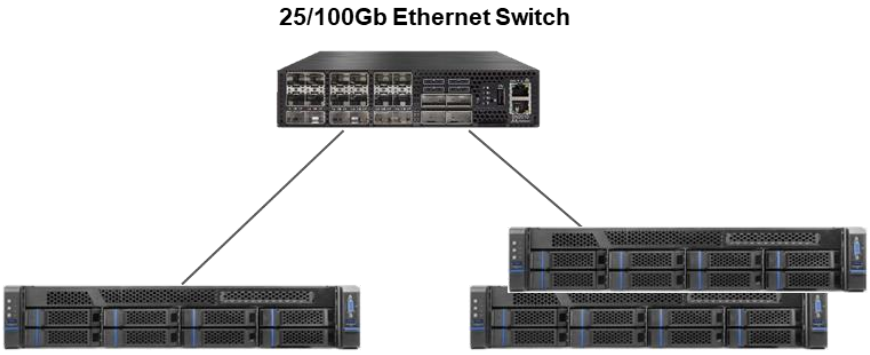
TTA	**Machbase 5.7.3**	TPCx-IoT 1.0.4 TPC Pricing 2.4.0 Report Date Nov. 11, 2019

Total System Cost	TPCx-IoT Performance Metric	Price/Performance
$344,548 USD	**1,043,276.60 IoTps**	**$0.34 USD/IoTps**

Servers	Operating System	Other Software	Availability Date
KTNF KR580S1	CentOS Linux 7.6.1810	None	Currently Available

System Under Test Configuration Overview



Master Node

1 x KTNF KR580S1
- 2 x Intel Xeon Gold 6140 2.30GHz
- 12 x 64GB (768GB) Memory
- 2 x 600GB SAS HDD
- 1 x 25Gb 2-Port Ethernet Adaptor

Data Node

2 x KTNF KR580S1
- 2 x Intel Xeon Gold 6140 2.30GHz
- 4 x 64GB (256GB) Memory
- 2 x 600GB SAS HDD
- 2 x 1.6TB NVMe SSD
- 1 x 25Gb 2-Port Ethernet Adaptor

Total Servers:	3x KR580S1	
Total Processors/Cores/Threads:	6/108/216	
Server Configuration: Processor Memory Storage Controller Storage Device Network Controller	1x KR580S1 (Master): 2x Intel® Xeon® Gold 6140 (2.30GHz, 18-core, 24.75 MB L3) 768 GiB Broadcom MEGARAID SAS 9361-8i 2x 600 GB 10.5K RPM SAS HDD Mellanox MCX4121A-ACAT 25G	2x KR580S1 (Data): 2x Intel® Xeon® Gold 6140 (2.30GHz, 18-core, 24.75 MB L3) 256 GiB Broadcom MEGARAID SAS 9361-8i 2x 600 GB 10.5K RPM SAS HDD 2x 1.6 TB NVMe SSD Mellanox MCX4121A-ACAT 25G
Connectivity Total Rack Units:	Mellanox MSN2010-CB2F 10/25GbE and 100GbE Switch (3x KTNF KR580S1) + (1x MSN201-CB2F) = (3x2) + (1x1) = 7 RU	

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Description	Part Number	Source	List Price	Qty	Extended Price	3-year Maint. Price
Server Hardware						
1 x Master Node – KTNF KR580S1	KR580S1	1	$ 31,610.00	1	$ 31,610.00	
KR580S1 Barebone	-	1	(included)	1		
Intel Xeon Scalable Gold 6140 Processor	-	1	(included)	2		
64GB DDR4 2400 ECC RDIMM Memory	-	1	(included)	12		
600GB SAS HDD 10,500RPM	-	1	(included)	2		
Broadcom MEGARAID SAS 9361-8i RAID Card (1GB Cache)	-	1	(included)	1		
Mellanox MCX4121A-ACAT 25G Ethernet Adaptor	-	1	(included)	1		
KTNF 27" Monitor	-	1	(included)	1		
Trackball Mini Keyboard	-	1	(included)	1		
Maintenance - 7x24x4 Care Pack (3-yrs)	-	1	(included)	1		
2 x Data Node – KTNF KR580S1	KR580S1	1	$ 23,830.00	2	$ 47,660.00	
KR580S1 Barebone	-	1	(included)	1		
Intel Xeon Scalable Gold 6140 Processor	-	1	(included)	2		
64GB DDR4 2400 ECC RDIMM Memory	-	1	(included)	4		
600GB SAS HDD 10,500RPM	-	1	(included)	2		
Broadcom MEGARAID SAS 9361-8i RAID Card (1GB Cache)	-	1	(included)	1		
Intel P4610 1.6TB NVMe SSD	-	1	(included)	2		
Mellanox MCX4121A-ACAT 25G Ethernet Adaptor	-	1	(included)	1		
KTNF 27" Monitor	-	1	(included)	1		
Trackball Mini Keyboard	-	1	(included)	1		
Maintenance - 7x24x4 Care Pack (3-yrs)	-	1	(included)	1		
Server Hardware Sub Total					**$ 79,270.00**	
Network						
Mellanox MSN2010-CB2F 10/25GbE and 100GbE Switch	MSN2010-CB2F	2	$ 9,567.00	1	$ 9,567.00	
Mellanox MCP2M00-A003E30L Passive Copper Cable ETH up to 25Gb/s SFP28 3m Black 30AWG CA-L	MCP2M00-A003E30L	2	$ 64.00	3	$ 192.00	
Mellanox SUP-SN2000-3S-4H Technical Support and Warranty - Silver 3 Year with 4 Hours On-Site Support for SN2000 Series Switch	SUP-SN2000-3S-4H	2	$ 2,475.00	1		$ 2,475.00
Network Sub Total					**$ 9,759.00**	**$ 2,475.00**
Software						
rockPLACE CentOS Support Careepack - 3 Year 24x7, 4hr response	RSC-LSF3	3	$ 1,538.00	3		$ 4,614.00
Machbase v5.7.3 Cluster Edition (includes 1y 7x24x4 Technical Support)	-	4	$ 63,700.00	3	$ 191,100.00	
Machbase v5.7.3 Cluster Edition 7x24x4 Technical Support	-	4	$ 28,665.00	2		$ 57,330.00
Software Sub Total					**$ 191,100.00**	**$ 61,944.00**
Total					**$ 280,129.00**	**$ 64,419.00**

Pricing: 1 = KTNF Co. Ltd.; 2 = Mellanox Technologies, Ltd.; 3 = Rockplace Inc.; 4 = Machbase Inc.

* Discount applies to all line items where Source = 4.

Audited by Doug Johnson, InfoSizing

Three-Year Cost of Ownership: $344,548

IoTps: 1,043,276.60

USD/IoTps: $0.34

Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated Line Items. 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 Line Items. For complete details, see the pricing section of the TPC Benchmark Standard. 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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Numerical Quantities

Scale Factor	2100000000

Performance Run (Run2)

Warmup Run Start Time	2019-10-21 11:19:50.000
Warmup Run End Time	2019-10-21 11:54:10.000
Warmup Run Elapsed Time	2,059.186
Measured Run Start Time	2019-10-21 11:54:11.000
Measured Run End Time	2019-10-21 12:27:45.000
Measured Run Elapsed Time	2,012.889
Performance Metric (IoTps)	**1,043,276.60**

Repeatability Run (Run1)

Warmup Run Start Time	2019-10-21 10:11:50.000
Warmup Run End Time	2019-10-21 10:45:29.000
Warmup Run Elapsed Time	2,017.764
Measured Run Start Time	2019-10-21 10:45:29.000
Measured Run End Time	2019-10-21 11:18:32.000
Measured Run Elapsed Time	1,982.044
Performance Metric (IoTps)	1,059,512.30

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Performance Run Report (Run2)

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TPCx-IoT Performance Metric (IoTps) Report
Test Run2 details : Total Time For Warmup Run In Seconds = 2,059.186
Test Run2 details : Total Time In Seconds = 2,012.889
Total Number of Records = 2100000000

TPCx-IoT Performance Metric (IoTps): 1043276.6039

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Repeatability Run Report (Run1)

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TPCx-IoT Performance Metric (IoTps) Report
Test Run1 details : Total Time For Warmup Run In Seconds = 2,017.764
Test Run1 details : Total Time In Seconds = 1,982.044
Total Number of Records = 2100000000

TPCx-IoT Performance Metric (IoTps): 1059512.3014

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Summary details of the run reports are show above. For the complete run reports, see the Supporting Files Archive.

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Revision History

Date	Edition	Description
November 11, 2019	First	Initial Publication