



**SPC BENCHMARK 1™
EXECUTIVE SUMMARY**

**HUAWEI TECHNOLOGIES CO., LTD.
HUAWEI OCEANSTOR™ S2600**

SPC-1 V1.12

Submitted for Review: March 18, 2010

Submission Identifier: A00090

Revised: December 13, 2012

EXECUTIVE SUMMARY

Test Sponsor and Contact Information

Test Sponsor and Contact Information	
Test Sponsor Primary Contact	Huawei Technologies Co., Ltd. – http://www.huawei.com/en/ Eric He – eric.heji@huawei.com No. 1899, Xiyuan Road Chengdu, 611731 P.R. China Phone: 0086 28 65281999 FAX: 0086 28 64686419
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Auditor	Storage Performance Council – http://www.storageperformance.org Walter E. Baker – AuditService@StoragePerformance.org 643 Bair Island Road, Suite 103 Redwood City, CA 94063 Phone: (650) 556-9384 FAX: (650) 556-9385

Revision Information and Key Dates

Revision Information and Key Dates	
SPC-1 Specification revision number	V1.12
SPC-1 Workload Generator revision number	V2.1.0
Date Results were first used publicly	March 18, 2010
Date the FDR was submitted to the SPC	March 18, 2010
Date revised FDR was submitted to the SPC Updated company name, logo and product name to reflect the complete acquisition of Huawei Symantec by Huawei Technologies Co., Ltd.	December 13, 2012
Date the priced storage configuration is available for shipment to customers	currently available
Date the TSC completed audit certification	March 17, 2010

Tested Storage Product (TSP) Description

Huawei OceanStor™ S2600 (*hereinafter referred to as the S2600*) series storage products are the third-generation products for small and medium-sized enterprises. Owing to evolutionary architectural design, the S2600 features easy management and energy-saving, and provides economical storage solutions and perfect data protection.

Summary of Results

SPC-1 Results	
Tested Storage Product (TSP) Name: Huawei OceanStor™ S2600	
Metric	Reported Result
SPC-1 IOPS™	16,995.54
SPC-1 Price-Performance	CNY 18.25/SPC-1 IOPS™
Total ASU Capacity	2,920.000 GB
Data Protection Level	Protected (<i>Mirroring</i>)
Total TSP Price (including three-year maintenance)	CNY 310,220

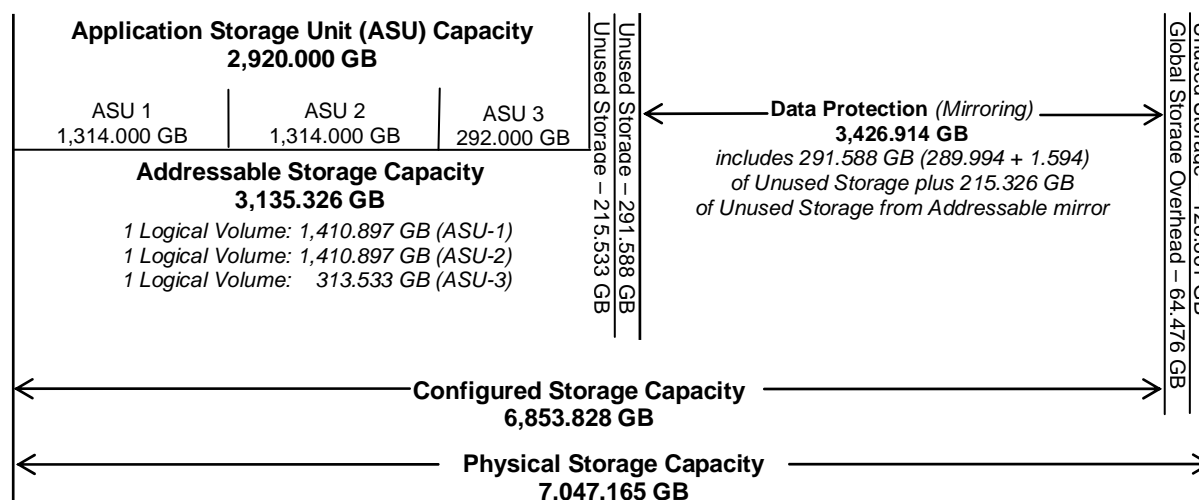
SPC-1 IOPS™ represents the maximum I/O Request Throughput at the 100% load point.

Total ASU (Application Storage Unit) Capacity represents the total storage capacity read and written in the course of executing the SPC-1 benchmark.

A Data Protection Level of Protected using *Mirroring* configures two or more identical copies of user data.

Storage Capacities and Relationships

The following diagram and table document the various storage capacities, used in this benchmark, and their relationships, as well as the storage utilization values required to be reported.



SPC-1 Storage Capacity Utilization	
Application Utilization	41.44%
Protected Application Utilization	82.87%
Unused Storage Ratio	16.21%

Application Utilization: Total ASU Capacity (*GB*) divided by Physical Storage Capacity (*GB*)

Protected Application Utilization: (Total ASU Capacity (*GB*) plus total Data Protection Capacity (*GB*) minus unused Data Protection Capacity (*GB*) divided by Physical Storage Capacity (*GB*)

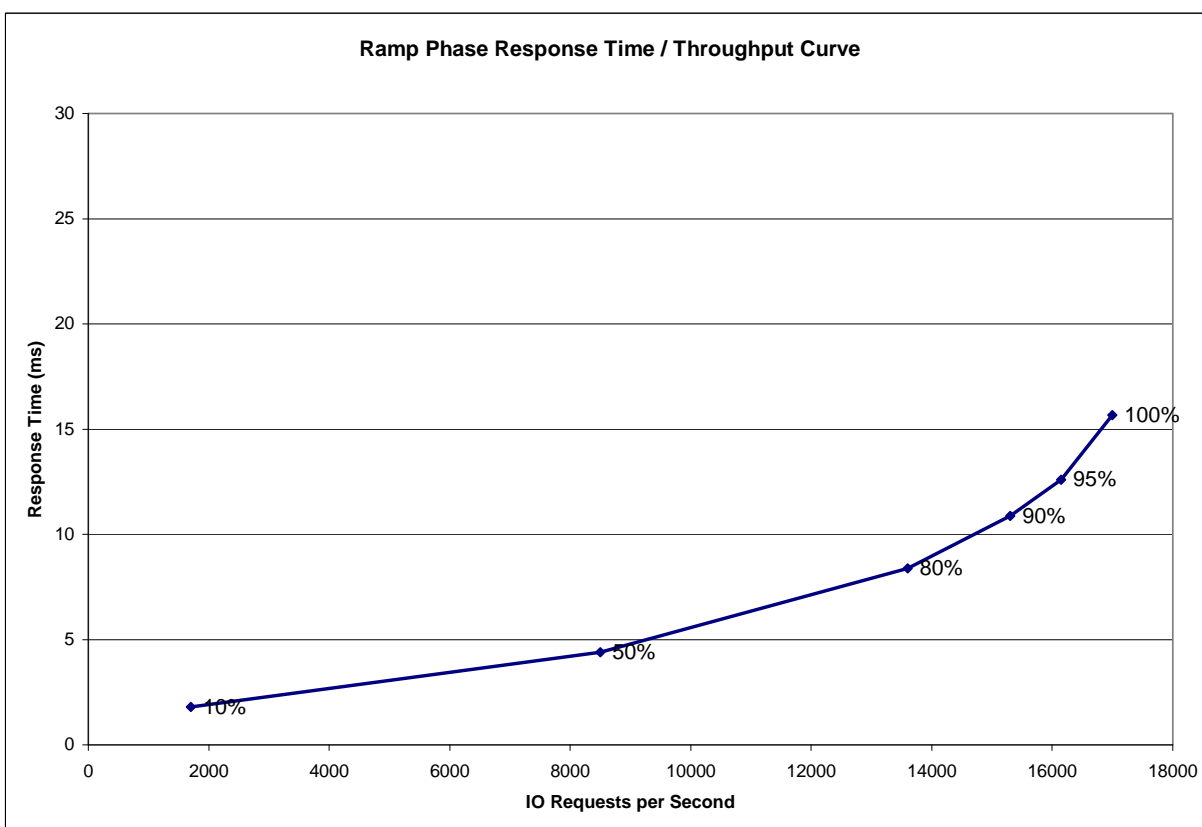
Unused Storage Ratio: Total Unused Capacity (*GB*) divided by Physical Storage Capacity (*GB*) and may not exceed 45%.

Detailed information for the various storage capacities and utilizations is available on pages 20-21 in the Full Disclosure Report.

Response Time – Throughput Curve

The Response Time-Throughput Curve illustrates the Average Response Time (milliseconds) and I/O Request Throughput at 100%, 95%, 90%, 80%, 50%, and 10% of the workload level used to generate the SPC-1 IOPS™ metric.

The Average Response Time measured at the any of the above load points cannot exceed 30 milliseconds or the benchmark measurement is invalid.



Response Time – Throughput Data

	10% Load	50% Load	80% Load	90% Load	95% Load	100% Load
I/O Request Throughput	1,703.44	8,498.69	13,599.56	15,300.22	16,147.30	16,995.54
Average Response Time (ms):						
All ASUs	1.81	4.39	8.39	10.88	12.59	15.66
ASU-1	2.36	5.56	9.89	12.08	13.57	16.09
ASU-2	1.74	4.31	9.18	11.78	13.44	16.25
ASU-3	0.66	1.95	4.85	7.95	10.13	14.50
Reads	3.62	8.24	14.05	15.78	16.85	18.18
Writes	0.63	1.88	4.71	7.70	9.82	14.02

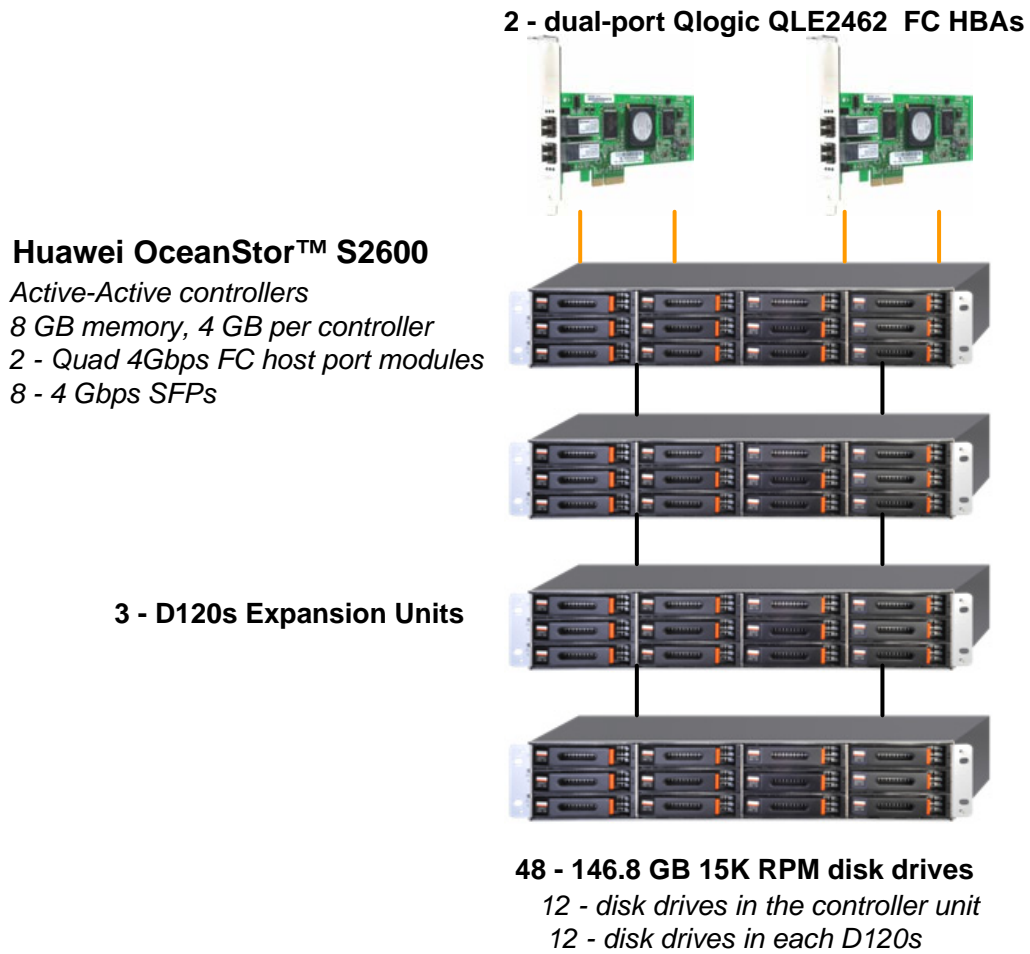
Priced Storage Configuration Pricing

Product Name	Quantity	Unit list Price in RMB	Total list Price in RMB	Discount	Unit price after discount in RMB	Total price after discount in RMB
OceanStor S2600 Base Unit * Active-Active controllers ** 8GB of memory, 4GB per controller ** 2 - quad host port modules, 1 module per controller ** 8 - 4Gb SFPs	1	343,800.00	343,800.00	80.00%	68,760.00	68,760.00
D120s Expansion Unit * 2 - 1-Meter Mini SAS Cable	3	121,800.00	365,400.00	80.00%	24,360.00	73,080.00
146 GB, 15K RPM SAS Disk Drive	48	15,000.00	720,000.00	80.00%	3,000.00	144,000.00
Dual-port Qlogic QLE2462 Fiber Channel HBA	2	11,060.00	22,120.00	0.00%	11,060.00	22,120.00
5-Meter Fiber Optic Cable	4	90.00	360.00	0.00%	90.00	360.00
Maintenance/Support: 3 years, 24*7, with 4-hour acknowledgement and 4-hour onsite	1	1,900.00	1,900.00	0.00%	1,900.00	1,900.00
Total			1,453,580.00			310,220.00

Differences between the Tested Storage Configuration (TSC) and Priced Storage Configuration

There were no differences between the TSC and Priced Storage Configuration.

Priced Storage Configuration Diagram



Priced Storage Configuration Components

Priced Storage Configuration:
2 – dual-port Qlogic 2462 FC HBAs
Huawei OceanStor™ S2600 Active-Active controllers with: 8 GB cache total, 4 GB per controller 2 – Quad 4 Gbps FC port host modules (<i>1 per controller</i>) 8 – 4 Gbps Fibre Channel host ports (<i>4 per controller</i>) 2 – 4*3 Gbps Mini SAS expander ports (<i>1 per controller</i>) 8 – 4 Gbps SFPs
3 – D120s Expansion Units
48 – 146.8 GB 15K RPM SAS disk drives