



## SPC BENCHMARK 1™

### EXECUTIVE SUMMARY

#### NETAPP, INC. NETAPP EF570 ALL-FLASH ARRAY

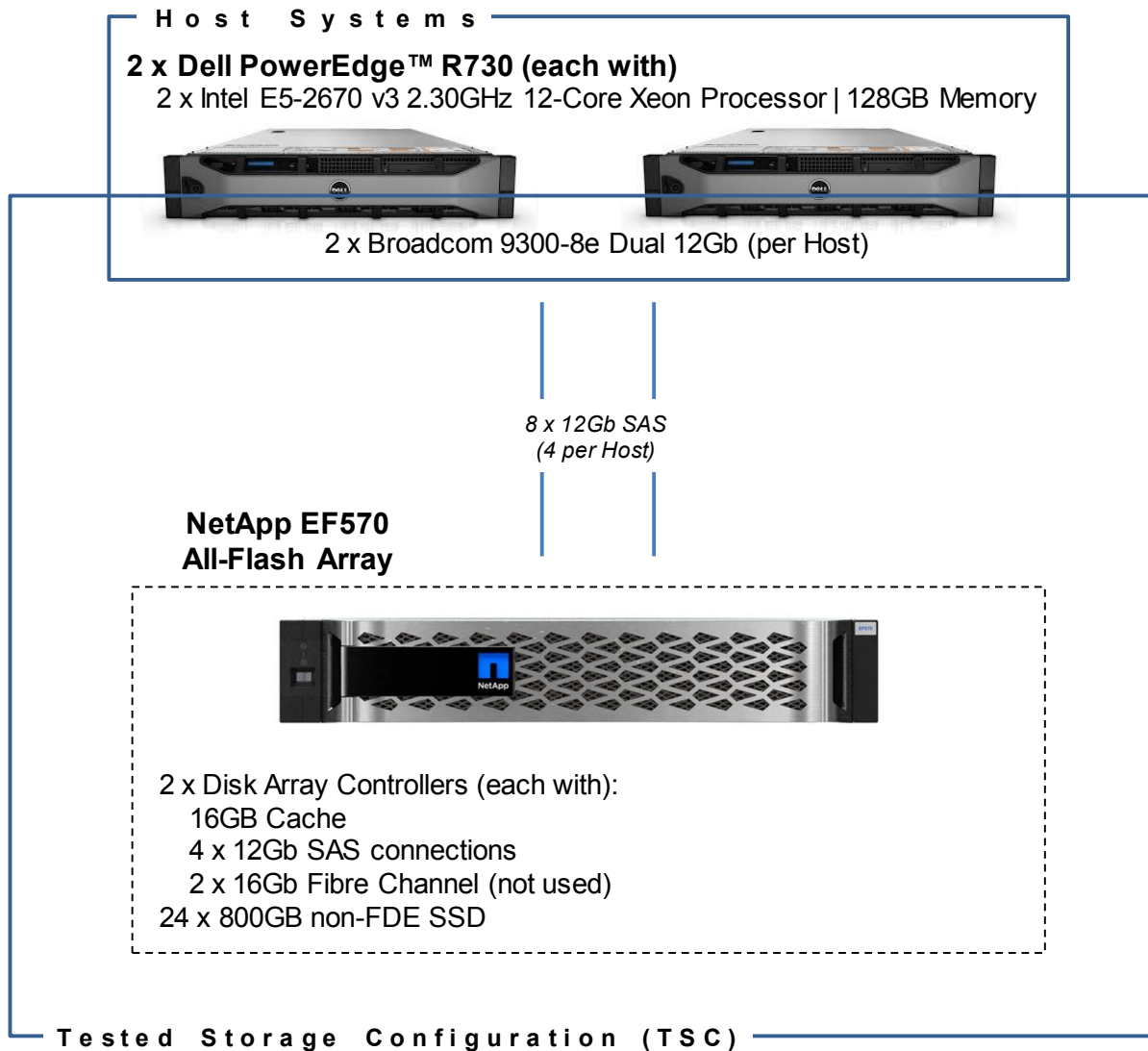
<b>SPC-1 IOPS™</b>	<b>500,022</b>
<b>SPC-1 Price-Performance™</b>	<b>\$ 0.13/SPC-1 IOPS™</b>
SPC-1 IOPS™ Response Time	0.437 ms
SPC-1 Overall Response Time	0.260 ms
SPC-1 ASU Capacity	9,006 GB
SPC-1 ASU Price	\$ 7.13/GB
SPC-1 Total System Price	\$ 64,212.58
Data Protection Level	Protected 2 (mirroring and full redundancy)
Physical Storage Capacity	19,203 GB
Pricing Currency / Target Country	USD / USA

### SPC-1 V3.5.0

**SUBMISSION IDENTIFIER: A31009**

**SUBMITTED FOR REVIEW: SEPTEMBER 19, 2017**

## Benchmark Configuration Diagram



## Tested Storage Product Description

NetApp EF570 all flash system is a 4th generation all-flash array designed specifically for performance-intensive workloads such as big data analytics, technical computing and video surveillance. With extremely high throughput, and low latencies, the EF570 is designed to increase application responsiveness and accelerate modern enterprise applications. The system supports 367TB of raw flash capacity in a modular 2U building block that scales to 1.8PB

The EF570 also supports multiple high-speed host interfaces including a new 100Gb NVMe-over-InfiniBand – one of the first enterprise-class arrays with support for NVMe. SANtricity System Manager gives customers the flexibility to manage their NetApp EF570 systems wherever they are at all times through an easy-to-use, on-box, web-based interface. SANtricity Cloud Connector enables NetApp Data Fabric, or Hybrid Cloud capabilities, by providing cost-effective backup and recovery to the cloud.

NetApp E-Series arrays have a rich, 20+ year legacy of providing industry leading price/performance, value and reliability, with over 1 million systems installed.

For more details, visit:

<http://www.netapp.com/us/products/storage-systems/all-flash-array/ef-series.aspx>

## Priced Storage Configuration Components

<b>4 x Broadcom 9300-8e Dual 12Gb</b>
<b>1 x NetApp EF570 All-Flash Array (including)</b>
<b>2 x Disk Array Controllers (each with):</b>
<b>16GB Cache</b>
<b>4 x 12Gb SAS connections</b>
<b>2 x 16Gb Fibre Channel (not used)</b>
<b>24 x 800GB non-FDE SSD</b>

## Storage Configuration Pricing

	Description	Source	Qty	Unit Price	Ext. Price	Disc.	Disc. Price
<b>Hardware &amp; Software</b>							
E-X5722A-0E-C	Enclosure, 2U-24, DE224C, Empty, 2PSU, 913W, 0E,-C	1	1	2,400.00	2,400.00	55%	1,080.00
EF570A-16GB-FC-0E-C	EF570A, 16GB Cntrlr, No HIC, 16Gb FC, 2-pt,-C	1	2	20,780.00	41,560.00	55%	18,702.00
X-56027-00-0E-C	HIC, E2800, 12Gb SAS, 4-ports,-C	1	2	1,200.00	2,400.00	55%	1,080.00
E-X4086A-0E-C	SSD, 800GB, 12Gb, Non-FDE, DE224C,-0E,-C	1	24	2,165.00	51,960.00	55%	23,382.00
OS-SANTRICITY1-CAP3-0E-C	OS Enable, Per-0.1TB, SANTRCTY, Ultra-Stor,0E,-C	1	192	150.00	28,800.00	55%	12,960.00
CDW 3818102	LSI SAS 9300-8e / SAS 12Gb/s / PCIe 3	2	4	449.99	1,799.96		1,799.96
CDW 3877041	Supermicro SAS external cable - 6.6ft	2	8	69.99	559.92		559.92
CDW Tax & Shipping	CDW Tax and Shipping	2	1	202.17	202.17		202.17
<b>Hardware &amp; Software Subtotal</b>							<b>59,766.05</b>
<b>Support &amp; Maintenance</b>							
CS-A2-4R-VA	Support, 3-yr 24/7, 4 hour on-site	1	1	9,881.16	9,881.16	55%	4,446.53
<b>Support &amp; Maintenance Subtotal</b>							<b>4,446.53</b>
<b>SPC-1 Total System Price</b>							<b>64,212.58</b>
SPC-1 IOPS™							500,022
<b>SPC-1 Price-Performance™ (\$/SPC-1 IOPS™)</b>							<b>0.13</b>
SPC-1 ASU Capacity (GB)							9,006
<b>SPC-1 ASU Price (\$/GB)</b>							<b>7.13</b>

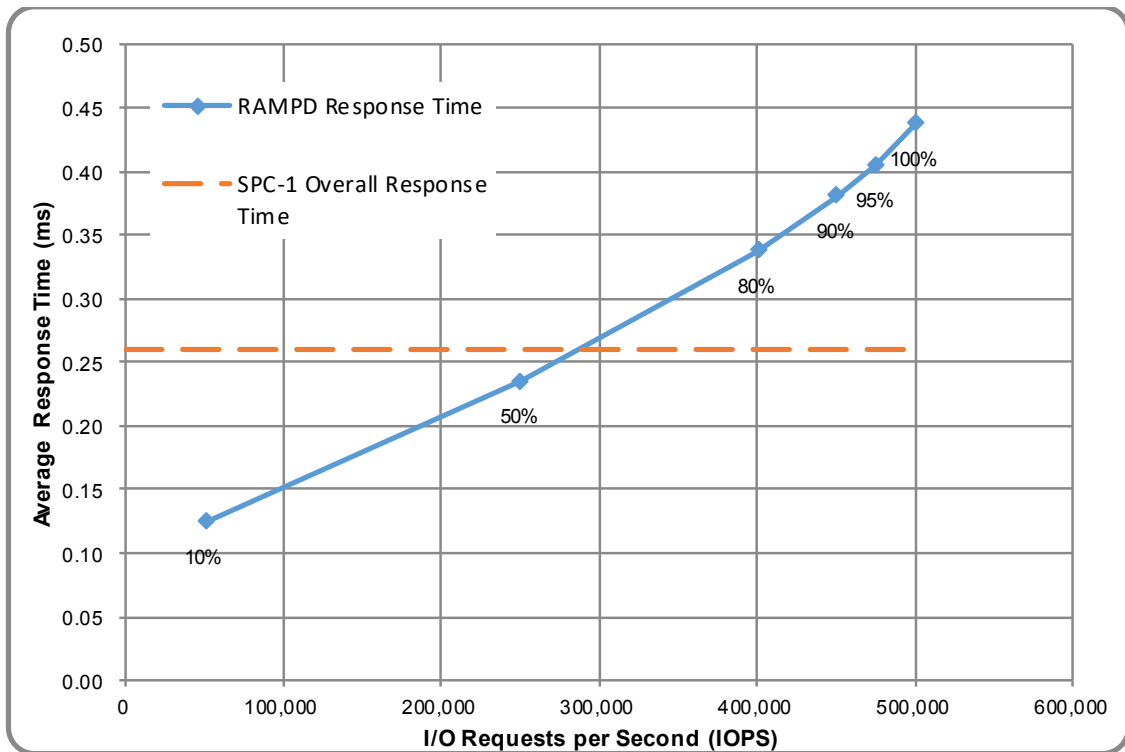
**Third-Party Reseller:** HBA's and cables are provided by CDW (Source 2). The remainder of the components, the support and the maintenance are provided by NetApp (Source 1).

**Discount Details:** The 55% discount used in the pricing above represents the low-end of a "typical", generally available discount.

**Warranty:** The 3-year maintenance and support included in the above pricing meets or exceeds a 24x7 coverage with a 4-hour response time.

**Availability Date:** The Priced Storage Configuration will be available on October 9, 2017.

### Response Time and Throughput Graph



Contact Information	
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Revision Information	
<b>SPC Benchmark 1™ Revision</b>	V3.5.0
<b>SPC-1 Workload Generator Revision</b>	V3.0.2 build g823a
<b>Publication Revision History</b>	Initial Publication