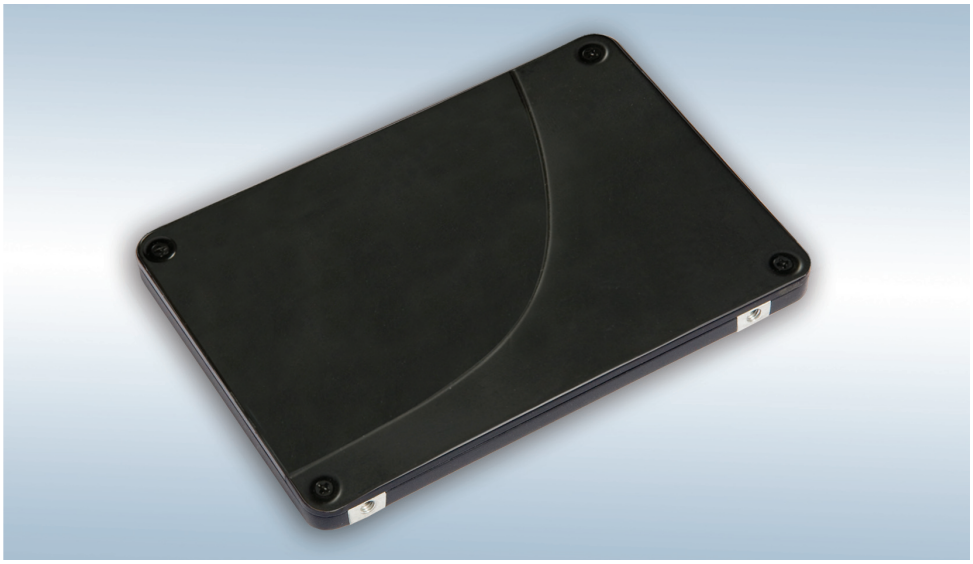
Sun™ Enterprise SSD/Flash Drives

Instantly and efficiently accelerate I/O intensive application performance



Highlights

- Instantly boost application performance with up to 65x faster response times than traditional hard disk drives (HDDs)
- A quick way to boost performance without adding new servers or storage, and without requiring any extra datacenter space
- 70 times more cost-efficient than traditional HDDs in terms of $/IOPS
- Save up to 38% on power compared to HDDs and also reduce cooling costs
- Automatic data optimization with Solaris ZFS™ for quick and easy performance gains
- Improve reliability and reduce risk with no moving parts and enterprise-class wear leveling technology
- Supported on Solaris™ and OpenSolaris™ Operating Systems as well as Linux and Windows

With fast read and write I/O performance and incredibly low power requirements, solid-state drives (SSDs) based on flash memory technology are poised to disrupt the IT industry. Sun has fully integrated Enterprise SSD technology into its new Sun Blade™, Sun x64, and Sun CoolThreads™ servers. Sun's integrated systems and software make it easy for you to instantly and efficiently take advantage of SSD technology.

A new approach to application performance

Keeping high volumes of I/O flowing to and from systems is key to application performance. For some applications, the best way to improve performance has been to saturate the server with DRAM so that much of the application's data can reside in physical memory for low latency access. For other applications, a large pool of 15K RPM drives has often been used to increase I/O throughput for better application performance. Both of these approaches are costly and, as applications continue to grow, it is becoming impractical to continue adding more high speed disk drives that consume more and more datacenter space, power and cooling resources.

Recent advances in production of flash technology have made SSDs much more cost-effective, creating a new opportunity for improving application performance through a new storage hierarchy. Flash technology completes operations in microseconds, placing it between hard disk drives (milliseconds) and random access memory (nanoseconds) for access time. SSDs are significantly cheaper and denser than DRAM and also significantly faster than disk. Because Flash technology contains no moving parts, it avoids the seek times and rotational latencies associated with traditional hard disk drives and also delivers increased reliability.

Sun SSD technology

Sun is the first major systems vendor to integrate flash technology across its entire systems portfolio. The technology has been designed not just for Tier 0 storage or for boot devices, but also for overall application acceleration. SSDs can be used along with hard disk drives to enhance performance at lower cost per IOPS, or as a means to reduce DRAM requirements by providing a high performance cache that is much more cost-effective.

	DRAM	SSD	HDD
Budgetary Costs	$100/GB	$37/GB	$5/GB
Reliability MTBF	N/A	2M	1.5M
Power Consumption/ Unit	10.5 W	2.5 W	12 W
Random I/O Performance	1,000,000 IOPS	Up to 35,000 IOPS (read)	350 IOPS
Reaction Time (latency)	90 nanoseconds	90 microseconds	90 milliseconds

Learn More

Visit sun.com/flash to learn more about which Sun server platforms support SSDs and how you can improve your company's return on assets (ROA) using Sun SSD/Flash drives.

Get started now

You can simply and easily upgrade your environment to boost application performance while conserving datacenter space, power and cooling resources by trading up to a new Sun server with integrated SSDs.

Sun and its partners also make it easy for you to act quickly and get the most out of your investments through a range of storage assessment, implementation, and management services.

Visit sun.com/tradeins/offerings/entry.jsp for details about how you can get up to 40% off when you trade-in your existing Sun, HP, IBM, or Dell server for a new Sun system that utilizes SSD drives.

Sun Enterprise SSD/Flash Drive Specifications

Capacity

32GB

NAND Flash components

Single-Level Cell (SLC) NAND Flash memory

Form factor

2.5" Enterprise SFF

100mm x 70mm x 7mm

Performance

Sequential I/O:

- Up to 250MB/sec Read
- Up to 170MB/sec Write

Random IOPS:

- Random 4k Read: 35,000 IOPS
- Random 4k Write: 3,300 IOPS

Power

2.5 W Maximum

Active: 2.1 W TYP

Sleep: 100 mW TYP

Power Management

5 V SATA Supply Rail

Supports ATA Power Management and Advanced Power Management Specifications

SATA Interface Power Management

OS-aware hot-plug and removal

Reliability

7 x 24 x 3 years (100% Write Duty)

Bit Error Rate (BER): 1 sector per 10^{15} bits read

MTBF 2 million hours

Five years minimum useful life

Operating Environment

Temperature:

- Operating: 0º C to 70º C
- Non-Operating: -55º C to 95º C

Shock:

- Operating and Non-operating: 1,000G/0.5 msec

Vibration:

- Operating: 2.17 G (7-800 Hz)
- Non-operating: 3.13 G (10-500 Hz)

Compatibility

SATA Revision 2.6 compliant, compatible with SATA 1.5 Gb/s and 3 Gb/s interface rates

ATA/ATAPI-7 compliant

SSD Enhanced SMART ATA feature set

Compliance

UL, CE, C-Tick, BSMI, MIC, Microsoft WHQL, RoHS

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