	Goldilocks v3.1 Standard Edition on ATEC A208G2	**TPC-C Version 5.11.0** **TPC Pricing 2.3.0**
TTA		Report Date **21-Nov-2018**

Total System Cost	TPC-C Throughput	Price/Performance	Availability Date
₩ 247,917,000 (KRW)	**76,172 tpmC**	**3,260 KRW/tpmC**	**Available Now**

Server Processors/Cores/Threads	Database Manager	Operating System	Other Software	Number of Users
2/36/72	**Goldilocks v3.1 Standard Edition**	**RHEL 7.5**	**JBoss Web Server**	**60,000**

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 ATEC A208G2
- 2 x Intel Xeon Gold 6150 2.70GHz
- 24 x 32GB (768GB) Memory
- 2 x 600GB SAS HDD
- 16Gb 2-Port Host Bus Adaptor
- 1 x 10Gb Ethernet

Storage

1 x UNIWIDE 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	2/36/72	Intel Xeon Gold 6150 2.70GHz	1/4/8	Intel Xeon E3-1270 V5 3.60GHz
Memory	24	32GB	2	8GB
Storage Controller	1 1	SAS 12G Raid 16/32Gb FC HBA		
Storage Device	2 8	600GB SAS HDD 1.6TB FMD SSD (External)	1 1	1TB SATA HDD 250GB SATA SSD
Total Storage Capacity		14TB		

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Description	Part Number	Source	Unit Price	Qty	Price	3-Yr. Maint. Price
Server Hardware						
1 x DB Server - A208G2	A208G2	1	24,200,000	1	**24,200,000**	
A208G2 Platform	PCPURXEON016A	1	(included)	1		
Intel® Xeon® Gold Processor 6150 (18Core, 2.7GHz)	PMEMRE409640A	1	(included)	2		
32GB DD4 ECC Registered DIMM4	PHDDA300G004A	1	(included)	24		
600GB SAS 12Gb/s 10K RPM (128MB)	PPWARSUB0494A	1	(included)	2		
RAID Controller LSI3108 (2GB Cache/ Raid Lv.0, 1, 5, 6, 10, 50, 60)	PPWARNIC0018A	1	(included)	1		
Intel® I350 1GbE 4Port Ethernet NIC	PDVWR024N015B	1	(included)	1		
Slim DVD Multi	PMETRCET2574A	1	(included)	1		
Enhanced Value RAIL KIT	PPOWAA10W002A	1	(included)	1		
1300w AC 80+ Titanium Efficiency Power supply	PCPURXEON016A	1	(included)	1		
Trackball Mini Keyboard	PMEMRE409640A	1	(included)	1		
27-inch Monitor	PHDDA300G004A	1	(included)	1		
Maintenance - 7x24x4 Care Pack (3-yrs)		1	3,630,000	1		**3,630,000**
2 x WAS Servers (per server) - A6HGBDPNN	A6HGBDPNN	1	1,880,000	2	**3,760,000**	
Intel® Xeon® Processor XEON E3-1270V5, 3.6GHz	PCPURXEON010A	1	(included)	1		
DDR4 8GB (2400MHz / PC4 19000 / ECC / REG)	PMEMRE409630A	1	(included)	2		
Samsung 850EVO, 250GB, SATA3, TLC, MEX	PSSDR250G002A	1	(included)	1		
1TB, 7200RPM, 64M, SATAIII, ST1000DM010	PHDDR001T011A	1	(included)	1		
KUB-1407, USB, Black	PKBDRPK10612A	1	(included)	1		
MUB-1407, USB, 1000DPI, Black	PMOURU000019C	1	(included)	1		
Tower, 500W, ATX	PPOWR500W004A	1	(included)	1		
UTP CAT5e Ethernet Cable 1M	PCPURXEON010A	1	(included)	1		
Power Cord, NICETECH, 2.5M	PMEMRE409630A	1	(included)	1		
A6HGBDPNN 7x24x4 Care Pack (3-yrs)		1	240,000	2		**480,000**
Server Hardware Sub Total					**27,960,000**	**4,110,000**
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 Expantion 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**
Client/Server Software						
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**
Other Hardware						
UbiQuoss uSafe3010-24ps (w/spares)	22917890	6	1,500,000	3	4,500,000	
Other Hardware Sub Total					**4,500,000**	
Discounts*						
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**	**-39,600,000**
Total					**185,057,000**	**62,860,000**

Pricing Notes	
Pricing Notes 1) Atec Co., Ltd. 4) Rockplace Inc. 2) Not Used 5) Sunjesoft Inc. 3) UNIWIDE Technologies Inc. 6) NSG Inc.	**Three year cost of ownership KRW(₩): 247,917,000**
All of the prices are based on South Korea's currency, KRW (₩, Korean Won) and excluded VAT.	**TPC-C throughput: 76,172 tpmC**
* 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.	**Price/Performance: 3,260 ₩ / 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		**76,172 tpmC**	

Response Times (seconds)	**Min**	**Average**	**90th**	**Max**
New-Order	0.102	0.104	0.104	0.458
Payment	0.102	0.103	0.104	0.439
Order-Status	0.102	0.103	0.103	0.415
Delivery (interactive portion)	0.101	0.101	0.101	0.397
Delivery (deferred portion)	0.002	0.004	0.006	0.252
Stock-Level	0.102	0.103	0.103	0.414
Menu	0.101	0.102	0.102	0.539

Emulated Display Delay: 0.1 sec.

Transaction Mix	**Percent**	**Number**
New-Order	44.979%	31,993,538
Payment	43.011%	30,594,046
Order-Status	4.003%	2,847,166
Delivery	4.003%	2,847,453
Stock-Level	4.004%	2,847,797

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

Think Times (seconds)	**Min**	**Average**	**Max**
New-Order	0.001	12.046	120.516
Payment	0.001	12.040	120.501
Order-Status	0.001	10.035	100.501
Delivery	0.001	5.032	50.301
Stock-Level	0.001	5.031	50.301

Test Duration	
Ramp-up time	65 min
Measurement Interval (MI)	420 min
Checkpoints in MI	15
Checkpoint Interval (Average / Max)	27:58 / 27:59
Number of Transactions in MI (all types)	71,130,000