PRODUCT BRIEF

Intel® Solid State Drive Data Center S3520 Series

Data Center (DC), SATA (S), 3D NAND

Intel Inside.
Modernize your storage outside.

The Most Trusted SATA SSD Now on 3D NAND Technology from Intel®

Modernize your data center storage and make the switch from HDDs to the Intel® SSD DC S3520 Series.



Overview

With an increasing demand for real-time analytics, forecasts indicate that by 2018, 60% of data centers will require high-performance computing solutions — and 40% of high performance computing (HPC) will be available on-demand in the cloud.[1] Intel can give the data center a competitive advantage with the Intel® Solid State Drive Data Center S3520 Series. The Intel® SSD DC S3520 Series is designed for data center, cloud, and embedded usage segments, and is ideal for read intensive workloads such as boot, web server, low data rate operational databases, and analytics.

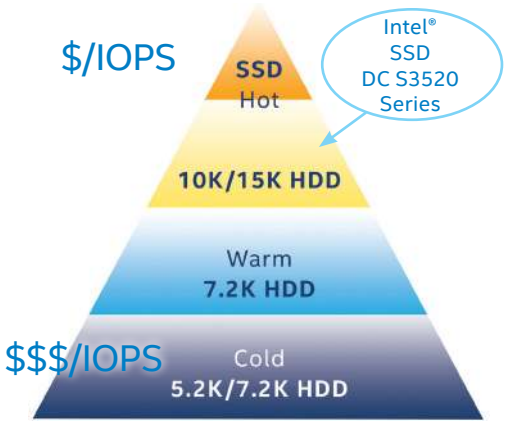
Intel® 3D NAND SSDs

The SSD DC S3520 Series is part of the Intel® 3D NAND SSD family of products. Built on breakthrough 3D NAND and delivered by a proven and trusted supplier, Intel® 3D NAND SSDs transform the economics of storage.

Intel® 3D NAND SSDs deliver the combination of data integrity, performance consistency, and drive reliability that you expect from Intel. The DC S3520 Series delivers a level of IOPs per dollar that HDDs cannot touch; a level that equips data centers with the high performance of SSDs at a price comparable to that of HDDs.

Switch from HDDs

The DC S3520 Series helps bridge the gap between warm tier and hot tier storage. (See diagram below.) The DC S3520 is a comparably priced alternative to hard disk drives (HDDs) with power efficiency[2], performance, drive reliability and data integrity. Also, the DC S3520 Series was designed as part of a complete solution with the CPU, chipset, network interface, SSD and firmware – all of which are validated together on a massive scale; thousands of drives in various configurations.



The DC S3520 Series helps to bridge the gap between warm tier and hot tier storage at a price comparable to HDDs.

Increased Performance Per Watt

The DC S3520 Series has a much lower active write power, which translates to 35% more rack performance per watt compared to the Intel® SSD DC S3510.[2] This lower power usage means data centers can fit roughly two times the number of drives in a 1.7kW rack. Even with the increase in rack density and performance, the power savings can be up to 46% above what was previously available with the DC S3510.

Product Spotlight

- Excellent efficiency across power states (compared to DC S3510 Series)
  - 15% lower idle power
  - 30% lower active write power
  - +35% performance/watt (compared to DC S3510 Series)
- Increased endurance at 1.0 DWPD, suitable for a broad range of applications
- Low latency
- Form factors - 2.5" and M.2 (80mm) with increased capacities

TECHNICAL SPECIFICATIONS[3]

Model Name		Intel® Solid State Drive Data Center S3520 Series	
Capacities		2.5": 150GB, 240GB, 480GB, 800GB, 960GB, 1.2TB, 1.6TB	M.2: 150GB, 240GB, 480GB, 760GB, 960GB
Sequential Sustained Performance[4,5,9]	Read Write (MB/s)	Up to 450 Up to 380	Up to 410 Up to 320
Random I/O Operations per second (IOPS)[4,9]	Read Write	Up to 67.5K Up to 17K	Up to 53K Up to 14.4K
Lifetime Endurance[6]		Up to 1.0 Drive Writes Per Day	
Latency[7]	Read/Write	40µs / 42µs	46µs / 50µs
Interface		SATA 6Gb/s, compatible with SATA 3Gb/s and 1.5Gb/s	
Form Factor Height / Weight		**2.5"** 7.0mm thick/up to 66 grams ± 2 grams	**M.2** 9 grams ± 1 gram
Life Expectancy		2 million hours Mean Time Between Failures (MTBF), 230 years	
Power Consumption8		Up to 3.5W Typical	Idle: Up to 0.7W Typical
NAND Flash Memory		Intel® 3D NAND Flash Memory Multi-Level Cell (MLC) 16nm	
Operating Temperature		0° to 70° C	0° to 84° C
RoHS Compliance		Meets the requirements of European Union (EU) RoHS Compliance Directives	
Product Ordering		To order visit www.intel.com/ssd	

Learn more about how Intel SSDs can modernize your data center. **Go to intel.com/ssd**

1. Diane Bryant, Senior VP and GM, Data Center Group, Intel Corporation - IDF 2015 Keynote "Data Center: The Future is Software Defined"
2. Seagate 10K.3 standard endurance HDD (measured) 300GB Sequential Write – 8W; S3520 Sequential Write (measured): 240GB - 2.5W, 480GB - 3.2W
3. Based on the Intel® Solid State Drive DC S3520 Series
4. Performance varies by capacity and is measured using FIO* with Queue Depth 32, for sequential workload with single worker. For Random workload Queue Depth 32, with 4 workers.
5. Measurements are performed on full span of logical block address (LBA) range on an SSD that is filled to capacity with data. System setup Intel® Xeon® CPU E5-2699v3 @ 2.30GHz on Intel® S2600WT2 mother-board, Intel® C612 Chipset (Intel® DH82029 PCH), BIOS Version SE5C610.86B.01.01.0014.121820151719 32GB DDR4, CentOS* 7, Kernel 4.3.3, FIO* 2.8, Intel® SSD DC S3520
6. Using JESD218 standard
7. Average latency measured with 4KB sequential I/O at Queue Depth 1
8. Active power measured during execution of Full Sequential Workload with 128KB transfer size, idle power is measured when there is no I/O to SSD.
9. 150GB measured with 8GB span, 150GB measured with 8GB span using IOmeter. System setup: Intel® Core™ i7-3960x on Intel® DX79SI desktop motherboard, BIOS Version 0537 – SIX7910J.8 6A.0537.2012.0723.1217 8GB DDR3 LSI 9265-8i, FW 3.190.25-1776

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