



**INTEL[®]
EXPERIENCE
DAY**

ТВЕРДОТЕЛЬНОЕ НАКОПИТЕЛИ INTEL® ДЛЯ СЕРВЕРНОГО СЕГМЕНТА

Сергей Лысокобылка

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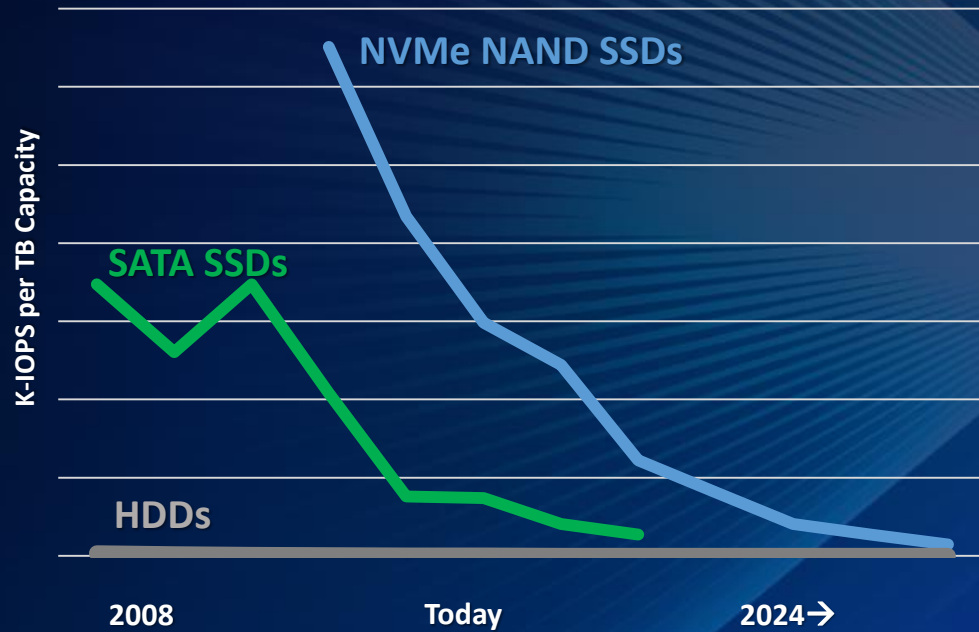
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Results have been estimated or simulated using internal Intel analysis or architecture simulation or modeling, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance.

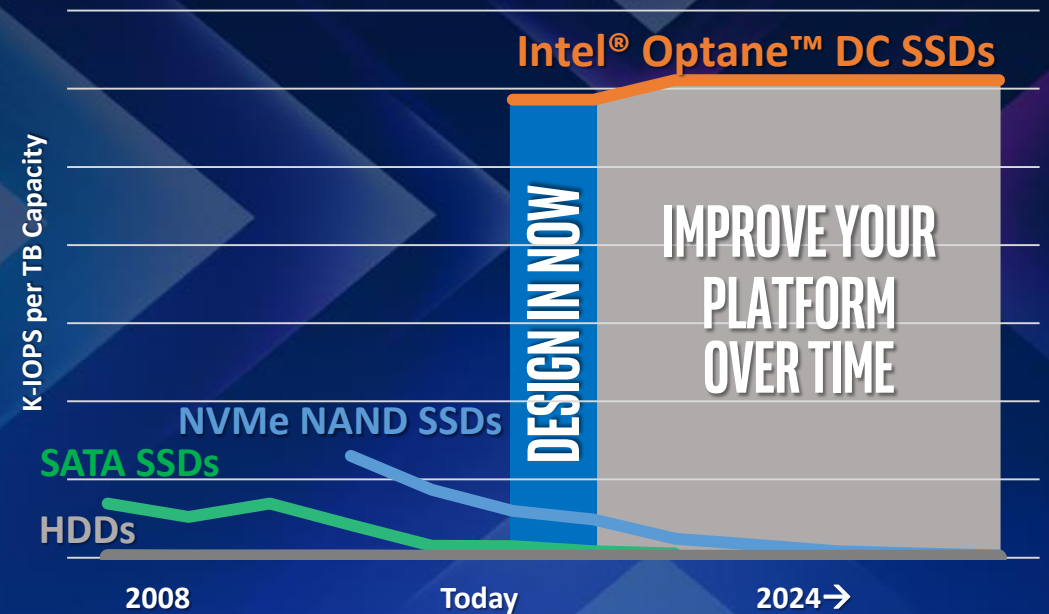
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DESIGN NOW FOR THE FUTURE OF STORAGE PERFORMANCE

IOPS/TB for Working Data 70/30 Read/Write Random



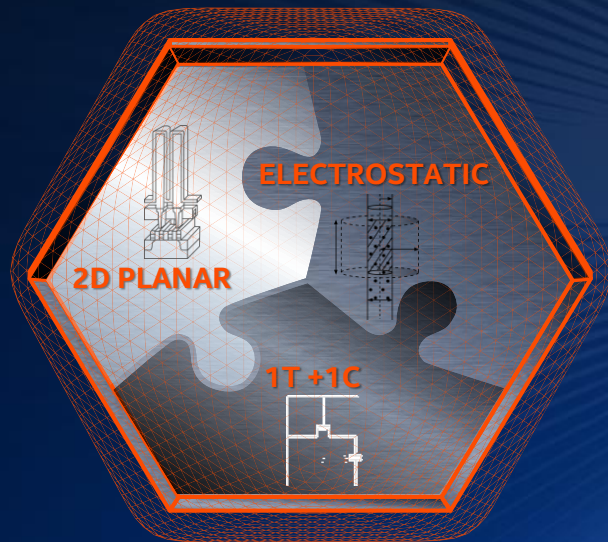
IOPS/TB Comparison Working Data 70/30 Mixed Workload



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TYPES OF MEMORY

DRAM



3D XPOINT™



3D NAND



MEMORY AND STORAGE HIERARCHY

MEMORY



CPU

CACHE

IN PACKAGE MEM

DRAM

CAPACITY GAP

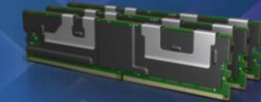
STORAGE

STORAGE-PERFORMANCE GAP

COST-PERFORMANCE GAP

INTEL OPTANE DC PERSISTENT MEMORY

INTEL DCPMM



INTEL OPTANE SSD DC P4800X WITH IMDT



INTEL OPTANE SSD DC P4800X

INTEL OPTANE DC SOLID STATE DRIVE

HOT STORAGE

INTEL SSD DC P4610

INTEL SSD DC P4510

WARM STORAGE

3D NAND SSD

INTEL SSD D-5 P4326

INTEL SSD D-5 P4420

INTEL SSD D-5 P4320



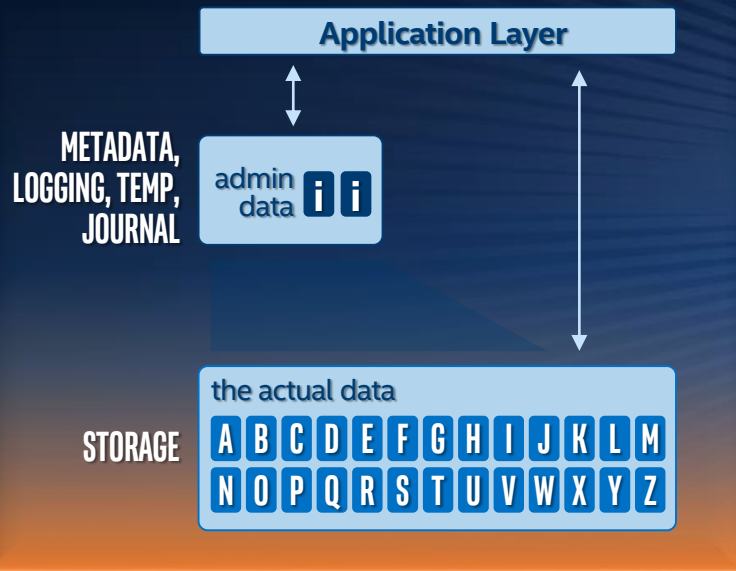
HDD-TAPE

COLD STORAGE

ACTIVATE DC STORAGE WITH INTEL® OPTANE™ DC SSDS

ACCELERATING

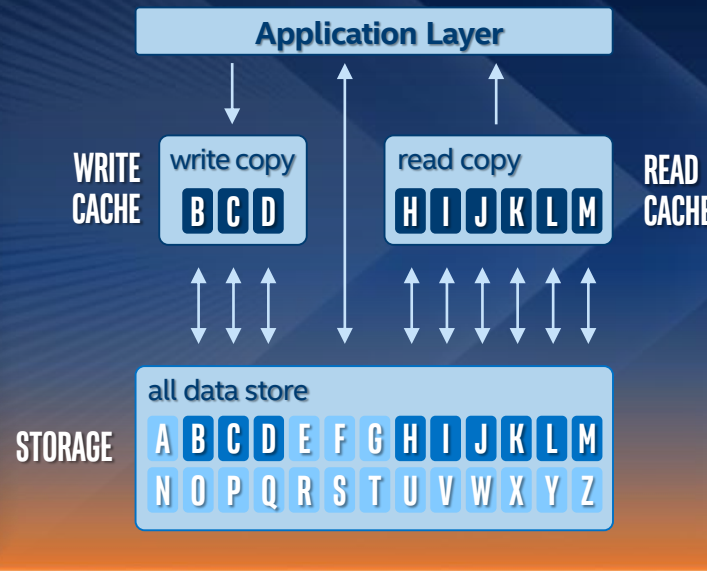
Store data about data



EX: Ceph, MySQL, MS-SQL

CACHING

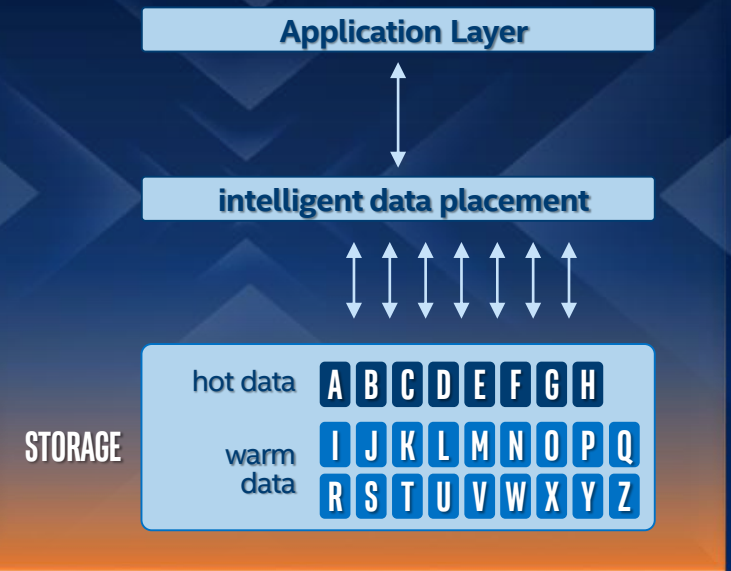
Temporarily copy or hold hottest data



EX: VMware vSAN, Microsoft Azure Stack HCI, Cisco HyperFlex

TIERING

Intelligently store hottest data



EX: Dell EMC PowerMax, IBM Spectrum Scale, Nutanix

Intel® Optane™ SSD DC P4800X. 1.5TB capacity used for ratio illustrative purposes.

Intel 3D NAND SSD. 8TB capacity used for ratio illustrative purposes.

INTEL® DC SSD FORM-FACTORS

M.2



80-110mm

⏻ 6-8.25W

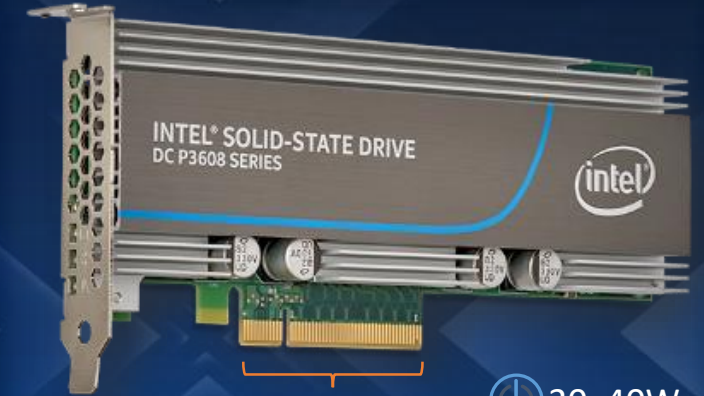
2.5"/U.2



7mm {  ⏻ 8, 10, 12W

15mm {  ⏻ 10 - 25W

ADD-IN-CARD



x8

⏻ 30, 40W




x4

⏻ 25W

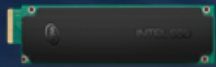
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INTEL® DC SSD FORM FACTORS TRANSITION

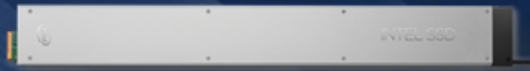
EDSFF*
FAMILY

Power (W) 

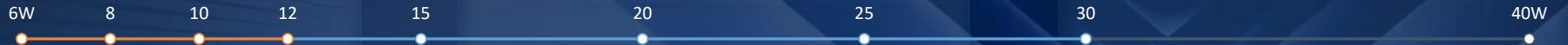
E1.S



E1.L 9.5mm



E1.L 18mm



CURRENT PCIe*
FORM FACTORS



Low Power NVMe*
M.2 80mm and 110mm
U.2 2.5in x 7mm



Server Performance NVMe*
Low profile HHHL x4 AIC
U.2 2.5in x 15mm



Server Performance NVMe*
Low profile HHHL x8 AIC

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INTEL® DC SSD PORTFOLIO

Short Name	
Intel® Optane™ DC SSD	Intel® Optane™ DC SSD Series Optane PCIe (Performance)
Intel® SSD D7	Intel® SSD D7 Series (Mixed workload and standard endurance NVMe/PCIe)
Intel® SSD D5	Intel® SSD D5 Series QLC PCIe (Capacity Optimized)
Intel® SSD D3	Intel® SSD D3 Series Legacy (SATA)
Intel® SSD D1	Intel® SSD D1 Series Value Performance (DC Entry Level PCIe/SATA)

Tiered by segment, interface, endurance and performance

This change impacts all products launching after **June 2018**. We will not change products that launched before that timeframe.

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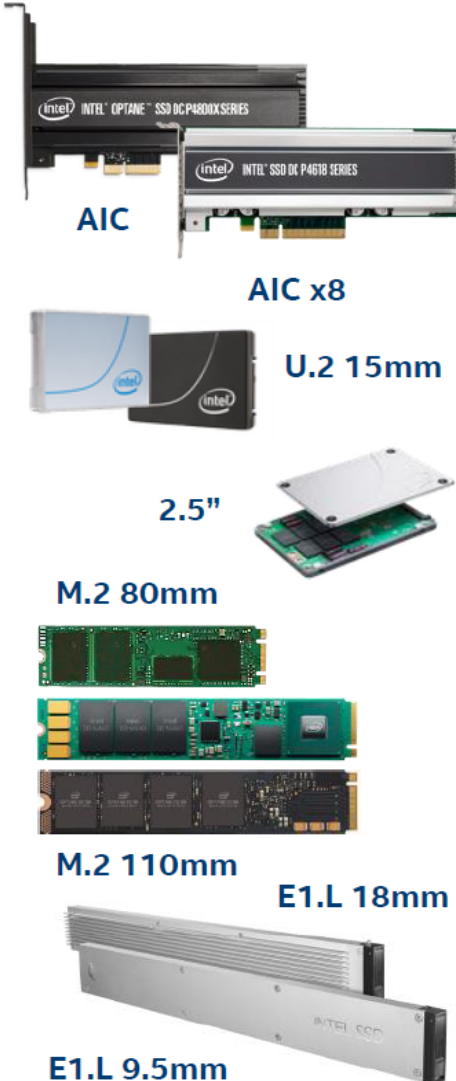
INTEL® SSD FOR DATA CENTER FAMILY

Series	Cell Technology	Interface	Endurance	In Production - Updated Oct'19	Form Factors & Capacities
DC	Intel® Optane™ Technology	PCIe 3.0	Very High	Intel® Optane™ SSD DC P4800X Intel® Optane™ SSD DC P4800X w/ Intel® Memory Drive Technology	U.2 15mm, AIC: 375GB, 750GB, 1.5TB
				Intel® Optane™ SSD DC P4801X	U.2 15mm: 100GB M.2 110mm: 100GB, 200GB, 375GB
				Intel® Optane™ SSD DC P4801X w/ Intel® Memory Drive Technology	U.2 15mm: 100GB M.2 110mm: 100GB, 375GB
D7	Intel® 3D NAND, TLC	PCIe 3.0	Mid	DC P4618	AIC x8: 6.4TB
				DC P4610	U.2 15mm: 1.6TB, 3.2TB, 6.4TB, 7.68TB
			Standard	DC P4511	M.2 110mm: 1TB, 2TB E1.S 5.9mm: 4TB
				DC P4510	U.2 15mm: 1TB, 2TB, 4TB, 8TB E1.L 9.5mm: 15.36TB
D5	Intel® 3D NAND, QLC	PCIe 3.0	Essential	D5-P4420	U.2 15mm: 7.68TB
			Value	D5-P4326	U.2 15mm, E1.L 18mm, E1.L 9.5mm: 15.36TB
				D5-P4320	U.2 15mm: 7.68TB
D3	Intel® 3D NAND, TLC	SATA III	Mid	D3-S4610	2.5": 240GB, 480GB, 960GB, 1.92TB, 3.84TB, 7.68TB
			Standard	D3-S4510	2.5": 240GB, 480GB, 960GB, 1.92TB, 3.84TB, 7.68TB M.2 80mm: 240GB, 480GB, 960GB
D1	Intel® 3D NAND, TLC	PCIe 3.0	Value	DC P4101	M.2 80mm: 128GB, 256GB, 512GB, 1TB, 2TB

■ 64-Layer, QLC, 3D NAND

■ 64-Layer, TLC, 3D NAND

■ Intel® Optane™ Technology



ПОИСК ИНФОРМАЦИИ О ПРОДУКЦИИ

Intel's Automated Relational Knowledge-base (ARK) – открытый ресурс продукции Intel

The screenshot shows the Intel Product Specifications website. At the top, there is a header with the text "PRODUCT SPECIFICATIONS" and a search bar labeled "Search specifications". Below the header, there is a section titled "Select your product" with six categories: Processors, Servers, Boards and Kits, Network & I/O, Memory and Storage, and Chipsets. Each category is represented by an icon and a text label. Below this section, there is a "Popular products" section with three columns of product names: 7th Generation Intel® Core™ i7 Processors, Intel® Xeon Phi™ Product Family x200, Kaby Lake, Intel® Xeon® Processor E7 v4 Family, Intel® High End Desktop Processors, Skylake, Intel® SSD DC P3100 Series, Intel® NUC Kits, and Knights Landing. At the bottom, there is an "Advanced Search" section with a description: "Filter processors, solid state drives, server, and RAID products by choosing features and specifications" and a blue button labeled "Find products by feature". A footer banner at the bottom of the page contains a mobile phone icon and the text: "Get Intel® ARK for your phone or tablet, featuring offline access. Available for Android®, iOS®, and Windows®."

СПАСИБО.

