



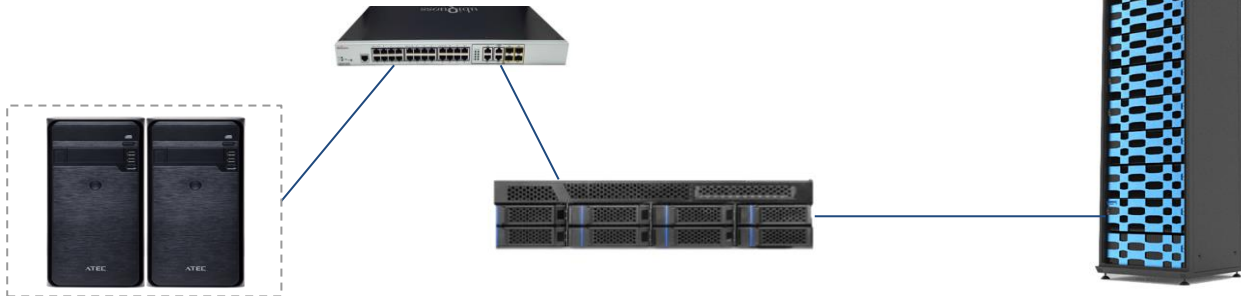
Goldilocks v3.1 Standard Edition on KTNF KR580S1

TPC-C Version 5.11.0
TPC Pricing 2.3.0

Report Date
19-Nov-2018

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
₩ 255,887,000 (KRW)	152,330 tpmC	1,680 KRW/tpmC	Available Now
Server Processors/Cores/Threads	Database Manager	Operating System	Other Software
2/20/40	Goldilocks v3.1 Standard Edition	RHEL 7.5	JBoss Web Server 3.1
Number of Users			
120,000			

1Gb Ethernet Switch



Web Application Server

2 x ATEC A6HGBCP

- 1 x Intel Xeon E3-1270 V5 3.60GHz
- 2 x 8GB Memory
- 1 x 1TB SATA HDD
- 1 x 250GB SATA SSD
- 1 x 1Gb Ethernet

Database Server

1 x KTNF KR580S1

- 2 x Intel Xeon Silver 4114 2.20GHz
- 24 x 64GB (1.5TB) Memory
- 2 x 480GB SATA SSD
- 1 x 16/32Gb 4-Port Host Bus Adaptor
- 1 x 10Gb Ethernet

Storage

1 x UNIWISE FCH2800

- 16 x 32GB (512GB) Cache Memory
- 8 x 1.6TB FMD Drive
- 4 x 8/16Gb 8-Port Host Bus Adaptor

System Components	DB Server		WAS Server	
	Quantity	Description	Quantity	Description
Processors/Cores/Threads	2/20/40	Intel Xeon Silver 4114 2.20GHz	1/4/8	Intel Xeon E3-1270 V5 3.60GHz
Memory	24	64GB	2	8GB
Storage Controller	1	SAS 12G Raid 16/32Gb FC HBA		
Storage Device	2 8	480GB SATA SSD 1.6TB FMD SSD (External)	1 1	1TB SATA HDD 250GB SATA SSD
Total Storage Capacity		13.76TB		



Goldilocks v3.1 Standard Edition on KTNF KR580S1

**TPC-C Version 5.11.0
TPC Pricing 2.3.0**

**Report Date
19-Nov-2018**

Available Now

Description	Part Number	Source	Unit Price	Qty	Price	3-Yr. Maint. Price
Server Hardware						
1 x DB Server - KTNF KR580S1	PAB0221A	1	33,250,000	1	33,250,000	
DB Server-K580S1 Barebone	HDD0043A	1	(included)			
Intel Xeon Scalable Silver 4114 Processor (10Core 2.2GHz/13.75MB)	HAK0097A	1	(included)	2		
64GB DDR4 2400 ECC RDIMM Memory	HCL0015A	1	(included)	24		
480GB 2.5" SATA SSD	HCZ0032A	1	(included)	2		
Broadcom MEGARAID SAS 9361-8i RAID Card (1GB Cache)	HCH0037A	1	(included)	1		
Qlogic 4port 16G FC HBA Adapter	HAZ0005A	1	(included)	1		
Intel 2port 10G LC Fiber Server Adapter	HBV0080A	1	(included)	1		
SFP+ Transceiver	HCW0009A	1	(included)	2		
Trackball Mini Keyboard	HDM0001A	1	(included)	1		
KTNF 27-inch Monitor	HDM0002A	1	(included)	1		
Maintenance - 7x24x4 Care Pack (3-yrs)		1	4,500,000	1		4,500,000
2 x WAS Servers (per server) - A6HGBDPNN						
Intel® Xeon® Processor XEON E3-1270V5, 3.6GHz	PCPURXEON010A	2	1,880,000	2	3,760,000	
DDR4 8GB (2400MHz / PC4 19000 / ECC / REG)	PMEMRE409630A	2	(included)	1		
Samsung 850EVO, 250GB, SATA3, TLC, MEX	PSSDR250G002A	2	(included)	2		
1TB, 7200RPM, 64M, SATAIII, ST1000DM010	PHDDR001T011A	2	(included)	1		
KUB-1407, USB, Black	PKBDRPK10612A	2	(included)	1		
MUB-1407, USB, 1000DPI, Black	PMOURU000019C	2	(included)	1		
Tower, 500W, ATX	PPOWR500W004A	2	(included)	1		
UTP CAT5e Ethernet Cable 1M	PCPURXEON010A	2	(included)	1		
Power Cord, NICETECH, 2.5M	PMEMRE409630A	2	(included)	1		
A6HGBDPNN 7x24x4 Care Pack (3-yrs)		2	240,000	2		480,000
Server Hardware Sub Total					37,010,000	4,980,000
Storage Hardware						
All Flash Storage - FCH2800	FCH2800	3	72,250,000	1	72,250,000	
FCH2800 Controller Device	T0001-0117-00	3	(included)	1		
Back-end Bus Adapter 12G SAS	T0001-0117-01	3	(included)	1		
16G 8-Port Host Bus Adapter	T0001-0117-02	3	(included)	4		
Cache Interconnect Adapter	T0001-0117-03	3	(included)	1		
Cache Memory DDR-3 (32GB)	T0001-0117-04	3	(included)	16		
FCH2800 Flash Disk Drive Expansion Unit	T0001-0117-05	3	(included)	1		
FCH2800 controller cpu Board	T0001-0117-06	3	(included)	1		
Rack 600x1200x2010 mm (WxDxH) 42U	T0001-0117-07	3	(included)	1		
Storage Management SW	T0001-0117-08	3	(included)	1		

UTP CAT5e Ethernet Cable 1M	61001-0001-00	3	(included)	1		
Power Cord, NICETECH, 2.5M	42119-0005-00	3	(included)	2		
1.6TB Flash Memory Disk Drive	DKC-F810I-1R6FM.P	3	3,900,000	8	31,200,000	
3-yrs 24x7x4hrs Onsite Support Service		3	26,350,000	1		26,350,000
Storage Hardware Sub Total					103,450,000	26,350,000
<u>Client/Server Software</u>						
Red Hat Enterprise Linux Server Standard 3yrs	RH00004F3	4	3,975,000	3	11,925,000	
RHEL Server Standard Maintenance - 3yrs 24x7x4hrs	RSC-LSF3	4	6,000,000	3		18,000,000
JBoss Enterprise Web Server, Standard 3Year	MW0232248F3	4	7,571,000	2	15,142,000	
JBoss Standard per 16Core 3Year Maintenance	RSC-JSF3	4	12,000,000	2		24,000,000
Goldilocks v3.1 Standard Edition		5	96,000,000	1	96,000,000	
Goldilocks v3.1 Standard Edition Technical Supports		5	10,000,000	3		30,000,000
Software Sub Total					123,067,000	60,000,000
<u>Other Hardware</u>						
UbiQuoss uSafe3010-24ps (w/spares)	22917890	6	1,500,000	3	4,500,000	
Other Hardware Sub Total					4,500,000	
<u>Discounts*</u>						
Server Discount						-1,950,000
SW Discount - Goldilocks					-64,000,000	-15,600,000
Red Hat OS Discount					-4,770,000	-12,000,000
Red Hat JBoss Discount					-5,150,000	-6,000,000
Discounts Sub Total					-73,920,000	-41,550,000
Total					194,107,000	61,780,000

<u>Pricing Notes</u> 1) KTNF Co., Ltd 4) Rockplace Inc. 2) Atec Co., Ltd. 5) Sunjesoft Inc. 3) UNIWIDE Technologies Inc. 6) NSG Inc.	Three year cost of ownership KRW(W): 255,887,000
	TPC-C throughput: 152,330 tpmC Price/Performance: 1,680 W / tpmC
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.	

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.



Goldilocks v3.1 Standard Edition on KTNF KR580S1

TPC-C Version 5.11.0
TPC Pricing 2.3.0

Report Date
19-Nov-2018

Available Now

MQTh, computed Maximum Qualified Throughput **152,330 tpmC**

Response Times (seconds)	Min	Average	90th	Max
New-Order	0.102	0.105	0.108	0.736
Payment	0.102	0.105	0.107	0.72
Order-Status	0.102	0.104	0.106	0.743
Delivery (interactive portion)	0.101	0.101	0.101	0.47
Delivery (deferred portion)	0.003	0.011	0.023	1.151
Stock-Level	0.102	0.105	0.107	0.735
Menu	0.101	0.102	0.102	0.527

Emulated Display Delay: 0.1 sec.

Transaction Mix	Percent	Number
New-Order	44.980%	63,981,506
Payment	43.012%	61,181,710
Order-Status	4.002%	5,693,012
Delivery	4.003%	5,694,372
Stock-Level	4.003%	5,694,318

Keying Times (seconds)	Min	Average	Max
New-Order	18.001	18.001	18.014
Payment	3.001	3.001	3.020
Order-Status	2.001	2.001	2.010
Delivery	2.001	2.001	2.020
Stock-Level	2.001	2.001	2.011

Think Times (seconds)	Min	Average	Max
New-Order	0.001	12.045	120.501
Payment	0.001	12.041	120.501
Order-Status	0.001	10.042	100.501
Delivery	0.001	5.028	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)	27:53 / 27:56
Number of Transactions in MI (all types)	142,244,918