TTA (logo)	**Goldilocks v3.1 Standard Edition on Supermicro A+ Server 1124US-TNRP**	**TPC-C Version 5.11.0** **TPC Pricing 2.6.0** Report Date **18-Aug-2020**

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
₩248,570,400 (KRW)	**380,475 tpmC**	**654 KRW/tpmC**	**1-Sep-2020**

Server Processors/Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
2/48/96	**Goldilocks v3.1 Standard Edition**	**RHEL 7.7**	**JBoss Web Server**	**300,000**

100/25Gb Ethernet Switch

Web Application Server

2 x Supermicro A+ Server 1123US-TN10RT
- 2 x AMD EPYC 7262 8-Core Processor
- 8 x 16GB (128GB) Memory
- 1 x 1TB NVMe SSD
- 1 x 25Gb 2-Port Ethernet Adaptor

Database Server

1 x Supermicro A+ Server 1124US-TNRP
- 2 x AMD EPYC 7F72 24-Core Processor
- 16 x 256GB (4TB) Memory
- 2 x 7.68TB NVMe SSD
- 6 x 3.8TB SATA SSD
- 1 x 25Gb 2-Port Ethernet Adaptor

System Components	DB Server		WAS Server	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	2/48/96	AMD EPYC 7F72 3.2GHz	1/8/16	AMD EPYC 7262 3.2GHz
Memory	16	256GB	8	16GB
Storage Controller	1	SAS 12G Raid		
Storage Device	6 2	3.8TB SATA SSD 7.68TB NVMe SSD	1	1TB NVMe SSD
Total Storage Capacity		38.16TB		

TPC-C Executive Summary

					TPC-C Version 5.11.0 TPC Pricing 2.6.0
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					Availability Date 1-Sep-2020

Description	Part Number	Source	Unit Price	Qty	Price	3-Yr. Maint. Price
Server Hardware						
1 x DB Server						
Supermicro A+ Server 1124US-TNRP	AS-1124US-TNRP	1	108,500,000	1	**108,500,000**	
AMD EPYC 7F72 24-Core Processor	PSE-ROM7F72-0141	1	(included)	2		
Samsung M386ABG40M5B-CYF 256GB LRDIMM Memory	MEM-DR425L-SL01-LR29	1	(included)	16		
Micron 9300 MTFDHAL7T6TDP 7.68TB NVMe SSD	HDS-MUN-MTFDHALT6TDP1AT	1	(included)	2		
Samsung SAMSUNG MZ7LH3T8HMLT-00005 3.84TB SATA SSD	HDS-S2T1-MZ7LH3T8HMLT05	1	(included)	6		
Broadcom/LSI MegaRAID SAS-3 3108	AOC-S3108L-H8IR	1	(included)	1		
2-port 25GbE SFP28 Mellanox CX-4 Lx EN	AOC-MCX4121A-ACAT	1	(included)	1		
ASSEMBLY FEE	MC0037	1	(included)	1		
Maintenance - 7x24x4 Care Pack (3-yrs)	OS4HR3	1	(included)	1		
2 x WAS Servers (per server)						
Supermicro A+ Server 1123US-TN10RT	AS-1123US-TN10RT	1	9,850,000	2	**19,700,000**	
AMD EPYC 7262 8-Core	PSE-ROM7262-0041	1	(included)	2		
Supermicro 16GB 288-Pin DDR4 2666MHz	MEM-DR416L-HL03-ER26	1	(included)	4		
Intel DC P4500 1TB NVMe PCIe 3.0 SSD	HDS-IUN0-SSDPE2KX010T7	1	(included)	1		
2-port 25GbE SFP28 Mellanox CX-4 Lx EN and 2-port 10GbE RJ45 Intel X550	AOC-MH25G-M2S2TM-O	1	(included)	1		
ASSEMBLY FEE	MC0037	1	(included)	1		
Maintenance - 7x24x4 Care Pack (3-yrs)	OS4HR3	1	(included)	1		
Server Hardware Sub Total					**128,200,000**	
Network						
Mellanox MSN2700-CS2F Spectrum 100GbE 1U Open Ethernet Switch	MSN2700-CS2F	2	29,000,000	1	29,000,000	
Mellanox ETH 100GbE to 4x25GbE, QSFP28 to 4xSFP28, 1m, Colored, 30AWG, CA-N	MCP7F00-A001R30N	2	156,000	1	156,000	
Technical Support and Warranty - 24x7, 4 Hours On-Site Support 1yr	Maintenance	2	2,900,000	3		8,700,000
Network Sub Total					**29,156,000**	**8,700,000**
Client/Server Software						
Red Hat Enterprise Linux Server Standard 3yrs	RH00004F3	3	4,098,000	3	12,294,000	
RHEL Server Standard Maintenance - 3yrs 24x7x4hrs	RP-CPS(OS)	3	6,000,000	3		18,000,000
Red Hat JBoss Web Server 16-Core Standard 3Year	MW0232248F3	3	7,799,000	2	15,598,000	
JBoss Web Server per 16Core 3Year Maintenance	RP-CPS(WAS)	3	12,000,000	2		24,000,000
Goldilocks v3.1 Standard Edition		4	96,000,000	1	96,000,000	
Goldilocks v3.1 Standard Edition Technical Supports		4	10,000,000	3		30,000,000
Software Sub Total					**123,892,000**	**72,000,000**

TPC-C Executive Summary

Infrastructure							
HP EliteDisplay E243 23.8-inch Monitor (w/ spares)	1FH48AA	5	249,900	3	749,700	
HP Slim USB Keyboard and Mouse (w/ spares)	T6L04AA	5	50,000	3	164,700	
Infrastructure Sub Total					**914,400**	
Discounts*						
Red Hat Enterprise Linux Server Standard					(5,094,000)	(12,000,000)
Red Hat Jboss Web Server 16 Core Standard					(5,598,000)	(12,000,000)
Goldilocks v3.1 Standard Edition					(64,000,000)	(15,600,000)
Discounts Sub Total					**(74,692,000)**	**(39,600,000)**
Total					**207,470,400**	**41,100,000**

Pricing Notes

1)Super Solution Co.,LTD   4) Sunjesoft Inc.
2) ICRAFT Co., LTD   5) Hewlett Packard Inc.
3) Rockplace Inc.

All of the prices are based on South Korea's currency, KRW (₩, Korean Won) and excluded VAT.

* 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.

Three year cost of ownership KRW(₩):   248,570,400

TPC-C throughput: 380,475 tpmC

Price/Performance: 654 ₩ / tpmC

Benchmark implementation and results independantly audited by Francois Raab of 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 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. Thank you.

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MQTh, computed Maximum Qualified Throughput		**380,475 tpmC**	

Response Times (seconds)	**Min**	**Average**	**90th**	**Max**
New-Order	0.102	0.116	0.112	5.326
Payment	0.102	0.115	0.112	5.325
Order-Status	0.101	0.113	0.111	5.274
Delivery (interactive portion)	0.101	0.110	0.110	5.128
Delivery (deferred portion)	0.002	0.249	0.543	8.502
Stock-Level	0.102	0.114	0.112	5.274
Menu	0.101	0.111	0.110	5.129

Emulated Display Delay: 0.1 sec.

Transaction Mix	**Percent**	**Number**
New-Order	44.980%	159,799,583
Payment	43.011%	152,806,136
Order-Status	4.003%	14,219,897
Delivery	4.003%	14,222,472
Stock-Level	4.003%	14,222,400

Keying Times (seconds)	**Min**	**Average**	**Max**
New-Order	18.001	18.001	18.020
Payment	3.001	3.001	3.023
Order-Status	2.001	2.001	2.018
Delivery	2.001	2.001	2.014
Stock-Level	2.001	2.001	2.020

Think Times (seconds)	**Min**	**Average**	**Max**
New-Order	0.001	12.043	120.501
Payment	0.001	12.044	120.501
Order-Status	0.001	10.048	100.501
Delivery	0.001	5.031	50.301
Stock-Level	0.001	5.030	50.301

Test Duration	
Ramp-up time	65 min
Measurement Interval (MI)	420 min
Checkpoints in MI	15
Checkpoint Interval (Average / Max)	28.12 min / 28.15 min
Number of Transactions in MI (all types)	355,270,488

TPC-C Executive Summary