



**SPC BENCHMARK 2™  
EXECUTIVE SUMMARY**

**SUN MICROSYSTEMS, INC.  
SUN STORAGE TEK® 6140 ARRAY (RAID-5)**

**SPC-2™ V1.2**

**Submitted for Review: August 29, 2006  
Submission Identifier: B00010**

**EXECUTIVE SUMMARY****Test Sponsor and Contact Information**

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**Revision Information and Key Dates**

<b>Revision Information and Key Dates</b>	
<b>SPC-2 Specification revision number</b>	V1.2
<b>SPC-2 Workload Generator revision number</b>	spc2rc9f
<b>Date Results were first used publicly</b>	August 29, 2006
<b>Date FDR was submitted to the SPC</b>	August 29, 2006
<b>Date the TSC will be available for shipment to customers</b>	August 10, 2006
<b>Date the TSC completed audit certification</b>	August 28, 2006

## SPC-2 Reported Data

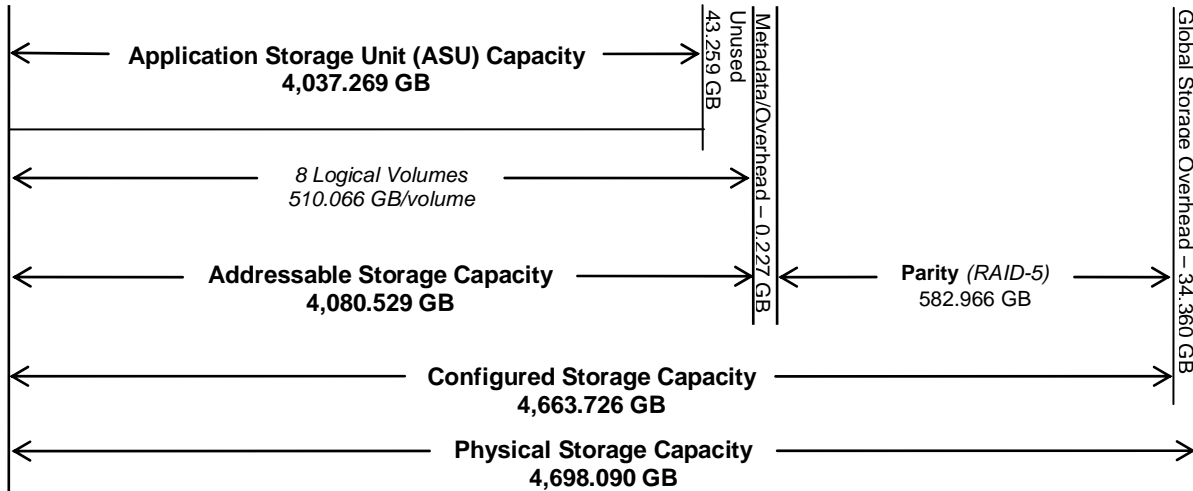
SPC-2 Reported Data consists of three groups of information:

- The following SPC-2 Primary Metrics, which characterize the overall benchmark result:
  - SPC-2 MBPS™
  - SPC-2 Price Performance
  - Application Storage Unit (ASU) Capacity
- Supplemental data to the SPC-2 Primary Metrics.
  - Total Price
  - Data Protection Level
- Reported Data for each SPC Test: Large File Processing (LFP), Large Database Query (LDQ), and Video on Demand Delivery (VOD) Test.

Sun StorageTek® 6140 System				
SPC-2 MBPS™	SPC-2 Price-Performance	ASU Capacity (GB)	Total Price	Data Protection Level
743.76	\$114.85	4,037.269	\$85,424	RAID-5
<i>The above SPC-2 MBPS™ value represents the aggregate data rate of all three SPC-2 workloads: Large File Processing (LFP), Large Database Query (LDQ), and Video On Demand (VOD)</i>				
SPC-2 Large File Processing (LFP) Reported Data				
	Data Rate (MB/second)	Number of Streams	Data Rate per Stream	Price-Performance
LFP Composite	568.53			\$150.25
Write Only:				
1024 KiB Transfer	332.00	32	10.37	
256 KiB Transfer	310.55	36	8.63	
Read-Write:				
1024 KiB Transfer	485.92	38	12.79	
256 KiB Transfer	459.79	36	12.77	
Read Only:				
1024 KiB Transfer	954.12	32	29.82	
256 KiB Transfer	868.79	36	24.13	
<i>The above SPC-2 Data Rate value for LFP Composite represents the aggregate performance of all three LFP Test Phases: (Write Only, Read-Write, and Read Only).</i>				
SPC-2 Large Database Query (LDQ) Reported Data				
	Data Rate (MB/second)	Number of Streams	Data Rate per Stream	Price-Performance
LDQ Composite	797.67			\$107.09
1024 KiB Transfer Size				
4 I/Os Outstanding	944.04	34	27.77	
1 I/O Outstanding	943.44	34	27.75	
64 KiB Transfer Size				
4 I/Os Outstanding	561.71	42	13.37	
1 I/O Outstanding	741.49	40	18.54	
<i>The above SPC-2 Data Rate value for LDQ Composite represents the aggregate performance of the two LDQ Test Phases: (1024 KiB and 64 KiB Transfer Sizes).</i>				
SPC-2 Video On Demand (VOD) Reported Data				
	Data Rate (MB/second)	Number of Streams	Data Rate per Stream	Price-Performance
	865.08	1,100	0.79	\$98.75

### Storage Capacities and Relationships

The following diagram documents the various storage capacities, used in this benchmark, and their relationships.



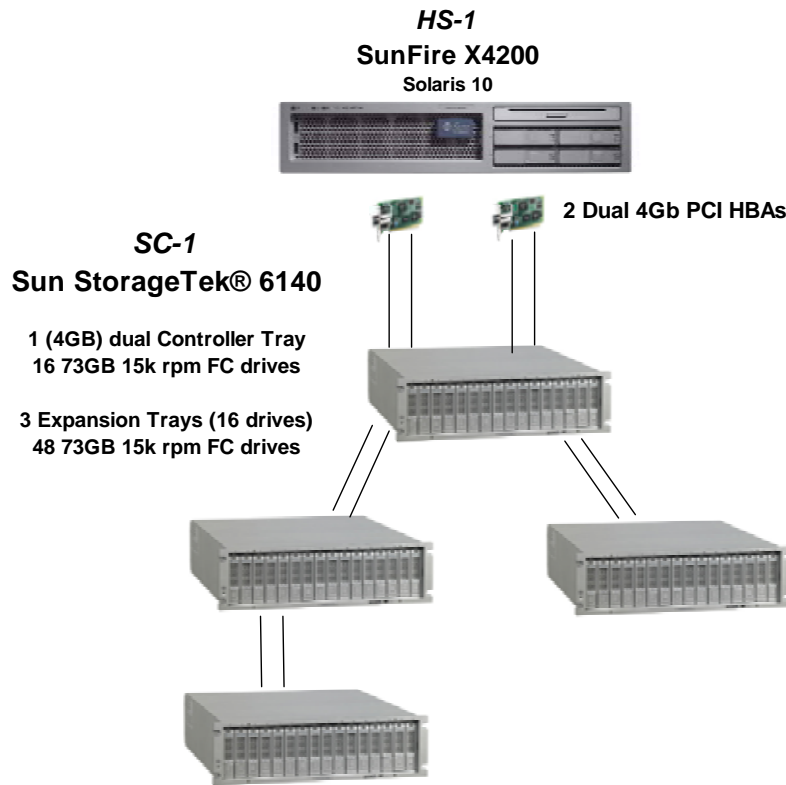
**Tested Storage Configuration Pricing (Priced Storage Configuration)**

Part Number	Description	Quantity	US List	Total	discount	Ave. Price
XTA6140R11A2B1168	Dual Controller with 1x1x16x73G15K	1	\$52,495	\$52,495	39%	\$32,022
	- 2 Controllers w/ 2GB cache each					
	- 16 73GB 15k rpm drives					
	- All required cables included					
XTACSM2R01A0B1168	FC Expansion tray 0x1x16x73G15K	3	\$27,495	\$82,485	39%	\$50,316
	- 16 73GB 15k rpm drives					
	- All required cables included					
SG-XPCI2FC-QF4	4Gb PCI-X Dual FC Host Based Adapter	2	\$2,530	\$5,060	39%	\$3,087
	3-year Gold Service Maintenance	1	\$0	\$0		\$0
	- 24 hour per day/7 days per week					
	- 4 hr response time					
	- 4 hour resolution					
<b>Total</b>			<b>\$82,520</b>	<b>\$140,040</b>		<b>\$85,424</b>

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

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

### Benchmark Configuration/Tested Storage Configuration Diagram



### Host System(s) and Tested Storage Configuration Components

Host System:	Tested Storage Configuration (TSC):
<b>UID=HS-1</b> <b>SunFire X4200</b>	2 – 4 Gb dual port FC PCI-X HBAs
2 – Dual Core AMD Opteron™ Processor 275 (2.2 MHz), 512 KB L1 cache per core, 1 MB L2 cache per core	<b>UID=SC-1:</b> <b>Sun StorageTek® 6140 Array</b>
8 GB main memory	1 Dual Controller 2 GB cache per controller (4 GB total)
Solaris 10 FCS	4 host connections ( <i>front end</i> )
PCI-X	2 drive connections ( <i>backend</i> )
WG	3 – FC Expansion Trays
	64 – 73 GB 15K RPM Seagate disk drives