PRODUCT BRIEF

Intel® Solid State Drive Data Center P3520 Series

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

Bringing PCIe* Performance to the Mainstream

High Density Intel® 3D NAND SSD for Best Value

Built with the data integrity, drive reliability, and performance consistency you expect from Intel.

Introduction

As a result of the growing demand for cloud services, it's no longer only large scale providers that offer cloud services. Regional cloud service providers, independent software vendors, original equipment manufacturers, telecommunications companies, systems integrators and others are seeking to compete in the cloud service segment.

In today's competitive business environment, current as well as newcomers to cloud computing must deliver diversified services to ensure that data centers have the agility to respond to dynamic business needs, the ability to scale on demand, and are cost efficient.

The Intel® Solid State Drive Data Center P3520 Series utilizes Intel® 3D NAND SSD to meet the challenges of top data center customers by enabling the introduction of new/additional services while reducing costs and improving quality of service.

Intel® 3D NAND SSDs

The SSD Data Center P3520 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.

Next Generation SSD Performance

As Intel's newest solid state storage solution, the Intel® SSD DC P3520 Series offers the speed of PCIe* performance, making it the ideal choice for read-intensive workloads.

The data explosion is redefining the storage landscape. The DC P3520 Series allows you to transition your storage solutions from SATA SSDs and HDDs to the next-generation performance of PCIe in a cost-effective manner.

Transitioning your storage platform to the DC P3520 Series delivers the best of both worlds; cost-efficient performance for your customers today, with the ability to prepare for a competitive edge in the future.

High Performance, Low Cost

The Intel® SSD Data Center Family for PCIe offers consistently amazing performance that provides fast data streams directly to the processor, such as the high-performance Intel® Xeon® processor, for efficient server data transfers.

The DC P3520 Series, utilizing the low latency and high bandwidth of the NVMe* specification, enables up to 4.7x the performance of SATA.[1] When compared to 10K HDDs, the DC P3520 Series enables up to 359x faster random read, up to 67x faster random write, up to 10.3x faster sequential read, and up to 5x faster sequential write.[2] NVMe

enables expanded compute power, and performance; paving the way for the data center of the future.

The Intel® DC P3520 Series' cost structure delivers a breakthrough cost performance profile with our best IOPS value per dollar, optimized for read-intensive workloads.

Available in capacities of 450GB, 1.2TB and 2TB – the DC P3520 Series is optimized for high density data center/ enterprise configurations, meeting the data storage needs of today and tomorrow.

For New Designs or Upgrading Existing Systems

Intel's compatibility validation team and robust PCIe compliance programs enable the DC P3520 Series' broad compatibility. In mainstream operating systems the DC P3520 Series works straight out of the box; it can be quickly integrated into new designs and existing systems can be easily upgraded.

- PCIe uses industry standard software and drivers
- Available in the U.2 2.5-inch form factor with densities ranging from 450GB to 2TB
- Industry standard PCIe 3.0 x4 half-height half-length (HHHL) low-profile Add-in-Card (AIC) in 1.2TB and 2TB capacities

Drives with Integrity

Like all Intel SSD Data Center family of products, these solutions are designed, delivered and supported with Intel's unique advantage:

- A proven track record of innovation leadership
- Complete product lifecycle support driving solution-ready ecosystems and platform-expert post-sales support
- Uncompromised supply chain quality enabling world class delivery performance and product quality
- Lasting integrity providing robust protection from data loss and corruption
- Reliably effective performance; drives perform as expected day one through decommission
- Increased platform confidence through complete in-house design

Product Spotlight

- Intel's best value on high-density Intel 3D NAND
- Up to 4.7x performance over SATA[1]
- Up to 90% IOPs consistency
- Up to 100x more effective at preventing SDC[3]

TECHNICAL SPECIFICATIONS[4]

CAPACITY	RANDOM 4K READ	RANDOM 4K WRITE	RANDOM 4K 70/30 READ/WRITE	SEQUENTIAL READ	SEQUENTIAL WRITE
2TB	375,000 IOPS	26,000 IOPS	85,000 IOPS	1,700 MB/s	1,350 MB/s
1.2TB	320,000 IOPS	26,000 IOPS	80,000 IOPS	1,700 MB/s	1,300 MB/s
450GB	145,000 IOPS	19,000 IOPS	50,000 IOPS	1,200 MB/s	600 MB/s

For more information on Intel® SSD DC P3520 Series, visit **www.intel.com/SSD**

1 4.7X Performance. Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Comparing 2TB Intel® SSD DC P3520 with 1.6TB Intel® SSD DC S3520. Any differences in your system hardware, software or configuration may affect your actual performance.

2 HDD vs. P3520 Comparison. Performance data based on IOMeter* 2014 Configuration: Results based on Intel® DC P3520 450GB versus Seagate* Savvio* 10K SAS ST300MM006 Hard Drive. Any differences in your system hardware, software or configuration may affect your actual performance.

3 Silent Data Corruption. Source - Intel. Test performed on Intel® SSD S3x00 drives, Samsung PM853T and SM843T, Micron P400e, Seagate 600 Pro and SanDisk Lightening drives. Drives were exposed to increasing amounts of radiation. After a drive "hang", a power cycle was performed to determine whether the drive would re-boot. If a drive re-booted it was read, and data was compared to the tester's master copy of the up-to-date data that the drive was expected to contain based on writes the drive had acknowledged as completed prior to the "hang" event. If the drive returned data that differed from the expected data, it was recorded as failing for silent errors. The annual rate of silent errors was projected from the rate during accelerated testing divided by the acceleration of the beam (see JEDEC standard JESD89A).

4 Test and System Configuration: Processor: Intel® Xeon® E5-2699 v3, Speed: 2.30GHz, Chipset: Intel® DH82029, Intel Server Board: S2600WT2, BIOS: Intel® SE5C610.86B.01.01.0008.021120151325, release date 02/11/2015, DRAM: DDR3 – 32GB, OS: Windows* Server 2012-RC2, Linux* Centos 7.0 kernel 4.4, Intel® SSD DC P3520, 180GB, Intel NVMe* Driver v1.0.0.9017.

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