



## **SPC BENCHMARK 1™**

### **EXECUTIVE SUMMARY**

#### **FUSIONSTACK® CO., LTD FUSIONSTOR® SF6000**

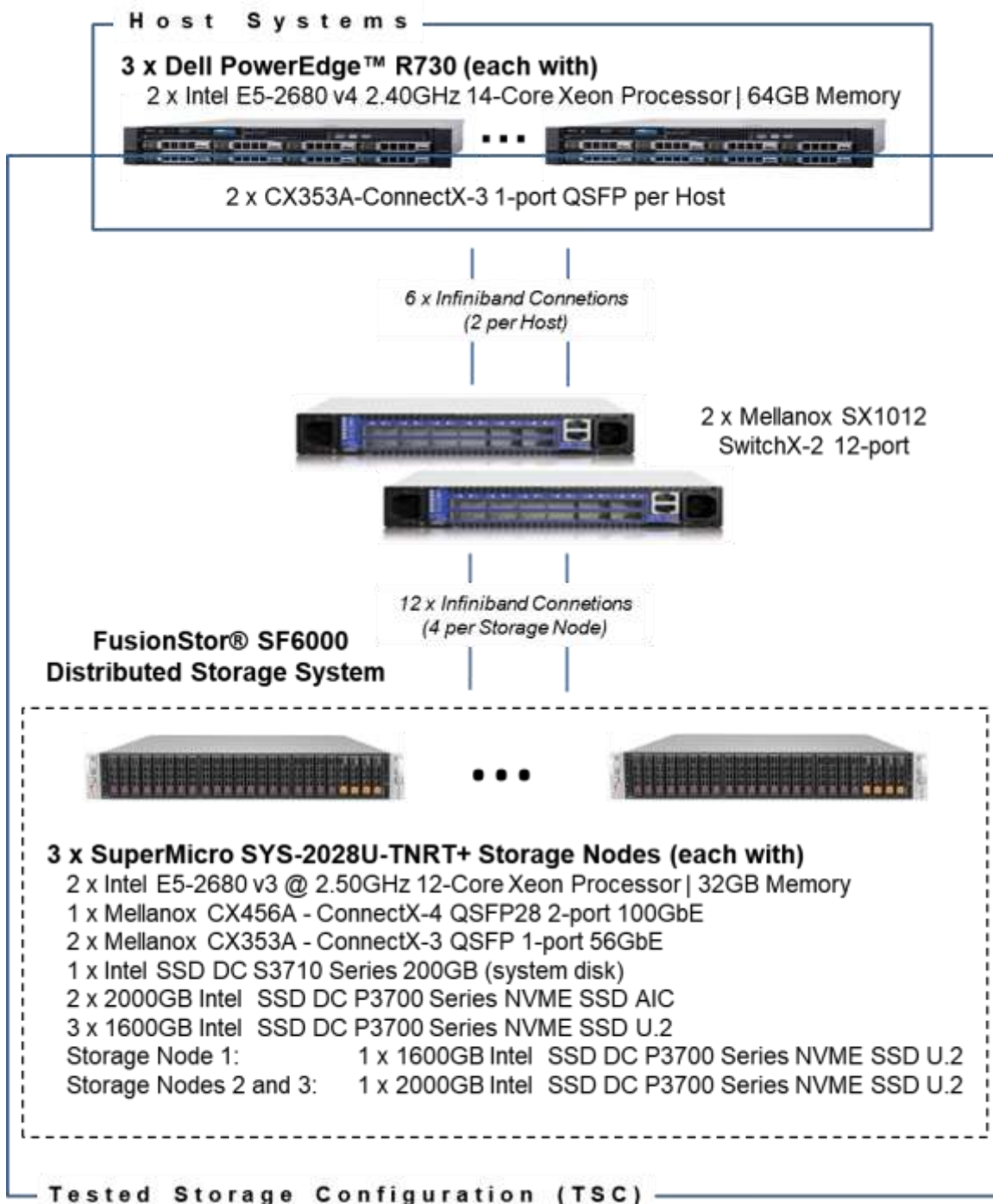
<b>SPC-1 IOPS™</b>	<b>801,083</b>
<b>SPC-1 Price-Performance™</b>	<b>\$ 121.73/SPC-1 KIOPS™</b>
SPC-1 IOPS™ Response Time	0.296 ms
SPC-1 Overall Response Time	0.208 ms
SPC-1 ASU Capacity	11,520 GB
SPC-1 ASU Price	\$ 8.47/GB
SPC-1 Total System Price	\$ 97,509.95
Data Protection Level	Protected 2 (mirroring and full redundancy)
Physical Storage Capacity	32,600 GB
Pricing Currency / Target Country	USD / People's Republic of China

**SPC-1 V3.4.0**

**SUBMISSION IDENTIFIER: A31008**

**SUBMITTED FOR REVIEW: SEPTEMBER 5, 2017**

### Benchmark Configuration Diagram



## Tested Storage Product Description

FusionStor is a software solution offering distributed, high availability, high performance shared storage resource pool with linear scalability and easy management.

The latest release for FusionStor SF6000 is version 4.0. FusionStack owns full copyrights to the software. It is distributed and running on commodity x86 servers and is optimized for most types of storage medias.

FusionStor supports Ethernet and Infiniband system interconnects and most storage system interface standards; such as iSCSI, NBD, iSER, NVMe-oF, Cinder, etc.

For more details, visit:

[http://www.fusionstack.cn/fusionstor\\_en?l=en](http://www.fusionstack.cn/fusionstor_en?l=en)

## Priced Storage Configuration Components

<b>6 x CX353A-ConnectX-3 1-port QSFP</b>
<b>3 x SuperMicro SYS-2028U-TNRT+ Storage Nodes (each with)</b> <ul style="list-style-type: none"><li><b>2 x Intel E5-2680 v3 @ 2.50GHz 12-Core Xeon Processor   32GB Memory</b></li><li><b>1 x Mellanox CX456A - ConnectX-4 QSFP28 2-port 100GbE</b></li><li><b>2 x Mellanox CX353A - ConnectX-3 QSFP 1-port 56GbE</b></li><li><b>1 x Intel SSD DC S3710 Series 200GB (system disk)</b></li><li><b>2 x 2000GB Intel SSD DC P3700 Series NVME SSD AIC</b></li><li><b>3 x 1600GB Intel SSD DC P3700 Series NVME SSD U.2</b></li><li><b>1 x 1600GB Intel SSD DC P3700 Series NVME SSD U.2 (in Storage Node 1)</b></li><li><b>1 x 2000GB Intel SSD DC P3700 Series NVME SSD U.2 (in Storage Nodes 2 &amp; 3)</b></li></ul>

## Storage Configuration Pricing

	Description	Source	Qty	Unit Price	Ext. Price	Disc.	Disc. Price
<b>Hardware &amp; Software</b>							
SYS-2028U-TNRT+	SuperMicro SuperServer 2028U-TNRT+	2	3	2,713.08	8,139.24		8,139.24
CM8064401439612	Intel® Xeon E5-2680 v3	2	6	1,554.69	9,328.14		9,328.14
M393A2K40BB0-CPB	DDR4 RECC 16GB 2400MT/s	2	12	152.42	1,829.04		1,829.04
SSDSC2BA200G401	Intel® DC S3710 200GB	3	3	205.77	617.31		617.31
SSDPEDMD020T401	Intel® DC P3700 2.0TB AIC	3	6	2,865.50	17,193.00		17,193.00
SSDPE2MD020T401	Intel® DC P3700 2.0TB U.2	4	2	2,895.98	5,791.96		5,791.96
SSDPE2MD016T401	Intel® DC P3700 1.6TB U.2	4	10	2,277.16	22,771.60		22,771.60
MSX1012B-2BFS	SwitchX®-2 based 40GbE, 1U Open Ethernet Switch with MLNX-OS, 12 QSFP+ ports, 2 Power Supplies (AC), short depth, PPC460, P2C airflow, 12 ports licenses.	5	2	6,096.80	12,193.60		12,193.60
MCX456A-ECAT	Mellanox CX456A- ConnectX-4 QSFP28 2-port	5	3	1,656.51	4,969.53		4,969.53
MCX353A-FCBT	Mellanox CX353A- ConnectX-3 QSFP 1-port	5	6	757.23	4,543.38		4,543.38
MC2207128-002	Mellanox passive copper cable	5	12	82.31	987.72		987.72
FS-S6000-E10-S	FusionStor License per TB	1	32	228.63	7,316.16	50%	3,658.08
<b>Hardware &amp; Software Subtotal</b>							<b>92,022.60</b>
<b>Support &amp; Maintenance</b>							
TS-FS-S6000-E10-S	3Years Installation,Upgrade,Support Service 24x7 4 Hour Rspnse(per TB)	1	56	22.87	1,280.72	50%	640.36
OS4HR3	SuperServer 2028U-TNRT+ 3-year onsite 24x7x4 service	2	3	640.17	1,920.51		1,920.51
SUP-SX1012-3S-4H	Mellanox SUP-SX1012-3S-4H Technical Support and Warranty - Silver 3 Year with 4 Hours On-Site Support	5	2	1,463.24	2,926.48		2,926.48
<b>Support &amp; Maintenance Subtotal</b>							<b>5,487.35</b>
<b>SPC-1 Total System Price</b>							<b>97,509.95</b>
SPC-1 IOPS™							801,083.63
<b>SPC-1 Price-Performance™ (\$/SPC-1 KIOPS™)</b>							<b>121.73</b>
SPC-1 ASU Capacity (GB)							11,520
<b>SPC-1 ASU Price (\$/GB)</b>							<b>8.47</b>

**Third-Party Reseller:** FusionStack Co., Ltd (Source 1) provides a software solution for distributed storage systems. All hardware components are provided through the following third-party resellers:

- Source 2 Beijing fuyangweixin Technology Co., Ltd
- Source 3 Digital China Macao Service Co., Ltd
- Source 4 Shenzhen Baotongzhiyuan Technology Co., Ltd
- Source 5 Sainuo Xinzhi Software Technology Co., Ltd

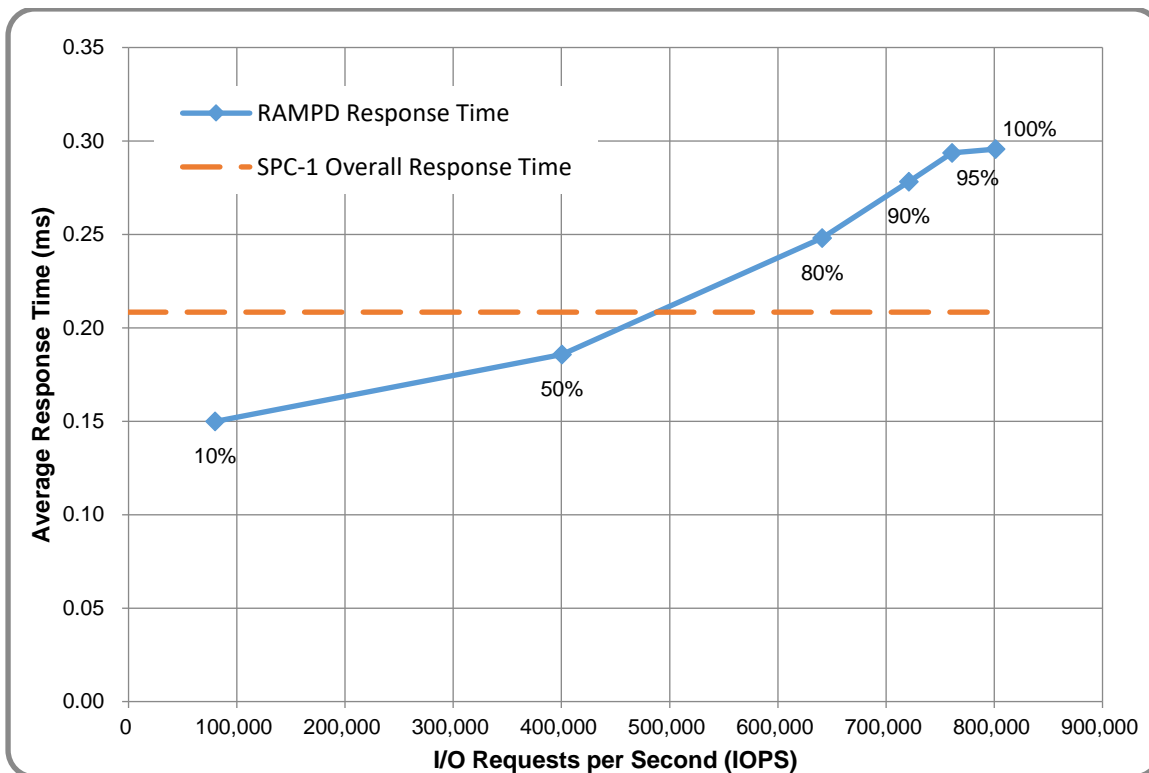
The above reflects the pricing quoted by these third-party resellers. See Appendix B of the Full Disclosure Report for a copy of the third-party resellers' quotations.

**Discount Details:** The discounts shown are based on enabled storage capacity and are generally available.

**Warranty:** The TSC includes components from major distributors or vendors. The distributors are responsible for first line support and the vendors are responsible for second line support. Those distributors and vendors have the capability to cover all customers in the pricing areas. FusionStack provides support for the software solution. The maintenance and support agreements from FusionStack and from the hardware distributors include a 3-year term with 24x7 coverage, and a 4-hour response time commitment.

**Availability Date:** Currently available.

### Response Time and Throughput Graph



Contact Information	
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Revision Information	
<b>SPC Benchmark 1™ Revision</b>	V3.4.0
<b>SPC-1 Workload Generator Revision</b>	V3.0.2 build g823a
<b>Publication Revision History</b>	<ul style="list-style-type: none"> <li>• First Edition: September 5, 2017</li> <li>• Second Edition: March 2, 2018                             <ul style="list-style-type: none"> <li>- Updated SPC-1 Price-Performance™ metric based on SPC-1 v3.6.0 definition.</li> <li>- Converted pricing to USD.</li> </ul> </li> </ul>