Micron® 9300 NVMe™ SSD

NVMe | U.2

When Microseconds Matter

Performance-critical cloud and data center workloads demand consistently fast throughput and near real-time access to data. The Micron® 9300 series of NVM Express® (NVMe™) SSDs delivers industry-leading sequential write performance and the lowest average write latency in the market to accelerate your growing data center demands.*

Rely on a Trusted, Proven Architecture

Micron has proven the value of flash technologies like 3D TLC NAND and NVMe in building next-level data center and cloud infrastructures. Our flagship high-performance storage product, the Micron 9200 SSD, was the industry's highest 4K random read IOPS SSD and the first to deliver over 10TB of storage capacity to the marketplace. The Micron 9300 SSDs leverage this rich history while improving speed and performance and lowering power (28% versus the 9200 SSD). The familiar architecture of the 9300 accelerates OEM quals.

Larger and More in Charge

With our highest-capacity data center SSDs, the Micron 9300 series challenges HDDs head-on with drives from 3.2TB to 15.36TB. The 9300 SSDs also offer simplified firmware management, expansion into multiple namespaces to accommodate multitenancy, and more parallel sessions for single storage devices. And the Micron 9300 SSDs are our most power-efficient and cost-efficient data center NVMe SSDs to date.

Key Benefits

No Read or Write Compromises

Consistently read *and* write up to 3.5 GB/s of sequential data.** The Micron 9300 SSDs ingest and read at industry-leading speeds, enabling faster data analysis.

Add IOPs to Your Balance Sheet

Maximize your data center investment with improved power efficiency (more than 28%) and performance.*** The Micron 9300 series saves rack/floor space and lowers license/power costs by using fewer drives to achieve more.

Performance Pays

Take advantage of solutions optimized for low latency and performance-critical workloads like caching, database acceleration, online transaction processing (OLTP), high-frequency trading (HFT), block and object stores, and training/caching for artificial intelligence (AI), machine learning (ML) and deep learning (DL).

HDD-Caliber Capacity, NVMe Results

Experience flexible, efficient storage utilization and multitenacy with up to 15.36TB capacity and 32 NVMe namespaces.

One Size Fits All

Get more from a single part number with Micron's Flex Capacity feature, which lets you adjust SSD capacity, performance and endurance to meet your needs.

Target Workloads and Applications

CACHING AND DATABASE ACCELERATION	AI/ML/DL TRAINING AND CACHING	HIGH FREQUENCY TRADING	BLOCK AND OBJECT STORES	OLTP

** Based on the best SKU in each NVMe high-performance product family's U.2 (15mm) form factor and information in public competitor data sheets accessed 1 February 2019. Actual performance may vary.*
***4KB transfers with a queue depth of 1 are used to measure READ/WRITE latency values.*
****Watt (average root mean square) of Micron 9200 SSD compared to the 9300.*

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Best-Fit Workloads for the 9300

AI/ML/DL Training and Caching

Accelerate data ingest and trim test and training cycle times for AI, ML and DL.

OLTP

Increase performance and consistency for better platform transaction rates.

NoSQL Databases

Build faster, smaller and more economical clusters at a lower cost.

Large Object

Manage and store more blocks, streams and objects in less space.

Small Random Block

Find significantly better performance than a hard disk drive, with fewer nodes.

Big Data

Bring performance to all four corners of your high-performance stacks. Even the top tier of tiered storage becomes cost-efficient.

Key Specifications

		9300 PRO (Read-Intensive, 1 Drive Write Per Day)			9300 MAX (Mixed-Use, 3 Drive Writes Per Day)		
Capacity[1]		3.84 TB	7.68 TB	15.36 TB	3.2 TB	6.4 TB	12.8 TB
Performance	**Seq Read (MB/s)**[2]	3500	3500	3500	3500	3500	3500
	Seq Write (MB/s)[2]	3100	3500	3500	3100	3500	3500
	Rand Read (K IOPS)[3]	835	850	850	835	850	850
	Rand Write (K IOPS)[3]	105	145	150	210	310	310
Endurance (Terabytes Written in PB)		8.4	16.8	33.6	18.6	37.3	74.7
Basic Attributes	**Interface**	PCIe® Gen3 x4 NVMe					
	Form Factor	U.2 (2.5-inch, 15mm)					
	NAND	Micron 64-layer 3D TLC NAND					
	Average Latency	Random read: 86µs Random write: 11µs					
Reliability	**Mean Time to Failure**	2 million device hours					
	UBER	<1 sector per 10^{17} bits read					
	Warranty	Up to 5 years					
Environmental Characteristics	**Power**	Sequential read: 14W MAX Sequential write: 21W MAX					
	Operating Temp	0–70°C					
Physical Characteristics	**Size (L x W x H)**	100.45mm x 70.10mm x 15.00mm					
	Weight	<235g					
Advanced Features[4]		Up to 32 NVMe namespaces, crypto erase, Flex Capacity feature, power-loss protection (for data in flight and at rest), data center data path protection (user and metadata), Storage Executive SSD management tool, secure signed firmware, up to 5 year warranty					

1. Unformatted. 1GB = 1 billion bytes. Formatted capacity is less.
2. 128KB transfer size, QD = 32, steady state.
3. 4KB transfer size, QD = 512, steady state.
4. No hardware, software or system can provide absolute security under all conditions. Micron assumes no liability for lost, stolen or corrupted data arising from the use of any Micron products, including those products that incorporate any of the mentioned security features.

9300 Base Part Numbers

SSD Family	Standard Part	Capacity	Form Factor
PRO	MTFDHAL3T8TDP-1AT1ZABYY	3.84TB	U.2
	MTFDHAL7T6TDP-1AT1ZABYY	7.68TB	U.2
	MTFDHAL15T3TDP-1AT1ZABYY	15.36TB	U.2
MAX	MTFDHAL3T2TDR-1AT1ZABYY	3.2TB	U.2
	MTFDHAL6T4TDR-1AT1ZABYY	6.4TB	U.2
	MTFDHAL12T8TDR-1AT1ZABYY	12.8TB	U.2

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Rev. B 06/2020 CCM004-676576390-11285