



**SPC BENCHMARK 1™
EXECUTIVE SUMMARY**

**SUN MICROSYSTEMS, INC.
SUN STOREEDGE™ 9910**

SPC-1 V1.4

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Test Sponsor and Contact Information	
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Revision Information and Key Dates	
SPC-1 Specification revision number	V1.4
SPC-1 Workload Generator revision number	V1.0
Date Results were first used publicly	May 1, 2002
Date FDR was submitted to the SPC	May 20, 2002
Date the TSC is/was available for shipment to customers	August 21, 2001
Date the TSC completed audit certification	May 1, 2002
SPC-1 Results	
TSC Configuration Name: Sun StorEdge™ 9910	
Metric	Reported Result
SPC-1 IOPS™	8,404.22
SPC-1 Price-Performance	\$74.29/SPC-1 IOPS™
Total ASU Capacity	343.51 GB
Data Protection Level	Mirroring
SPC-1 LRT™	2.07 ms
Price	\$624,377.44

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.

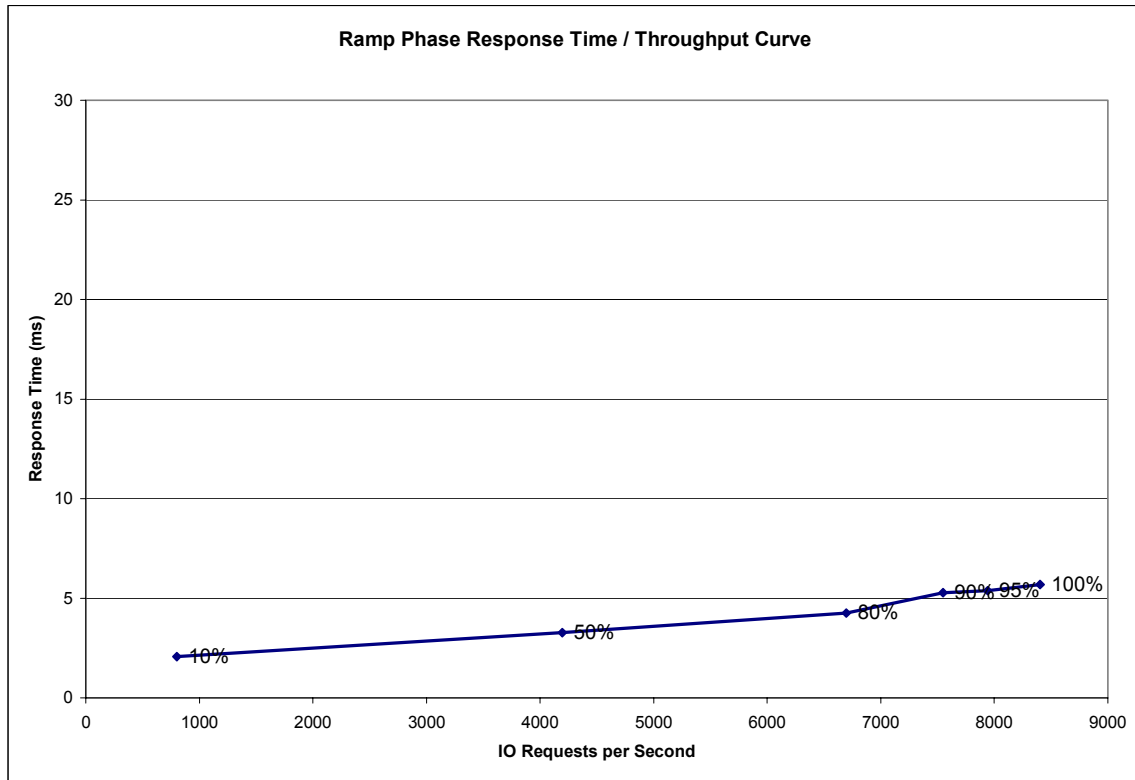
A **Data Protection Level** of Mirroring requires two or more identical copies of the Total ASU Capacity. As a result, Mirroring will utilize at least twice the storage designated as Total ASU Capacity.

The **SPC-1 LRT™** metric is the Average Response Time measured at the 10% load point, as illustrated on the next page. SPC-1 LRT™ represents the Average Response Time measured on a lightly loaded Tested Storage Configuration (TSC).

Response Time – Throughput

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 100% load point cannot exceed 30 milliseconds or the benchmark measurement is invalid.



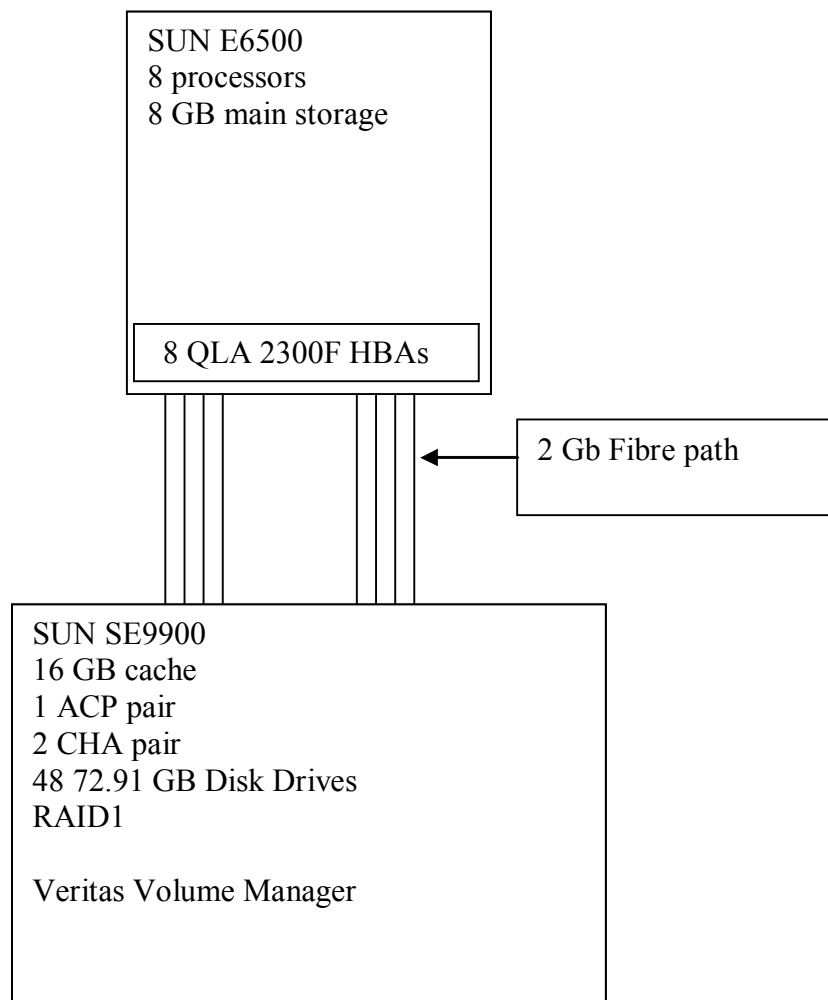
Response Time – Throughput Data

	10% Load	50% Load	80% Load	90% Load	95% Load	100% Load
I/O Request Throughput	801.07	4197.16	6698.13	7549.15	7941.92	8404.22
Average Response Time (ms):						
All ASUs	2.07	3.28	4.26	5.27	5.38	5.69
ASU-1	2.13	3.06	4.21	4.27	4.41	4.71
ASU-2	2.62	3.78	4.88	5.42	5.47	6.11
ASU-3	1.71	3.53	4.11	7.34	7.38	7.56
Reads	2.94	4.22	6.22	6.49	6.72	7.25
Writes	1.50	2.67	2.99	4.49	4.50	4.67

Tested Storage Configuration Pricing

P/N	Description	Qty	Ext US List
SE9910-STRGBASE	SUN SE9910 PRODUCT	1	\$595,541.00
T8-041-100028-01	HDS Logo for Sun SE9900 Series	1	
T8-DKC-F415I-1UC	Pwr Cable Kit-Single Phase USA	1	
T8-DKC415I-5	SE9910 Disk Controller Frame	1	
T8-DKC-F410I-1024	Cache Memory Module (1024MB)	16	
T8-IP0806-1	SE9900 Hi-Trk Ethernet Cnct Kt	1	
T8-IP0807-4	SE9900 Hi-Track PCMCIA Mdm Kit	1	
T8-IP0809-100	SE9900 Ethernet Thinnet Cable	1	
T8-IP1000-2CD	SE9900 PCAnywhere CD ROM	1	
T8-DKC-F410I-SNMP	SE9900 SNMP Support Kit	1	
T8-041-100034-01	SE9900 Microcode Kit	1	
XT8-JZ-050SL025PC	Plenum SC to LC Cable, 25M	8	
T8-DKU-F405I-72J4	4 HDD Canisters - 73GB	11	
T8-DKU-F405I-72J1	1 HDD Canister - 73GB	4	
T8-DKC-F410I-S256	Shared Memory Module (256MB)	4	
T8-DKC-F410I-8HSE	2Gb/sec fibre channel adapter	2	
XT8-044-100040-01	SE9900 Resource Mgr Base Lic	1	
XT8-044-100209-01A	SE9900 Resource Mgr 1TB Lic.	1	
XT8-044-100210-01B	SE9900 Resource Mgr 2-3TB Lic	2	
	3-yr Sun extended SW Warrenty	1	
	3-yr Sun HW Warrenty	1	
X6767A	Sun Storagege 2G FC PCI Single-Channel Network Adapter	8	\$14,000.00
VVMGS-999-E999	VxVM 3.1.1 Enterprise Lic	1	\$12,999.00
VVMGS-E999	VxVM 3.1.1 3 year Maintenance Agreement	1	\$1,837.44
	Total		\$624,377.44

Benchmark Configuration



Host System:	Storage System:
Sun E6500	Sun StorEdge™ 9910
UID=E6500	UID=SE9910
8 UltraSPARC™ II 464 MHz CPUs	16 GB Cache
32/64 KB (instruction/data) L1 Cache	1 ACP pair
8 MB L2 Ecache	2 CHA pair
8 GB RAM	11 – 4 HDD Canisters, 4 – 1 HDD Canister
Solaris8	48 x 72.91 GB disk drives
8 FC PCI Single-Channel Network Adapters	VERITAS Volume Manager