



	<h1>Machbase 5.7.13</h1>	TPCx-IoT 1.0.5 TPC Pricing 2.5.0 Report Date Mar. 30, 2020			
Total System Cost \$419,793 USD	TPCx-IoT Performance Metric 2,199,052.90 IoTps	Price/Performance \$0.20 USD/IoTps			
Servers	Operating System	Other Software	Availability Date		
Supermicro A+ Server 2014TP-HTR	Red Hat Enterprise Linux Server Release 7.7	None	Currently Available		
System Under Test Configuration Overview					
<div style="text-align: center;"> <p>Mellanox SN2700 100Gb Ethernet Switch (32 x QSFP28 Ports)</p>  <p>↑ ↑ ↑ ↑</p>  <p>1 x Supermicro A+ Server 2014TP-HTR TwinPro™ with 4x H12SST-PS Nodes, each with:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>1 x Master Node</p> <ul style="list-style-type: none"> 1 x AMD EPYC 7502P 32-Core Processor 8 x 64GB (512GB) Memory 1 x 100GbE 2-Port Adaptor 1 x 25GbE 2-Port and 10GbE 2-Port Adaptor 1 x 1TB M.2 PCIe SSD </td> <td style="width: 50%; vertical-align: top;"> <p>3 x Data Nodes</p> <ul style="list-style-type: none"> 1 x AMD EPYC 7502P 32-Core Processor 8 x 32GB (256GB) Memory 1 x 100GbE 2-Port Adaptor 1 x 25GbE 2-Port and 10GbE 2-Port Adaptor 1 x 1TB M.2 PCIe SSD 2 x 3.84TB M.2 PCIe SSD </td> </tr> </table> </div>				<p>1 x Master Node</p> <ul style="list-style-type: none"> 1 x AMD EPYC 7502P 32-Core Processor 8 x 64GB (512GB) Memory 1 x 100GbE 2-Port Adaptor 1 x 25GbE 2-Port and 10GbE 2-Port Adaptor 1 x 1TB M.2 PCIe SSD 	<p>3 x Data Nodes</p> <ul style="list-style-type: none"> 1 x AMD EPYC 7502P 32-Core Processor 8 x 32GB (256GB) Memory 1 x 100GbE 2-Port Adaptor 1 x 25GbE 2-Port and 10GbE 2-Port Adaptor 1 x 1TB M.2 PCIe SSD 2 x 3.84TB M.2 PCIe SSD
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Total Servers:	1x Supermicro A+ Server 2014TP-HTR (TwinPro™ with 4x H12SST-PS Nodes)				
Total Processors/Cores/Threads:	4/128/256				
Server Configuration: Processor Memory Storage Device Network Controller	1x Master Node 1x AMD EPYC 7502P (2.50GHz, 32-core, 128 MB L3) 512 GiB 1x 1TB M.2 PCIe SSD Gen3 1x Mellanox MCX516A-CCAT 100GbE 1x Supermicro AOC-MH25G-m2S2TM 10GbE and 25GbE	3x Data Nodes 1x AMD EPYC 7502P (2.50GHz, 32-core, 128 MB L3) 256 GiB 1x 1TB M.2 PCIe SSD Gen3 2x 3.84TB M.2 PCIe SSD Gen3 1x Mellanox MCX516A-CCAT 100GbE 1x Supermicro AOC-MH25G-m2S2TM 10GbE and 25GbE			
Connectivity Total Rack Units:	Mellanox SN2700 100GbE Switch (2x 2014TP-HTR) + (1x SN2700) = (2x1) + (1x1) = 3 RU				

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					TPC Pricing	2.5.0
					Report Date	Mar. 30, 2020
Description	Part Number	Source	List Price (USD)	Qty	Extended Price (USD)	3 yr. Maint. Price (USD)
Server Hardware						
Supermicro A+ Server 2014TP-HTR	AS -2014TP-HTR	1	4,500.00	1	4,500.00	
AMD EPYC 7502P 32-Core Processor	PSE-ROM7502-0054	1	2,857.75	4	11,431.00	
SK hynix 64GB PC4-3200	MEM-DR464L-HL02-ER32	1	320.74	8	2,565.92	
SK hynix 32GB PC4-3200	MEM-DR432L-HL01-ER32	1	159.51	24	3,828.24	
Mellanox 100GbE Dual-Port NIC	AOC-MCX516A-CCAT	1	976.35	4	3,905.40	
2-port 25GbE SFP28 Mellanox CX-4 Lx EN and 2-port 10GbE RJ45 Intel X550	AOC-MH25G-m2S2TM	1	287.39	4	1,149.56	
1 TB NVMe SSD Toshiba KXG50ZNV1T02	HDS-TMN0-KXG50ZNV1T02	1	175.00	4	700.00	
3.84TB NVMe SSD Samsung PM983	HDS-SMN1-MZ1LB3T8HMLA07	1	677.35	6	4,064.10	
ASSEMBLY FEE	MC0037	1	250.00	1	250.00	
Maintenance - 7x24x4 Care Pack (3-yrs)	OS4HR3	1	3,000.00	1		3,000.00
Sub-Total					32,394.22	3,000.00
Network						
Mellanox MSN2700-CS2F Spectrum 100GbE 1U Open Ethernet Switch	MSN2700-CS2F	2	33,003.00	1	33,003.00	
Mellanox SUP-SN2000-CL-S-3S-4H Technical Support and Warranty - Silver 3 Year with 4 Hours On-Site Support for SN2700 Cumulus Series Switch	SUP-SN2000-CL-S-3S-4H	2	3,345.00	1		3,345.00
Mellanox MCP1600-E002E30 Passive Copper Cable IB EDR up to 100Gb/s QSFP28 2m Black 30AWG	MCP1600-E002E30	2	145.00	4	580.00	
Sub-Total					33,583.00	3,345.00
Software						
Red Hat Enterprise Linux Server7.7 with Premium Support 1 Year	RH00003	3	1,299.00	12		15,588.00
Machbase v5.7.13 Cluster Edition (includes 1y 7x24x4 Technical Support)	-	4	98,000.00	4	392,000.00	
Machbase v5.7.13 Cluster Edition 7x24x4 Technical Support	-	4	58,800.00	2		117,600.00
Sub-Total					392,000.00	133,188.00
Infrastructure						
HP EliteDisplay E243 23.8-inch Monitor (w/ spares)	1FH47A8#ABA	5	179.00	3	537.00	
HP Slim USB Keyboard and Mouse (w/ spares)	T6T83UT#ABA	5	35.00	3	105.00	
Sub-Total					642.00	-
Discounts*						
Machbase v5.7.13 Cluster Edition (includes 1y 7x24x4 Technical Support)					(137,200.00)	
Machbase v5.7.13 Cluster Edition 7x24x4 Technical Support						(41,160.00)
Sub-Total					(137,200.00)	(41,160.00)
Total					\$321,419.22 USD	\$98,373.00 USD
Price Source 1) Super Micro Computer Inc. 2) Mellanox Technologies, Ltd. 3) Red Hat Inc. 4) Machbase Inc. 5) Hewlett Packard Inc. Audited by Pre-Publication Board *All discounts are based on US 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: \$419,793 USD IoTps: 2,199,052.90 USD/IoTps: \$0.20 USD	
Prices used in TPC benchmarks must reflect the actual prices a customer would pay for purchase of the components in all regions specified in the result. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing conventions for the listed components. For complete details, see the pricing section of the TPC benchmark specification. If you find that stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org . Thank you.						

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TPC Pricing	2.5.0							
Report Date	Mar. 30, 2020							
<h2>Numerical Quantities</h2>								
Scale Factor	4100000000							
<h3>Performance Run (Run2)</h3>								
Warmup Run Start Time	2020-02-19 22:05:25.000							
Warmup Run End Time	2020-02-19 22:36:25.000							
Warmup Run Elapsed Time	1,860.143							
Measured Run Start Time	2020-02-19 22:36:26.000							
Measured Run End Time	2020-02-19 23:07:31.000							
Measured Run Elapsed Time	1,864.439							
Performance Metric (IoTps)	2,199,052.90							
<h3>Repeatability Run (Run1)</h3>								
Warmup Run Start Time	2020-02-19 21:00:02.000							
Warmup Run End Time	2020-02-19 21:31:12.000							
Warmup Run Elapsed Time	1,868.691							
Measured Run Start Time	2020-02-19 21:31:12.000							
Measured Run End Time	2020-02-19 22:02:09.000							
Measured Run Elapsed Time	1,855.897							
Performance Metric (IoTps)	2,209,174.32							

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TPCx-IoT	1.0.5							
TPC Pricing	2.5.0							
Report Date	Mar. 30, 2020							

Performance Run Report (Run2)

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 TPCx-IoT Performance Metric (IoTps) Report
 Test Run2 details : Total Time For Warmup Run In Seconds = 1,860.143
 Test Run2 details : Total Time In Seconds = 1,864.439
 Total Number of Records = 4100000000

TPCx-IoT Performance Metric (IoTps): 2199052.9054

Repeatability Run Report (Run1)

=====
 TPCx-IoT Performance Metric (IoTps) Report
 Test Run1 details : Total Time For Warmup Run In Seconds = 1,868.691
 Test Run1 details : Total Time In Seconds = 1,855.897
 Total Number of Records = 4100000000

TPCx-IoT Performance Metric (IoTps): 2209174.3237

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	2.5.0							
Report Date	Mar. 30, 2020							

Revision History

Date	Edition	Description
March 30, 2020	First	Initial Publication