# Micron 7600 SSD: The PCIe® Gen5 SSD with leading quality of service for AI and mainstream data center workloads

Imagine a world where your data center operations are performant, efficient, exceptionally responsive, and secure. The Micron 7600 SSD is designed to transform this vision into reality.

### Class-leading PCIe Gen5 performance and power efficiency

The Micron 7600 SSD delivers fast access across a broad range of mainstream workloads with power efficiency that helps reduce power consumption, contributing to a more sustainable data center.[1]

### Exceptional workload responsiveness with best-in-class QoS and low latency

Low and consistent latency delivers fast and predictable workload responsiveness. The Micron 7600 SSD demonstrates significantly lower and more consistent latency than other SSDs in its class.[2]

### Deploy with confidence: Micron innovation and leading Micron G9 NAND

The Micron 7600 SSD is the world's first mainstream, data center SSD to use Micron G9 NAND.[3] Its vertically integrated architecture, including Micron DRAM, NAND, controller, and firmware, helps simplify qualification across multiple SSDs.


**Micron 7600 SSD (E3.S, E1.S, U.2)**

## Micron 7600 SSD: Key Benefits

### Superior performance and power efficiency for mainstream workloads

The Micron 7600 SSD enables class-leading performance for AI, databases, content delivery, real-time analytics, social media, cloud computing, and virtualization.[4]

### Low, consistent latency enables fast and predictable response times

The Micron 7600 SSD is the leader in low, consistent latency. Latency-sensitive applications show up to 59% better latency consistency when reading data, and up to 76% better with mixed read and write.[5]

### Leading-edge Micron technology and security

The Micron 7600 is the world's first mainstream data center SSD to use Micron G9 NAND, with an industry-leading NAND transfer speed of 3.6 GB/s.

The Micron 7600 SSD incorporates leading security features like hardware root of trust, securely signed firmware, and SPDM 1.2 (attestation) for identity authentication & firmware verification.

It offers options for FIPS 140-3 Level 2 and TAA compliance. Self-encrypting drive (SED) option helps keep your data safe by adding AES-256 encryption for hardware-based data encryption, with no loss of SSD performance.[6]

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1. Class refers to SSDs that are currently in production and available Gen5 mainstream data center SSDs with read-intensive endurance, from the top five competitive suppliers of OEM data center SSDs by revenue as of May 2025, as per the Forward Insights analyst report, "SSD Supplier Status Q1/25". Power efficiency refers to units of work (e.g., MB/s, IOPS, database operations per second, or some other measurement of work) divided by power consumed to complete that work.
2. Quality of Service (QoS) measures the full span of response times by IO completion percentages. QoS shows the time value at which a given percent of the IOs will complete. See https://www.snia.org/educational-library/latency-more-just-number-data-science-qos-2019 for additional information. Class refers to currently available, in-production PCIe Gen5 mainstream data center SSDs with read-intensive endurance from the top five competitive suppliers of OEM data center SSDs by revenue as of May 2025, as per the Forward Insights analyst report, "SSD Supplier Status Q1/25."
3. See https://investors.micron.com/news-releases/news-release-details/micron-announces-volume-production-ninth-generation-nand-flash for additional information on Micron G9 NAND.
4. Performance refers to MB/s and/or IOPS. The statement is an extrapolation of public performance information available at the time of this product's launch. Actual results may vary by platform, workload, and other factors.
5. Based on Micron's internal competitive 15.36TB mainstream, data center SSDs using RocksDB version 8.1.1, comparing 4KB random read and 4KB random read while writing workloads.
6. 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.

## Superior performance and power efficiency for mainstream workloads

Mainstream workloads such as AI data transformation, content delivery, social media platforms, real-time data and forecasting, cloud computing, and virtualization are at the heart of our world. Every day, they enhance efficiency and productivity, improving access to information and services, and supporting innovation and economic growth.

Fast, efficient storage makes all this technology work better and more efficiently, saving time, reducing power consumption, and improving everyday experiences for everyone.

| Performance and efficiency | | Micron 7600 SSD | Micron 7600 SSD performance advantage[7] |
|---|---|---|---|
| Sequential read | | 12GB/s | Industry-leading |
| Sequential write | | 7GB/s | Up to 27% better |
| Random read | | 2.1 million | Up to 5% better |
| Random write | | 400K | Up to 100% better |
| RocksDB[7] | Random read | 892,202 operations/sec | Up to 21% better performance |
| | | 84,966 operations/sec per watt | Up to 78% better power efficiency |
| | Random read while writing | 754,416 operations/sed | Up to 21% better performance |
| | | 79,113 operations/sec per watt | Up to 79% better power efficiency |

Table 1: Micron 7600 performance and power efficiency advantages

## Best-in-class responsiveness

Consistent responsiveness is crucial because it helps ensure that tasks are completed quickly and smoothly, reducing wait times and frustration. Predictable behavior helps ensure mainstream applications like e-commerce, supply chain management systems, and real-time, latency-sensitive systems deliver.

| Workload | Micron 7600 SSD latency advantage (using FiO) [8] | Workload | Micron 7600 SSD latency advantage (RocksDB) |
|---|---|---|---|
| 100% read | Up to 55% better | RocksDB random read latency | Up to 59% better |
| 90% read, 10% write | Up to 58% better | | |
| 80% read, 20% write | Up to 58% better | RocksDB random read while writing latency | Up to 76% better |
| 70% read, 30% write | Up to 67% better | | |

Table 2: Micron 7600 SSD latency advantages

## Leading-edge Micron technology and G9 NAND

The Micron 7600 SSD is the world's first mainstream, data center SSD to use ninth-generation TLC NAND, whose six-plane architecture delivers up to 3.6 GB/s transfer rate. Coupled with a PCIe Gen5 interface, this SSD enables top-tier results for mainstream workloads.[6] This SSD provides broad support for OCP 2.5 and leading security features.[9]

| Micron innovation | Benefit |
|---|---|
| Broad OCP 2.5 standard support | OCP 2.5 supported in standard firmware; configurable (25W down to 10W); 3 months data retention @ 40 °C data retention (power off at EOL). |
| Industry-leading G9 TLC NAND | Industry-leading six-plane NAND architecture provides higher degrees of parallelism to help improve performance, supporting more simultaneous read/write commands issued to the NAND. I/O rates up to 3.6 GB/s, the fastest NAND now shipping in a data center SSD. |
| Security features built in | SPDM 1.2 device security, self-encrypting drive (SED) options; Micron Secure Execution Environment (the Micron SEE is a dedicated security processing unit electrically isolated from the other [open] microprocessor(s) inside the SSD controller); FIPS 140-3 Level 2, and TAA compliant options available. |

Table 3: Micron innovations

7. RocksDB is a database used in many backend, latency-sensitive applications like streaming and ride sharing. For additional details on RocksDB, see https://github.com/facebook/rocksdb/wiki/RocksDB-Overview
8. Based on Micron's internal competitive 15.36TB mainstream, data center SSDs using Flexible IO Tester (FIO) using a 4KB IO size and QD=128, see https://fio.readthedocs.io/en/latest/fio_doc.html for additional information on FIO. RocksDB statements based on Micron internal testing using RocksDB version 8.1.1 comparing 4KB random read and 4KB random read while writing workloads. All values are calculated as ((Micron 7600 SSD value) / (competitive SSD value)) – 1, expressed as a percentage. Sequential values measured with queue depth (QD) =
9. The Micron 7600 SSD complies with most, but not all, requirements of the Open Compute Project Datacenter NVMe SSD Specification 2.5. 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.

# Micron 7600 SSD key specifications

| U.2 | | 7600 PRO: E3.S/E1.S/U.2 Read-Intensive, 1 Drive Write per Day | | | | 7600 MAX: E3.S/E1.S/U.2 Mixed-Use, 3 Drive Writes per Day | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Capacity[10]** | | **1.92TB** | **3.84TB** | **7.68TB** | **15.36TB** | **1.6TB** | **3.2TB** | **6.4TB** | **12.8TB** |
| Performance[11] | Seq. Read (MB/s) | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| | Seq. Write (MB/s) | 3,300 | 6,500 | 7,000 | 7,000 | 3,300 | 6,500 | 7,000 | 7,000 |
| | Rand. Read (K IOPS) | 1,800 | 2,100 | 2,100 | 2,100 | 1,800 | 2,100 | 2,100 | 2,100 |
| | Rand. Write (K IOPS) | 180 | 300 | 400 | 400 | 260 | 560 | 675 | 675 |
| | 70/30 Rand. Read/Write (K IOPS) | 320 | 480 | 700 | 700 | 450 | 700 | 1,000 | 1,100 |
| | Latency (TYP, µs)[12] | 75 (read) 15 (write) | 75 (read) 15 (write) | 75 (read) 15 (write) | 75 (read) 15 (write) | 75 (read) 15 (write) | 75 (read) 15 (write) | 75 (read) 15 (write) | 75 (read) 15 (write) |
| Endurance (total bytes written in TB, RND, SEQ)[13] | | 3,500 14,000 | 7,000 29,400 | 14,000 58,300 | 28,000 104,500 | 8,700 18,000 | 17,500 37,200 | 35,000 74,200 | 70,000 143,100 |

| Micron 7600 SSD: Common features | | |
|---|---|---|
| Basic Attributes | Interface | PCIe Gen5 1x4, NVMe v2.0d |
| | NAND | Micron G9 TLC NAND |
| Reliability | MTTF[14] | MTTF: 2.0M hours @ 0–55°C and 2.5M hours @ 0–50°C |
| | UBER | <1 sector per $10^{17}$ bits read |
| | Warranty | 5 years |
| Environmental Characteristics | Power | Sequential read (average RMS value): ≤ 14W (PRO and MAX)<br>Sequential write (average RMS value): ≤ 14W (PRO and MAX) |
| | Operating Temp. | 0-70°C (If SMART temperature exceeds 77°C, performance will be throttled) |

Note: All values provided are for reference only and are not warrantied values. For warranty information, visit https://www.micron.com/support/sales-support/returns-and-warranties/enterprise-ssd-warranty or contact your Micron sales representative. Values represent the theoretical maximum endurance for the given transfer size and type. Actual lifetime will vary by workload.

Table 4: Micron 7600 SSD performance summary and common features

# Micron 7600 SSD part numbers

Micron 7600 SSD part number information is provided below for configuration-dependent values (shown in bold). Other part number values in the example part number are fixed. See the parts catalog at micron.com/7600 for more information.

MT FD L **BQ** **15T3** T **HG** - 1 BP 1 **J** **AB** YY

**Drive Form Factor**
- AL = U.2 (2.5 inch, 15mm)
- BQ = E3.S (7.5mm)
- CE = E1.S (15mm)

**Drive Capacity**

| PRO | | | MAX | | |
|---|---|---|---|---|---|
| 1T9 | = | 1.92TB | 1T6 | = | 1.6TB |
| 3T8 | = | 3.84TB | 3T2 | = | 3.2TB |
| 7T6 | = | 7.68TB | 6T4 | = | 6.4TB |
| 15T3 | = | 15.36TB | 12T8 | = | 12.8TB |

**Feature Set**
- AB = Standard
- FC = FIPS

**Extended Firmware Features**
- J = OCP 2.5 + Non-SED
- D = OCP 2.5 + TCG Opal

**Product Family**
- HG = 7600 PRO
- HS = 7600 MAX

10. Unformatted. 1GB = 1 billion bytes. Formatted capacity is less.
11. Performance measured under the following conditions: Steady state as defined by SNIA Solid State Storage Performance Test Specification Enterprise v1.1; Drive write cache enabled; NVMe power state 0; Sequential workloads measured using FIO with a queue depth of 32; Random READ workloads measured using FIO with a queue depth of 256 (1,100,000 IOPS statement based on 4K sector size; Random WRITE workloads measured using FIO with a queue depth of 128.
12. Latency values measured with random workloads using FIO, 4KB transfers, queue depth = 1; TYP = median, 50th percentile.
13. Actual lifetime will vary by workload. Total bytes written calculated assuming drive is 100% full (user capacity) with workload of 100% random aligned 4KB. Refer to percentage used in the SMART/Health information (Log Identifier 02h) to check the device life used.
14. Product achieves MTTF based on population statistics not relevant to individual units.

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