SupremeRAID™ SR-1000

The New Performance Standard in Enterprise Data Protection

Designed for a modern software composable environment, Graid Technology Inc. has developed world's first future-ready RAID card that not only protects direct-attached flash storage but also those connected via NVMe over Fabrics —all at world record performance speeds and extremely low TCO.

THE CHALLENGE

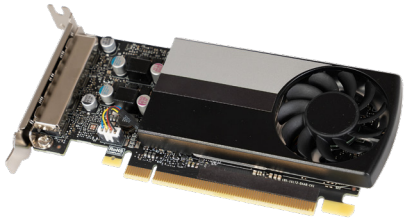
RAID Bottleneck

As NVMe SSD quickly becomes the new standard for storage infrastructure, a challenge arises for data center storage infrastructure design: the industry requires a future-ready solution to deliver NVMe SSD performance without sacrificing data security or business continuity. Simply put: flash storage performance is evolving too fast to be fully utilized by existing storage architecture.

Implementing a basic software RAID via the CPU can only deliver 10-20% SSD performance on average, while unfortunately consuming almost all of the CPU computing power. While utilizing proprietary hardware might achieve improved performance, the architecture still can't maximize the potential of flash storage.

THE SOLUTION

SupremeRAID™ SR-1000



In today's data center world, speed and throughput are everything. Graid Technology recognized the limitations and bottlenecks caused by traditional RAID and developed a GPU-based storage solution to launch RAID technology into the future.

Graid Technology is proud to introduce the world's first NVMe and NVMeoF RAID card created to unlock the full potential of your SSD performance. Our innovative GPU-based solution delivers world-record performance while increasing scalability, improving flexibility, and lowering TCO. With proven performance tests and partnerships with global industry leaders, SupremeRAID™ delivers maximum SSD performance, comprehensive enterprise data protection, unmatched flexibility, and ubeatable ROI.

16M IOPS

110GB/s Throughput

UP TO 100% SSD Performance

80% Cost Savings

5X Faster

	SupremeRAID™ SR-1000	High-end Hardware RAID
4k Random Read	16 M IOPS	3.5 M IOPS
4k Random Write	820 k IOPS	180 k IOPS
512k Sequential Read	110 GB/s	13.5 GB/s
512k Sequential Write	11 GB/s	4 GB/s
4k Random Read In Rebuild	3 M IOPS	36 k IOPS

*Based on RAID5 with 3rd Generation Intel® Xeon Scalable Platform and Intel D7-P5510

Unbeatable Performance

SupremeRAID™ cutting edge technology eliminates the traditional RAID bottleneck to unlock the full potential of your SSD performance. A single SupremeRAID™ SR-1000 is capable of delivering **16 million IOPS and 110GB/s of throughput**.

Flexible & Future Ready

Unmatched flexibility with features like new O/S support, compression, encryption, thin provisioning, or boot drive protection easily added with software releases

World Record Performance

Full NVMe performance with a single card: 16M IOPS and 110GB/s throughput based on RAID5 with 3rd Generation Intel® Xeon Scalable Platform and Intel D7-P5510

Highly Scalable

Easily manage 32 direct attached NVMe SSDs; extend data protection without sacrificing performance with Software Composable Infrastructure

Plug & Play

Effortless installation, no cabling or motherboard re-layout required; direct connect to SSD without PCIe switches

Free Up CPU Resources

Offload your entire RAID computation to SupremeRAID™ to free-up CPU computing resources for 5G, AI and AIoT applications

Easy to Use

SupremeRAID™ doesn't rely on memory caching technology, eliminating the need for battery backup modules

GIGABYTE KIOXIA AMD SEAGATE NVIDIA

"Absolutely phenomenal, we were blown away by the efficacy of this simple to use card and software. Compared to traditional hardware or software RAID, SupremeRAID™ delivers amazing ROI for demanding workloads."

BRIAN BEELER,
STORAGEREVIEW.COM
OCTOBER 2021

StorageReview

Are You Ready to Unleash Your Data Performance?

Don't get left behind, join the future of enterprise data protection. Contact us today.

Learn more about award-winning SupremeRAID™—the world's first NVMe and NVMeoF RAID card created to unlock the full potential of your SSD performance, enabling enterprise data centers to achieve record-breaking performance without sacrificing data security or business continuity.

Graid Technology Inc. is headquartered in Silicon Valley, with a sales office in Ontario and an R&D center in Taipei, Taiwan. Our leadership is composed of a dedicated team of experts with decades of experience in the SDS, ASIC and storage industries. Learn more at www.graidtech.com/news.

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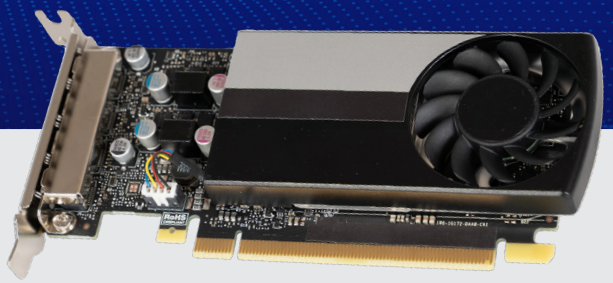
SupremeRAID™ SR-1000

FOR PCIe GEN 3

Test Environment Specifications **Software:** Linux Version: CentOS 8.5; Windows Version: Windows Server 2019 | **Hardware:** CPU: Intel(R) Xeon(R) Gold 6338 CPU 32-Core with 2.0GHz x 2; Memory: SK Hynix HMA82GR7CJR8N-XN DIMM DDR4 3200 MHz 16GB x 16; SSD: INTEL D7-P5510 SSDPF2KX038TZ 3.8TB x 20 | **RAID Configuration:** Random performance based on a drive group with 12 physical drives and 1 virtual drive; sequential performance based on a drive group with 20 physical drives and 1 virtual drive



SR-1000 Software Specs

Supported RAID levels	RAID 0, 1, 5, 6, 10
Max Physical Drives	32
Max Drive Groups	4
Max Virtual Drives per Drive Group	8
Max Drive Group Size	Defined by physical drive size
OS Support	AlmaLinux 8.5, 8.6 (Kernel 4.18) Rocky Linux 8.5, 8.6 (Kernel 4.18) CentOS 7.9, 8.3, 8.4, 8.5 (Kernel 4.18) openSUSE Leap 15.2, 15.3 (Kernel 5.3) RHEL 7.9, 8.3, 8.4, 8.5, 8.6 (Kernel 4.18) RHEL 9.0 (Kernel 5.14) SLES 15 SP2, 15 SP3 (Kernel 5.3) Ubuntu 20.04.0-20.04.5 (Kernel 5.15) Ubuntu 22.04 (Kernel 5.15) Windows Server 2019 x86-64 Windows Server 2022 x86-64 Windows 11 x86-64

SR-1000 Card Specs

Host Interface	x16 PCIe Gen 3.0
Max Power Consumption	50 W
Form Factor	2.713" H x 6.137" L, Single Slot
Product Weight	132.6 g

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Contact Graid Technology

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RELEASE NOTES & DOCUMENTATION

20230131

SupremeRAID™ SR-1000

FOR PCIe GEN 3

Introducing the world's first NVMe and NVMeoF RAID card to unlock the full potential of your SSD performance. SupremeRAID™ cutting edge technology eliminates the traditional RAID performance bottleneck to deliver world-record performance, comprehensive data protection, and unmatched flexibility at the lowest TCO on the market.

Unbeatable Performance

Chosen by CRN as one of the Ten Hottest Data Storage Startups of 2021 and a 2022 Emerging Vendor in the Storage & Disaster Recovery category, Graid Technology Inc. has developed the world's first NVMe and NVMeoF RAID card to unlock the full potential of enterprise SSDs for high performance applications: SupremeRAID™ SR-1000 NVMe/NVMeoF PCIe Gen 3 RAID card.

	Linux Environment			Windows Environment		
OPTIMAL	**RAID 5**	**RAID 6**	**RAID 10**	**RAID 5**	**RAID 6**	**RAID 10**
4k Random Read IOPS	16 M IOPS	16 M IOPS	16 M IOPS	2 M IOPS	2 M IOPS	2 M IOPS
4k Random Write IOPS	820 k IOPS	450 k IOPS	6 M IOPS	500 k IOPS	450 k IOPS	1 M IOPS
1M Sequential Read THROUGHPUT	110 GB/s	110 GB/s	110 GB/s	65 GB/s	60 GB/s	70 GB/s
1M Sequential Write THROUGHPUT	11 GB/s	11 GB/s	25 GB/s	9 GB/s	9 GB/s	35 GB/s

	Linux Environment			Windows Environment		
REBUILD REBUILD_SPEED=LOW						
4k Random Read IOPS	3 M IOPS	3 M IOPS	9 M IOPS	350 k IOPS	350 k IOPS	2 M IOPS
4k Random Write IOPS	600 k IOPS	400 k IOPS	5 M IOPS	400 k IOPS	370 k IOPS	1 M IOPS
1M Sequential Read THROUGHPUT	12 GB/s	13 GB/s	55 GB/s	12 GB/s	13 GB/s	15 GB/s
1M Sequential Write THROUGHPUT	11 GB/s	11 GB/s	25 GB/s	8 GB/s	8 GB/s	13 GB/s

BASED ON TESTING SPECIFICATIONS LISTED ON SIDE 2

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RELEASE NOTES & DOCUMENTATION

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