REDEFINING THE DATA CENTER

with Intel® Optane™ technology

With an industry-leading combination of high throughput, low latency, high QoS, and high endurance, the Intel® Optane™ SSD DC P4800X provides a new data storage tier that allows you to execute larger datasets faster than ever, while reducing system DRAM to significantly lower data center TCO.

Breakthrough Performance IOPS

5-8x

FASTER AT LOW QUEUE DEPTHS[1]

High Endurance

UP TO

2.8x

MORE TOTAL BYTES WRITTEN AT SIMILAR CAPACITY[2]

Predictably Fast Service QoS

UP TO

60x

BETTER AT 99% QoS[3]

Responsive Under Load Low Latency

UP TO

40x

FASTER RESPONSE TIME UNDER WORKLOAD[4]

ACCELERATE YOUR EXPERIENCE

The first breakthrough in non-volatile memory in over two decades, Intel® Optane™ technology bridges the gap between storage and memory, with higher endurance than NAND and increased density compared to DRAM.

MULTIPLE DESIGNS FOR MULTIPLE USE CASES

Because no two use cases are exactly the same and storage needs vary widely, Intel® Optane™ SSDs come in a variety of form factors to support data center demands.

2 Form Factors
Add-in card (AIC), half height, half length, low profile; U.2 2.5-inch

Intel® Optane™ Technology
Capacities up to 750GB

Up to 550/500k IOPS
4 KB random, queue depth 16, read/write: up to 550/500k IOPS

Latency (typical) R/W
<10µs

NVMe* Interface
Compatible with PCIe*

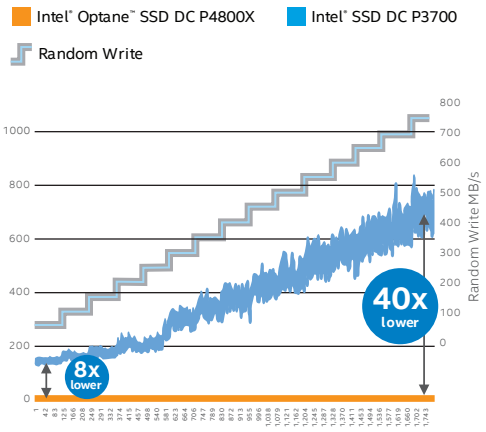
5-Year Warranty

For more infoı Ĭ Ģijĩ ļ ĭ visit – http://intel.com/optane

THE IDEAL CACHING SOLUTION

LOWER AND MORE CONSISTENT LATENCY

Average Read Latency Under Random Write Workload[5]



HIGHER ENDURANCE

Terabytes Written Specifications (TBW)[6]

Intel® Optane™ SSD DC P4800X — **30 DWPD**

Intel® SSD DC P4600 (3D NAND) — **3 DWPD**

MORE EFFICIENT

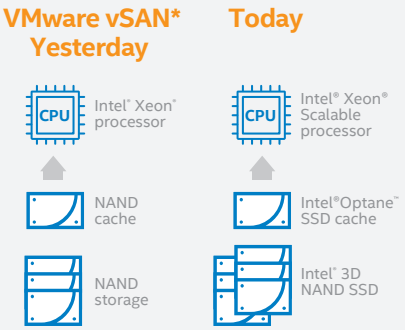
Cache as a % of Storage Capacity[7]

Intel® Optane™ SSD DC P4800X cache

Intel® SSD DC P4600 (3D NAND) cache

ACCELERATING THE CACHE TIER WITH INTEL® OPTANE™ SSD

VMware vSAN* Solution



UP TO **44%** LOWER COST/ TRANSACTION[8]

UP TO **3x** MORE VMs VS. NVMe* + SATA[8]

89% MORE TRANSACTIONS[8]

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.

[1] Common Configuration - Intel 2U PCSD Server ("Wildcat Pass"), OS CentOS 7.2, kernel 3.10.0-327.el7.x86_64, CPU 2 x Intel® Xeon® E5-2699 v4 @ 2.20GHz (22 cores), RAM 396GB DDR @ 2133MHz. Configuration – Intel® Optane™ SSD DC P4800X Series 375GB and Intel® SSD DC P3700 Series 1600GB. Performance – measured under 4K 70-30 workload at QD1-16 using FIO 2.15.

[2] Comparing projected Intel® Optane™ SSD 750 GB specifications to actual Intel® SSD DC P3700 Series 800 GB specifications. Total Bytes Written (TBW) calculated by multiplying specified or projected DWPD x specified or projected warranty duration x 365 days/year.

[3] Common Configuration - Intel 2U PCSD Server ("Wildcat Pass"), OS CentOS 7.2, kernel 3.10.0-327.el7.x86_64, CPU 2 x Intel® Xeon® E5-2699 v4 @ 2.20GHz (22 cores), RAM 396GB DDR @ 2133MHz. Configuration – Intel® Optane™ SSD DC P4800X 375GB and Intel® SSD DC P3700 1600GB. QoS – measures 99% QoS under 4K 70-30 workload at QD1 using FIO 2.15.

[4] Responsiveness defined as average read latency measured at Queue Depth 1 during 4k random write workload. Measured using FIO 2.15. Common Configuration - Intel 2U PCSD Server ("Wildcat Pass"), OS CentOS 7.2, kernel

[5] Responsiveness defined as average read latency measured at queue depth 1 during 4k random write workload. Measured using FIO 2.15. Common Configuration - Intel 2U Server System, OS CentOS 7.2, kernel 3.10.0-327.el7.x86_64, CPU 2 x Intel® Xeon® E5-2699 v4 @ 2.20GHz (22 cores), RAM 396GB DDR @ 2133MHz. Configuration – Intel Optane™ SSD DC P4800X 375GB and Intel SSD DC P3700 1600GB. Latency – Average read latency measured at QD1 during 4K Random Write operations using fio-2.15.

[6] Source – Intel Data Sheet: Random/JEDEC up to 2.9 DWPD (5 Years) / 21.7 PBW, sequential workload up to 4 DWPD (5 Years) / 29.2 PBW

[7] Source – Intel: General proportions shown for illustrative purposes.

[8] When comparing results from https://www.evaluatorgroup.com/document/evaluating-server-based-storage-performance-enterprise-workloads to https://www.intel.com/content/www/us/en/storage/evaluator-group-storage-paper.html. Previous configuration: Storage media: 1 x P3700 + 4 x Seagate 1TB 10K HDD, Performance: 80 IOmark-VM-HC, Price/Performance: $2048 / Iomark-VM-HC; Current configuration: Storage media: 2 x P4800X SSD + 4 x P4500 4TB SSD, Performance: 800 IOmark-VM-HC, Price/Performance: $237 / Iomark-VM-HC

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