



**SPC BENCHMARK 2™  
EXECUTIVE SUMMARY**

**SUN MICROSYSTEMS, INC.  
SUN STORAGE J4200 ARRAY**

**SPC-2™ V1.2.1**

**Submitted for Review: July 10, 2008  
Submission Identifier: B00033**

## **EXECUTIVE SUMMARY**

### **Test Sponsor and Contact Information**

<b>Test Sponsor and Contact Information</b>	
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### **Revision Information and Key Dates**

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<b>SPC-2 Specification revision number</b>	V1.2.1
<b>SPC-2 Workload Generator revision number</b>	V1.0
<b>Date Results were first used publicly</b>	July 10, 2008
<b>Date FDR was submitted to the SPC</b>	July 10, 2008
<b>Date the TSC will be available for shipment to customers</b>	July 8, 2008
<b>Date the TSC completed audit certification</b>	July 10, 2008

### **Tested Storage Product (TSP) Description**

The Sun Storage J4200 Array is an easy and inexpensive way to extend your server-storage capabilities. This Array offers high-quality low-cost SAS/SATA JBOD storage that grows with your business. Plus, it comes with the groundbreaking ZFS file system. Included at no extra charge, ZFS automates common administrative tasks, protects data from corruption, and provides unlimited scalability.

## 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.

SPC-2 Reported Data				
Sun Storage J4200				
SPC-2 MBPS™	SPC-2 Price-Performance	ASU Capacity (GB)	Total Price	Data Protection Level
548.80	\$22.92	11,995.295	\$12,580	Unprotected
<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	690.55			\$18.22
Write Only:				
1024 KiB Transfer	758.79	20	37.94	
256 KiB Transfer	817.86	20	40.89	
Read-Write:				
1024 KiB Transfer	652.49	20	32.62	
256 KiB Transfer	565.36	20	28.27	
Read Only:				
1024 KiB Transfer	605.05	20	30.25	
256 KiB Transfer	743.77	20	37.19	
<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	641.30			\$19.62
1024 KiB Transfer Size				
4 I/Os Outstanding	701.31	20	35.07	
1 I/O Outstanding	601.86	20	30.09	
64 KiB Transfer Size				
4 I/Os Outstanding	652.92	20	32.65	
1 I/O Outstanding	609.10	20	30.46	
<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
	314.56	400	0.79	\$39.99

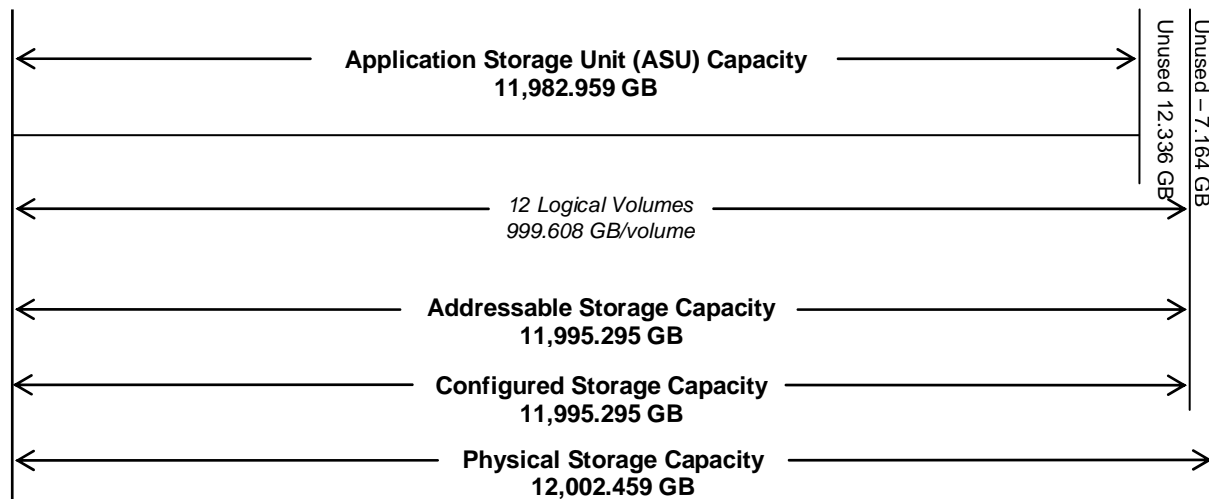
**SPC-2 MBPS™** represents the aggregate data rate, in megabytes per second, of all three SPC-2 workloads: Large File Processing (LFP), Large Database Query (LDQ), and Video on Demand (VOD).

**ASU (Application Storage Unit) Capacity** represents the total storage capacity read and written in the course of executing the SPC-2 benchmark.

A **Data Protection Level of Unprotected** provides no data protection.

**Storage Capacities and Relationships**

The following diagram (*not to scale*) documents the various storage capacities, used in this benchmark, and their relationships.



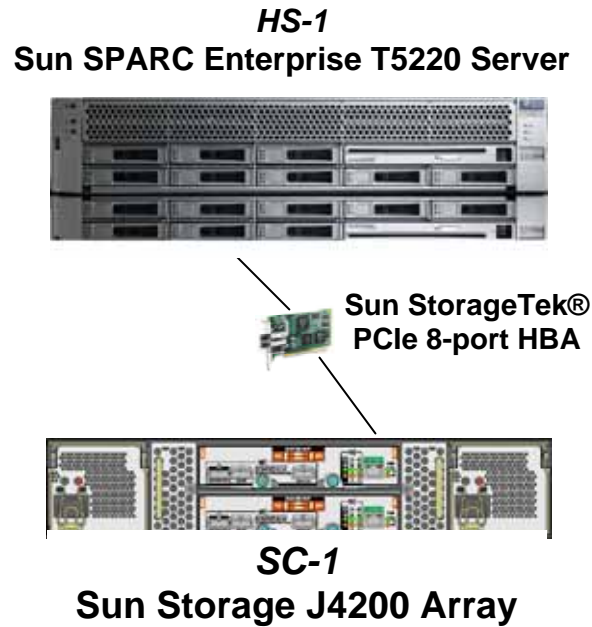
### Tested Storage Configuration Pricing (*Priced Storage Configuration*)

Part Number	Description	Quantity	US List	Total	discount	Ave. Price
XTA4200R00A10DISK	Sun Storage J4200 Rack Ready JBOD Chassis, No drives, dual AC power supplies, dual fan module, rail kit, single SAS I/O module, One .5M SAS cable, RoHS-5.	1	\$2,800.00	\$2,800	22%	\$2,184
XTA-4200-IOM	One three-port SAS I/O module for Sun Storage J4200, One .5M SAS cable.	1	\$500	\$500	22%	\$390
XTA-ST1NJ-1T7K	RoHS-6. Internal 1TB 7.2K SATA HDD, 3.5" x 1" drive with bracket.	12	\$949	\$11,388	22%	\$8,883
XTA-4200-2URK-19U	Sun Storage J4200 2U universal rack rail kit; RoHS-5	1	\$125	\$125	22%	\$98
SG-XPCIE8SAS-E-Z	Sun StorageTek (TM) PCIe SAS Host Bus Adapter, 8 port, RoHS 6 compliant	1	\$550	\$550	22%	\$429
IWU-STJ4200-24-3G	Controller unit upgrade 3 year Gold Service Maintenance	1	\$1,065.64	\$1,066	44%	\$597
	- 7/24 coverage					
	- 4 hr response time					
	- 4 hour resolution					
<b>Total</b>				<b>\$16,429</b>		<b>\$12,580</b>

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

There were no differences between the 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> Sun SPARC Enterprise T5220 Server	1 – Sun StorageTek PCI Express SAS 8-Channel HBA
1 – Ultra SPARC T2 8-core processor 1.2 GHz 8-core, 4 MB L2 cache	<b>UID=SC-1:</b> <b>Sun Storage J4200</b>
3968 MB main memory	3 – 3 Gb/s “x4 wide” SAS ports available 1 port used
Solaris 10 Update 5	12 – 1 TB, 7200 RPM Seagate SATA II disk drives
PCIe	
WG	