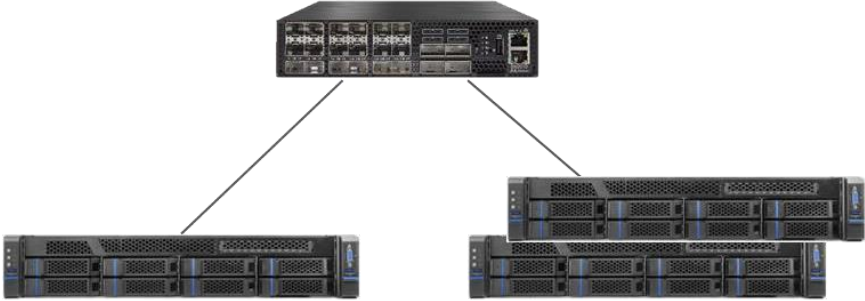

	<h1 style="text-align: center;">Machbase 5.7.3</h1>		TPCx-IoT	2.0.0
			TPC Pricing	2.4.0
Total System Cost \$344,548 USD			TPCx-IoT Performance Metric 1,043,276.60 IoTps	
			Price/Performance \$330.26 USD/kIoTps	
Servers	Operating System	Other Software	Availability Date	
KTNF KR580S1	CentOS Linux 7.6.1810	None	Currently Available	
System Under Test Configuration Overview				
<p>25/100Gb Ethernet Switch</p> 				
<p><u>Master Node</u></p> <p>1 x KTNF KR580S1</p> <ul style="list-style-type: none"> - 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 		<p><u>Data Node</u></p> <p>2 x KTNF KR580S1</p> <ul style="list-style-type: none"> - 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:	1x KR580S1 (Master):		2x KR580S1 (Data):	
Processor	2x Intel® Xeon® Gold 6140 (2.30GHz, 18-core, 24.75 MB L3)		2x Intel® Xeon® Gold 6140 (2.30GHz, 18-core, 24.75 MB L3)	
Memory	768 GiB		256 GiB	
Storage Controller	Broadcom MEGARAID SAS 9361-8i		Broadcom MEGARAID SAS 9361-8i	
Storage Device	2x 600 GB 10.5K RPM SAS HDD		2x 600 GB 10.5K RPM SAS HDD 2x 1.6 TB NVMe SSD	
Network Controller	Mellanox MCX4121A-ACAT 25G		Mellanox MCX4121A-ACAT 25G	
Connectivity	Mellanox MSN2010-CB2F 10/25GbE and 100GbE Switch			
Total Rack Units:	(3x KTNF KR580S1) + (1x MSN201-CB2F) = (3x2) + (1x1) = 7 RU			

	<h1>Machbase 5.7.3</h1>	TPCx-IoT 2.0.0 TPC Pricing 2.4.0 Report Date April. 02, 2021	
<p>Description</p>		<p>Part Number Source List Price Qty Extended Price 3-year Maint. Price</p>	
<p>Server Hardware</p>			
<p>1 x Master Node – KTNF KR580S1</p>			
KR580S1 Barebone	KR580S1	1 \$ 31,610.00	1 \$ 31,610.00
Intel Xeon Scalable Gold 6140 Processor	-	(included) 1	
64GB DDR4 2400 ECC RDIMM Memory	-	(included) 2	
600GB SAS HDD 10,500RPM	-	(included) 12	
Broadcom MEGARAID SAS 9361-8i RAID Card (1GB Cache)	-	(included) 2	
Mellanox MCX4121A-ACAT 25G Ethernet Adaptor	-	(included) 1	
KTNF 27" Monitor	-	(included) 1	
Trackball Mini Keyboard	-	(included) 1	
Maintenance - 7x24x4 Care Pack (3-yrs)	-	(included) 1	
<p>2 x Data Node – KTNF KR580S1</p>			
KR580S1 Barebone	KR580S1	1 \$ 23,830.00	2 \$ 47,660.00
Intel Xeon Scalable Gold 6140 Processor	-	(included) 1	
64GB DDR4 2400 ECC RDIMM Memory	-	(included) 2	
600GB SAS HDD 10,500RPM	-	(included) 4	
Broadcom MEGARAID SAS 9361-8i RAID Card (1GB Cache)	-	(included) 2	
Intel P4610 1.6TB NVMe SSD	-	(included) 1	
Intel P4610 1.6TB NVMe SSD	-	(included) 1	
Mellanox MCX4121A-ACAT 25G Ethernet Adaptor	-	(included) 2	
KTNF 27" Monitor	-	(included) 1	
Trackball Mini Keyboard	-	(included) 1	
Maintenance - 7x24x4 Care Pack (3-yrs)	-	(included) 1	
<p>Server Hardware Sub Total</p>			\$ 79,270.00
<p>Network</p>			
<p>Mellanox MSN2010-CB2F 10/25GbE and 100GbE Switch</p>			
Mellanox MCP2M00-A003E30L Passive Copper Cable ETH up to 25Gb/s	MSN2010-CB2F	2 \$ 9,567.00	1 \$ 9,567.00
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
<p>Network Sub Total</p>			\$ 9,759.00 \$ 2,475.00
<p>Software</p>			
<p>rockPLACE CentOS Support Carepack - 3 Year 24x7, 4hr response</p>			
Machbase v5.7.3 Cluster Edition (includes 1y 7x24x4 Technical Support)	RSC-LSF3	3 \$ 1,538.00	3 \$ 4,614.00
Machbase v5.7.3 Cluster Edition 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
<p>Software Sub Total</p>			\$ 191,100.00 \$ 61,944.00
<p>Total</p>			\$ 280,129.00 \$ 64,419.00
<p>Pricing: 1 = KTNF Co. Ltd.; 2 = Mellanox Technologies, Ltd.; 3 = Rockplace Inc.; 4 = Machbase Inc.</p> <p>* Discount applies to all line items where Source = 4.</p> <p>Audited by Doug Johnson, InfoSizing</p>		<p>Three-Year Cost of Ownership: \$344,548</p> <p>IoTps: 1,043,276.60</p> <p>USD/kIoTps: \$330.26</p>	
<p><i>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.</i></p>			

	<h2>Machbase 5.7.3</h2>	<table> <tr> <td>TPCx-IoT</td> <td>2.0.0</td> </tr> <tr> <td>TPC Pricing</td> <td>2.4.0</td> </tr> <tr> <td>Report Date</td> <td>April. 02, 2021</td> </tr> </table>	TPCx-IoT	2.0.0	TPC Pricing	2.4.0	Report Date	April. 02, 2021																												
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<table> <tr> <td>Scale Factor</td> <td>2100000000</td> </tr> <tr> <td colspan="2" style="text-align: center;">Performance Run (Run2)</td> </tr> <tr> <td>Warmup Run Start Time</td> <td>2019-10-21 11:19:50.000</td> </tr> <tr> <td>Warmup Run End Time</td> <td>2019-10-21 11:54:10.000</td> </tr> <tr> <td>Warmup Run Elapsed Time</td> <td>2,059.186</td> </tr> <tr> <td>Measured Run Start Time</td> <td>2019-10-21 11:54:11.000</td> </tr> <tr> <td>Measured Run End Time</td> <td>2019-10-21 12:27:45.000</td> </tr> <tr> <td>Measured Run Elapsed Time</td> <td>2,012.889</td> </tr> <tr> <td>Performance Metric (IoTps)</td> <td>1,043,276.60</td> </tr> <tr> <td colspan="2" style="text-align: center;">Repeatability Run (Run1)</td> </tr> <tr> <td>Warmup Run Start Time</td> <td>2019-10-21 10:11:50.000</td> </tr> <tr> <td>Warmup Run End Time</td> <td>2019-10-21 10:45:29.000</td> </tr> <tr> <td>Warmup Run Elapsed Time</td> <td>2,017.764</td> </tr> <tr> <td>Measured Run Start Time</td> <td>2019-10-21 10:45:29.000</td> </tr> <tr> <td>Measured Run End Time</td> <td>2019-10-21 11:18:32.000</td> </tr> <tr> <td>Measured Run Elapsed Time</td> <td>1,982.044</td> </tr> <tr> <td>Performance Metric (IoTps)</td> <td>1,059,512.30</td> </tr> </table>			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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TPCx-IoT	2.0.0							
TPC Pricing	2.4.0							
Report Date	April. 02, 2021							

Performance Run Report (Run2)

```

=====
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

Repeatability Run Report (Run1)

```

=====
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

Summary details of the run reports are show above. For the complete run reports, see the [Supporting Files Archive](#).

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TPC Pricing	2.4.0							
Report Date	April. 02, 2021							

Revision History

Date	Edition	Description
November 4, 2019	First	Initial Publication
April 2, 2021	Second	Update Price Performance Metric