No Spin. All Grin.
The Ultimate Data Center SSD.

Just plug it in. PCIe*-based Intel® Solid-State Drive 910 Series enables a whole new way of looking at data center and cloud storage with ultimate performance, high endurance, and great flexibility.

High Performance

The Intel® Solid-State Drive 910 Series brings high-storage performance directly to the server CPU through the PCIe bus. At up to 2 gigabytes per second (GB/s) sequential read and 1.5GB/s sequential write bandwidth, storage throughput is increased up to 4X faster than previous Intel SATA 6Gb/s SSDs. Server CPU utilization is taken to new levels – accelerating data center virtualization, on-line transactions, and cloud computing. Servers and storage arrays become more responsive as critical data is fed faster directly to the system CPU, transferring more data in less time.

High Endurance

The Intel SSD 910 Series draws from decades of Intel memory engineering experience and SSD management utilizing High Endurance Technology (HET) for 30X increased endurance over standard-endurance SSDs. The Intel SSD 910 Series HET solution combines specially ruggedized 25nm multi-level cell (MLC) Intel® NAND Flash Memory with SSD management techniques. HET MLC NAND benefits from an optimized NAND manufacturing process, circuit design, and test optimization to increase program/erase cycles beyond standard MLC Intel NAND. Additionally, the Intel SSD controller and firmware are enhanced for less NAND wear, NAND error reduction, and system error management. The result is an Intel data center 25nm MLC NAND storage solution providing data center storage longevity and cost-effectiveness.
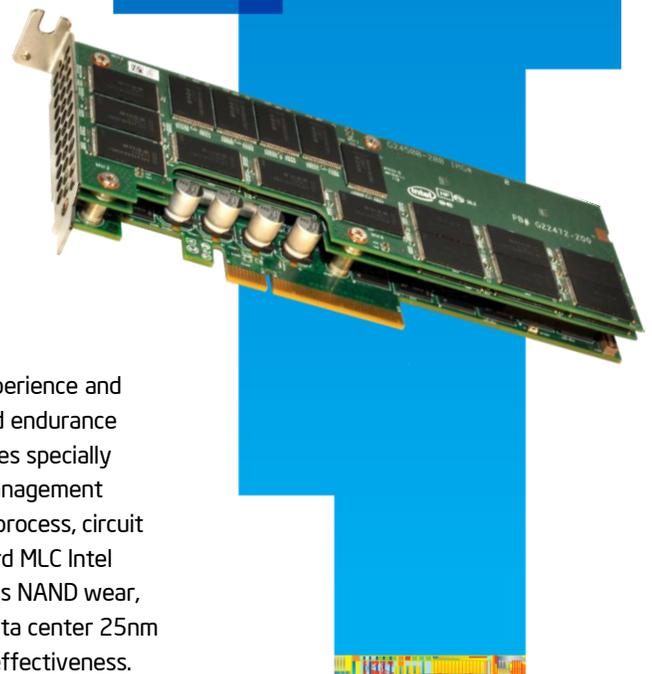
Easy Deployment

The Intel SSD 910 Series advanced architecture employs Intel® SSD controllers, firmware, and 25nm MLC Intel NAND Flash Memory technology to deliver extremely high throughput—dramatically outperforming 15k rpm hard disk drives (HDDs). The 800GB Intel SSD 910 Series provides 60% greater sequential read performance with 60X greater random read and 20X greater random write performance than eight short-stroke RAIDed 10k rpm SAS HDDs connected to a PCIe Host Bus Adapter (HBA)[1]. In addition, the Intel SSD 910 Series consumes 5X less space and 2.5X less power. The Intel SSD 910 Series is easy to install, providing a seamless, post-deployment server storage upgrade with no changes to existing server design. It's as easy as plugging into a PCIe slot, loading drivers, and rebooting the system. HBA configuration, cabling, and hardware arrangements are eliminated. Tiered storage comes alive with extremely fast hot-file access!

Proven Reliability

Intel SSD 910 Series reliability is based on proven development. Intel NAND and SSD manufacturing ensure low defect rate. The Intel NAND, controller, and firmware qualification ensure a quality solution. Intel SSD system qualification ensures system compatibility. And, Intel technical support is available if needed. In addition, the Intel® SSD Data Center Tool provides a powerful set of management and information tools to monitor and configure the Intel SSD 910 Series. The FREE Intel SSD Data Center Tool can be downloaded at: www.intel.com/design/flash/nand/managessd.htm

Solid-State Computing Starts with Intel Inside® For more information, visit **www.intel.com/go/ssd**

Intel® Solid-State Drive 910 Series

Technical Specifications[2]	
Model Name	Intel® Solid-State Drive 910 Series
Capacity	400GB and 800GB
NAND Flash Memory	25nm Intel® NAND Flash Memory Multi-Level Cell (MLC) with High Endurance Technology (HET)
Bandwidth[3]	Sequential Performance (up to): Read 1 / 2 GB/s (400 / 800GB) Write 0.75 / 1 / 1.5 GB/s (400 / 800GB / 800GB in Max performance mode)
Read / Write Latency[4]	65[5] / 65[6] µs
Random I/O Operations Per Second (IOPS) [7]	Read (up to): 90,000 / 180,000 IOPS (400 / 800GB) Write (up to): 38,000 / 75,000 IOPS (400 / 800GB)
Interface	PCI Express* 2.0 X8 Half-Height, Half-Length add-in card
Height and Weight	H x L x W: 69 x 168 x 19mm Weight: 125 / 190g (400 / 800GB)
Life Expectancy	>1 million hours Mean Time Between Failures (MTBF)
Lifetime Endurance[8]	7 / 14 PB (400 / 800GB)
Power Consumption	Active: <25W Typical (Default mode) <28W Typical (Max Performance Mode) Idle: 8 / 12W Typical (400 / 800GB)
Operating Temperature	0°C to 55°C with 200 LFM (linear feet per minute) airflow 0°C to 55°C with 300 LFM (linear feet per minute) airflow (Max performance mode)
RoHS Compliance	Meets the requirements of European Union (EU) RoHS Compliance Directives
Product Health Monitoring	▪ Intel® SSD Data Center Tool: http://www.intel.com/design/flash/nand/managessd.htm ▪ Self-Monitoring, Analysis and Reporting Technology (SMART) attributes ▪ SCSI log pages

1 Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. Configurations: 2x Intel® Xeon E5-2680@2.70GHz, Intel® C600 Series Chipset, driver v 9.2.3.1022, 8 x 4GB 1333MHz DDR3, Windows Server 2008 R2, Intel® S2600CP motherboard, Onboard graphics, driver v2.02.001, Intel® Rapid Storage Technology enterprise, SE5C600.86B.99.99.X032.072520111237 BIOS. HP* HDD 8x MBF2600RC 10K RPM 600GB (f/w: HPD2) , Intel SSD 910 Series MLC 800GB, driver v. 13.0.0 (f/w: 1200D006A411), LSI* MegaRAID Adapter 9265-8i, driver v. 5.2.112 (f/w: 23.1.1-0004), 8x HDDs in 800GB RAID 0 volume; 1x SSD occupying PCIe Gen 2.0 x8 slot. For more information go to http://www.intel.com/performance

2 Based on the Intel® SSD 910 Series Preliminary Product Specification.

3 Performance measured using Iometer with 128 KB (131,072 bytes) of transfer size with Queue Depth 32 per NAND module. Workload run on 4/2 NAND modules (800 GB/400 GB) simultaneously. Performance measured is aggregate across all NAND modules. Performance specifications apply to both compressible and incompressible data.

4 Values represent application-level round-trip latency.

5 Device measured using Iometer. Latency measured using sequential 512 B transfer size with Queue Depth 1, and measured on a per-NAND module basis.

6 Device measured using Iometer. Latency measured using sequential 4 KB transfer size with Queue Depth 1, and measured on a per-NAND module basis.

7 Performance measured using Iometer* with Queue Depth 32 per NAND module. Measurements performed on full LBA span of the drive. Random workload run on 4/2 NAND modules (800 GB/400 GB) simultaneously. Performance measured is aggregate across all NAND modules. Performance specifications apply to both compressible and incompressible data.

8 Assumes wear-leveling over all NAND modules. The 400 GB SSD presents storage as two 200 GB NAND modules. The 800 GB SSD presents storage as four 200 GB NAND modules. Each NAND module will deliver specified 'per-NAND module' endurance independent of other NAND modules. Total drive endurance is a sum of endurances of each NAND module.