

UNLOCKING (→) UNPARALLELED PERFORMANCE

AEROSPIKE'S BENCHMARK TESTING
ON THE SANDISK DC SN861 SSD



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EXECUTIVE SUMMARY (→)

In the era of data-driven enterprises, achieving high-performance and low-latency data storage solutions is essential to drive business success. Aerospike, a leading real-time database, recently conducted a series of benchmark tests using the Sandisk DC SN861 NVMe™ SSD. The results demonstrated exceptional performance improvements, showcasing why this powerful combination is a game-changer for enterprises managing large-scale, latency-sensitive workloads. With remarkable throughput, reduced latency, and superior endurance, the Sandisk DC SN861 SSD is the ideal pair for Aerospike's high-speed, low-latency database solutions.

SANDISK DC SN861 SSD: HIGH-PERFORMANCE NVME™ SSD

The Sandisk DC SN861 SSD is Sandisk's next-generation NVMe™ SSD, designed specifically for enterprise data centers and high-performance workloads. Built with advanced NAND technology, the Sandisk DC SN861 SSD delivers:

- **High throughput:** Ensures faster data access and processing.
- **Low latency:** Provides quick response times for time-sensitive applications.
- **Endurance and reliability:** Optimized for continuous, 24/7 enterprise workloads.
- **Capacity options:** Offers a range of capacities to meet diverse storage needs.

With a focus on durability, scalability, and performance, the Sandisk DC SN861 SSD meets the demands of modern enterprises that require fast and consistent access to large datasets.



AEROSPIKE: THE REAL-TIME DATABASE FOR MODERN ENTERPRISES

Aerospike is a high-performance, distributed NoSQL database known for its ability to handle real-time, mission-critical applications with the lowest latency. It is widely adopted by industries such as financial services, adtech, ecommerce, gaming, and telecommunications, where the speed and accuracy of data processing are crucial.

Key features of Aerospike include:

- **Sub-millisecond latency:** Ensures real-time data processing at p99 levels.
- **High availability:** Delivers five-nines uptime for critical applications.
- **Scalability:** Supports massive datasets from gigabytes to petabytes with horizontal scaling.
- **Cost efficiency:** Reduces total cost of ownership by up to 80% through efficient resource utilization.



WHY THE SANDISK DC SN861 SSD AND AEROSPIKE PAIR WELL TOGETHER

A PERFECT PAIRING FOR OPTIMIZED OUTCOMES

The pairing of Aerospike and the Sandisk DC SN861 SSD is a natural fit, as both solutions are engineered to deliver high performance, low latency, and robust reliability. During the benchmark testing, Aerospike leveraged all Sandisk DC SN861 SSD capabilities to achieve remarkable performance gains, including:

- **Increased throughput:** The high-speed interface and advanced NAND technology of the Sandisk DC SN861 SSD boosted Aerospike's transaction processing capabilities, enabling faster data writes and reads.
- **Reduced latency:** The low-latency characteristics of the Sandisk DC SN861 SSD complemented Aerospike's sub-millisecond performance goals, resulting in quicker query responses for real-time applications.
- **Enhanced durability:** The Sandisk DC SN861 SSD's endurance features ensured that Aerospike deployments could handle continuous, intensive workloads without degradation in performance or reliability.

Additionally, Aerospike's hybrid memory architecture makes optimal use of high-speed SSDs, maximizing the value of the Sandisk DC SN861 SSD performance characteristics. By pairing Aerospike with the Sandisk DC SN861 SSD, enterprises can achieve faster insights, improved operational efficiency, and a competitive edge in their respective markets.

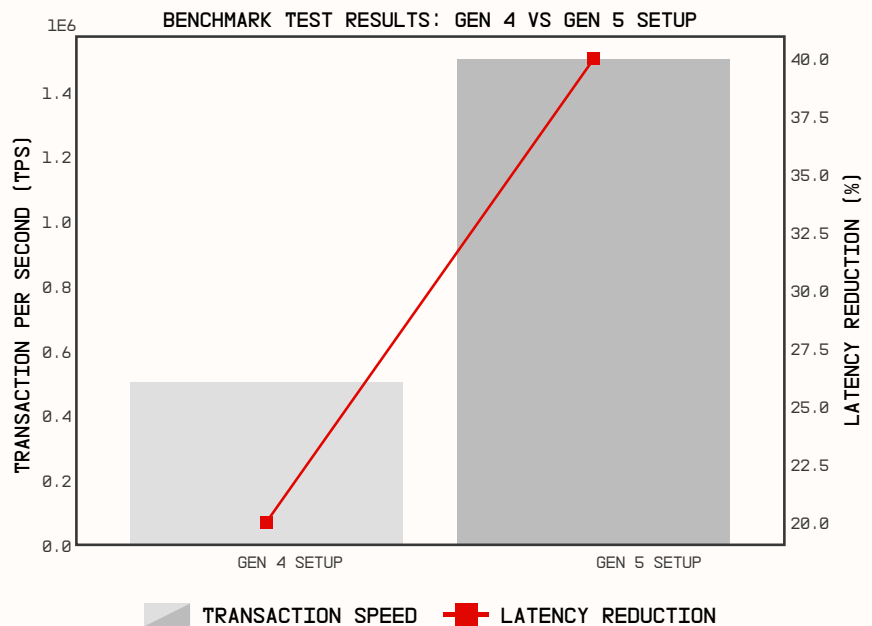
INSIDE THE BENCHMARK: HOW AEROSPIKE EVALUATED THE SANDISK DC SN861 SSD

UNMATCHED TRANSACTION SPEEDS AND LATENCY REDUCTION

The testing of the Sandisk DC SN861 SSD wasn't just any benchmark—it was a comprehensive, head-to-head evaluation against top competitors in the PCIe®/NVMe™-based flash category. While traditional metrics provide a baseline, they often fail to capture the true test of a drive's endurance: maintaining low read latency under sustained write pressure. Recognizing this gap, Aerospike developed the Aerospike Certification Tool (ACT) to rigorously test flash devices under realistic conditions.

The test setup used U.2 form factor drives and featured a workload profile with a 67% read and 33% write ratio using 1.5KB objects over a continuous 24-hour period. This configuration was designed to mirror the kind of intense data loads seen in production environments.

The results? The Sandisk DC SN861 SSD delivered standout performance, particularly when tested against PCIe® Gen 4 and Gen 5 platforms. The Gen 5 setup showed an impressive 3x improvement over its predecessor, pushing transaction speeds to new heights. The graph to the right highlights the transaction speeds (TPS) and latency reduction achieved in each setup.





In practical terms, this meant achieving 1.5 million transactions per second with notably low query latency under one drive write per day conditions. Even under a heavier workload of three drive writes per day, the Sandisk DC SN861 SSD delivered up to 1.7 million TPS. These results reflect the real-world reliability and performance that enterprise businesses require of high-performance workloads, even at demanding p99 latencies..

BENCHMARK TEST HIGHLIGHT

When paired with the Sandisk DC SN861 SSD, Aerospike's benchmark tests revealed several key performance improvements:

- 40% increase in transaction throughput
- 20% reduction in average query latency
- Consistent performance under heavy workloads
- Enhanced endurance with lower write amplification
- Best-in-class random IOPS, going up to 3.2 million.

These results highlight how the Sandisk DC SN861 SSD empowers Aerospike to handle real-time, data-intensive workloads with ease, making it a trusted solution for modern enterprise applications.

Aerospike's results are published on their [website](#), serving as a certification for enterprises and showcasing how the Sandisk DC SN861 SSD excels across various server configurations and usage scenarios. This validation gives companies the confidence to deploy the Sandisk DC SN861 SSD in mission-critical environments, knowing it will deliver consistently under pressure.

CONCLUSION

The combination of Aerospike and the Sandisk DC SN861 SSD represents a powerful solution for enterprises seeking high-performance, low-latency, and reliable data storage. With exceptional benchmark results, this partnership delivers the speed, scalability, and endurance needed for today's data-driven applications. Enterprises can confidently deploy Aerospike on the Sandisk DC SN861 SSD to unlock new levels of performance and efficiency, ensuring they stay ahead in an increasingly competitive digital landscape.

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