023-12-08 12:23:29	2023-12-08 12:26:17
5	1207180833	2023-12-08 07:40:33	04:30:31	2023-12-08 12:26:17	2023-12-08 12:27:01
		2023-12-08 12:11:04		2023-12-08 12:27:01	2023-12-08 12:29:53
6	1207180834	2023-12-08 07:40:33	04:29:59	2023-12-08 12:29:53	2023-12-08 12:30:38
		2023-12-08 12:10:32		2023-12-08 12:30:38	2023-12-08 12:33:38
7	1207180835	2023-12-08 07:40:33	04:31:26	2023-12-08 12:33:38	2023-12-08 12:34:24
		2023-12-08 12:11:59		2023-12-08 12:34:24	2023-12-08 12:37:12
8	1207180836	2023-12-08 07:40:33	04:21:46	2023-12-08 12:37:12	2023-12-08 12:37:58
		2023-12-08 12:02:19		2023-12-08 12:37:58	2023-12-08 12:41:01



**Microsoft SQL Server 2019  
on SYSGEAR  
M50CYP2UR208\_6334**

**TPC-H Rev. 3.0.1  
TPC-Pricing Rev. 2.9.0  
Report Date:  
Feb 1, 2024**

**Query Execution Times (Query1~Query12):**

Stream ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
0	22.32	3.47	70.42	77.04	92.99	1.58	38.54	45.40	234.14	38.14	23.43	23.61
1	161.02	50.32	799.44	336.07	976.43	7.45	406.43	687.91	2,782.15	503.13	66.33	255.80
2	178.55	41.95	643.14	606.45	1,042.84	8.71	483.62	665.64	2,975.85	586.92	68.29	246.50
3	172.69	74.81	703.13	675.02	912.44	8.84	520.26	649.20	2,676.77	414.33	78.55	268.26
4	172.28	28.28	713.30	783.33	991.00	7.51	496.70	521.17	2,870.78	380.75	72.37	230.69
5	189.33	48.26	817.30	798.42	955.14	9.33	481.26	613.88	2,699.82	397.45	61.37	172.07
6	183.00	48.43	809.23	656.53	904.61	8.05	493.75	651.35	2,836.31	541.71	85.00	271.29
7	160.67	46.08	823.17	781.46	911.82	6.93	457.52	682.88	2,700.64	526.95	61.77	63.29
8	196.02	38.10	775.83	713.02	926.96	8.28	493.55	690.30	2,810.09	390.25	97.14	203.58
<b>QI Min</b>	<b>22.32</b>	<b>3.47</b>	<b>70.42</b>	<b>77.04</b>	<b>92.99</b>	<b>1.58</b>	<b>38.54</b>	<b>45.40</b>	<b>234.14</b>	<b>38.14</b>	<b>23.43</b>	<b>23.61</b>
<b>QI Avg</b>	<b>159.54</b>	<b>42.19</b>	<b>683.88</b>	<b>603.04</b>	<b>857.14</b>	<b>7.41</b>	<b>430.18</b>	<b>578.64</b>	<b>2,509.62</b>	<b>419.96</b>	<b>68.25</b>	<b>192.79</b>
<b>QI Max</b>	<b>196.02</b>	<b>74.81</b>	<b>823.17</b>	<b>798.42</b>	<b>1,042.84</b>	<b>9.33</b>	<b>520.26</b>	<b>690.30</b>	<b>2,975.85</b>	<b>586.92</b>	<b>97.14</b>	<b>271.29</b>

**Query Execution Times (Query13~Query22, RF1, RF2):**

Stream ID	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	RF1	RF2
0	178.34	8.94	6.60	65.50	14.89	246.18	6.31	18.36	203.98	31.82	44.79	189.33
1	1,832.28	103.43	57.66	578.68	150.03	3,131.94	55.22	181.57	2,808.38	354.75	46.21	181.85
2	1,701.63	116.07	54.84	594.72	250.11	2,957.74	68.14	185.39	2,390.48	326.33	44.80	152.28
3	1,672.15	85.51	51.98	666.46	211.21	3,135.69	49.55	205.42	2,398.05	344.66	44.25	159.45
4	1,642.48	91.32	61.57	558.93	161.43	3,111.66	84.08	205.75	2,630.54	371.62	46.75	167.81
5	1,697.53	94.66	59.48	665.31	170.24	3,158.76	75.13	180.95	2,599.78	284.92	44.44	171.25
6	1,922.30	82.15	64.08	552.06	161.39	2,895.97	57.72	221.00	2,481.27	271.49	44.98	180.05
7	1,776.63	68.35	23.08	518.68	212.56	3,303.83	81.93	212.00	2,552.63	312.53	45.91	167.65
8	1,616.05	81.51	85.54	581.47	183.11	2,991.15	66.41	207.08	2,289.07	260.14	45.62	182.54
<b>QI Min</b>	<b>178.34</b>	<b>8.94</b>	<b>6.60</b>	<b>65.50</b>	<b>14.89</b>	<b>246.18</b>	<b>6.31</b>	<b>18.36</b>	<b>203.98</b>	<b>31.82</b>	<b>44.25</b>	<b>152.28</b>
<b>QI Avg</b>	<b>1,559.93</b>	<b>81.33</b>	<b>51.65</b>	<b>531.31</b>	<b>168.33</b>	<b>2,770.32</b>	<b>60.50</b>	<b>179.72</b>	<b>2,261.58</b>	<b>284.25</b>	<b>45.31</b>	<b>172.47</b>
<b>QI Max</b>	<b>1,922.30</b>	<b>116.07</b>	<b>85.54</b>	<b>666.46</b>	<b>250.11</b>	<b>3,303.83</b>	<b>84.08</b>	<b>221.00</b>	<b>2,808.38</b>	<b>371.62</b>	<b>46.75</b>	<b>189.33</b>