PRODUCT BRIEF

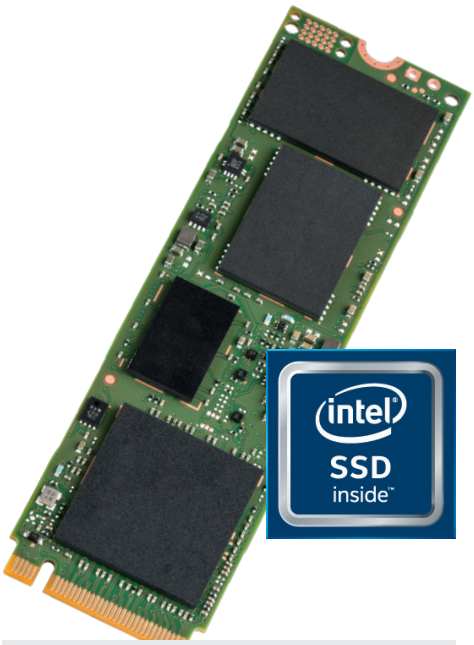
Intel® Solid State Drive Data Center P3100 Series

Data Center (DC), PCIe* (P), 3D NAND

Intel's First PCIe*-Based Data Center SSD in the M.2 Form Factor

Value-based Performance Designed for Data Center Usage

Transform the economics of data center storage with Intel® 3D NAND SSDs.



Product Spotlight

- Designed for boot-specific data center usage models
- Proven Intel quality and reliability
- Designed with integrity
- Single-side M.2 (22x80 mm) form factor
- Low power consumption
- 0.5 Drive Writes Per Day (DWPD)[4]
- Hardware-based AES-256 encryption
- Backed by 5-year Intel warranty

Intel 3D NAND TLC Technology

The Intel® Solid State Drive DC P3100 Series is Intel's first 3D NAND TLC-based M.2 form factor SSD with the PCIe* 3.0x4 and NVMe* interface specifically architected for the data center. It is part of the Intel® 3D NAND SSD family of products. Delivered by a trusted supplier, using proven floating gate design technology, Intel® 3D NAND SSDs push the limits of performance and value to transform the economics of storage.

Entry PCIe* Boot Drive

The Intel® SSD DC P3100 Series delivers ideal endurance and performance for read-intensive workloads, and is specifically designed and tested for data center usage models.

The DC P3100 Series is validated for the most common data center environments including boot, search indexing, edge caching, and web hosting.

Single-Sided for Design Flexibility

All DC P3100 Series capacity points, including 1TB, are single-sided M.2 (22x80 mm) form factor, giving data center designers the flexibility to implement higher-density storage solutions, or to allocate more space for other critical server components.

Performance that Matters

The DC P3100 Series features impressive sequential read bandwidth of up to 1,800 megabytes per second[1] (MB/s) and sequential writes of up to 175 MB/s.[1] Random read input/output operations (IOPS) of up to 114k[2] support read-intensive usage models, and random writes up to 10k IOPS[2] deliver consistent application performance over a wide range of commonly supported data center workloads.

Low Power, Lower TCO

With a power draw of only 10 milliwatts (mW), the DC P3100 Series consumes 90% less power than a typical enterprise hard disk drive (HDD) at idle.[3] Average active power of 5.5 watts is up to 50% lower than enterprise HDDs. With this superior power efficiency and the space-saving advantages of the M.2 form factor, data centers can expect to see significant total cost of ownership (TCO) benefits with the DC P3100 Series.

Quality & Reliability You Can Trust

The DC P3100 Series is backed by Intel's five-year limited warranty, which includes Intel's world-class post sales customer support.

TECHNICAL SPECIFICATIONS[5]

Model Name	Intel® Solid State Drive Data Center P3100 Series			
Capacity (GB)	128, 256, 512, and 1024 (all single-sided)			
NAND Flash Memory	3D Tri-Level Cell (TLC)			
Bandwidth	Sequential Read (up to)[1]	Sequential Write (up to)[1]	Random Read (up to)[2]	Random Write (up to)[2]
	1800 MB/s	175 MB/s	114k IOPS	10k IOPS
Interface	PCIe* 3.0x4, NVMe*			
	Form Factor		**Height/Weight**	
Form Factor, Height and Weight	Single-sided M.2		Up to 1.5mm / up to 40 grams	
Life Expectancy[6]	1.6 million hours Mean Time Between Failure (MTBF); 0.73% AFR[7]			
Operating Temperature	0˚C to 70˚C			
RoHS Compliance	Meets the requirements of European Union (EU) RoHS Compliance Directives			

ENDURANCE

Capacities (GB)	Terabytes Written TBW	JEDEC* Workload (Drive Writes per Day) DWPD (for 3 years)[4]	DWPD (for 5 years)[4]
128	72	0.52	0.31
256	145	0.52	0.31
512	300	0.52	0.31
1024	580	0.52	0.31

For more information, visit www.intel.com/ssd

1. Performance measured with 64 KB transfer size with queue depth 128.
2. Performance measured with 4KB transfer size with queue depth 128.
3. Power measured during Windows* Idle on system with PCIe ASPM and NVMe low power states.
4. 0.5 DWPD for 3 years, warrantied for 5 years with 0.3 DPWD
5. Test and System Configuration: Processor: Intel® Xeon® E5-2699 v3, Speed: 2.30GHz, BIOS: Intel® 2U Release, DRAM: DDR3 – 32GB, OS: Linux* Centos 7.0, NVMe Driver: Kernel 4.3.3 (native), Intel® SSD DC P3100.
6. All documented endurance test results are obtained in compliance with JESD218 Standards. See www.jedec.org for detailed definitions of JESD218* Standards.
7. Source – Intel: Figure shown represents Intel's Annual Failure Rate (AFR) goal for Intel® SSD DC P3100 Series.

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Benchmark results were obtained prior to implementation of recent software patches and firmware updates intended to address exploits referred to as "Spectre" and "Meltdown". Implementation of these updates may make these results inapplicable to your device or system.

Tests document performance of components on a particular test, in specific systems. Differences in hardware, software, or configuration will affect actual performance. Consult other sources of information to evaluate performance as you consider your purchase.

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