



INTEL® OPTANE™ DC PERSISTENT MEMORY

Постоянная память vs Динамическая память

DISCLOSURES

Statements in this presentation that refer to Business Outlook, forecast, future plans and expectations are forward-looking statements that involve a number of risks and uncertainties. Words such as "anticipates," "expects," "intends," "goals," "plans," "believes," "seeks," "estimates," "continues," "may," "will," "would," "should," "could," and variations of such words and similar expressions are intended to identify such forward-looking statements. Statements that refer to or are based on projections, uncertain events or assumptions also identify forward-looking statements. Such statements are based on management's expectations as of February 9, 2017 and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in these forward-looking statements. Important factors that could cause actual results to differ materially from the company's expectations are set in Intel's earnings release dated January 26, 2017, which is included as an exhibit to Intel's Form 8-K furnished to the SEC on such date. Additional information regarding these and other factors that could affect Intel's results is included in Intel's SEC filings, including the company's most recent reports on Forms 10-K and 10-Q. Copies of Intel's Form 10-K, 10-Q and 8-K reports may be obtained by visiting our Investor Relations website at www.intc.com or the SEC's website at www.sec.gov.

No computer system can be absolutely secure. Intel technologies may require enabled hardware, specific software, or services activation. Performance varies depending on system configuration. Check with your system manufacturer or retailer.

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. For more complete information visit www.intel.com/benchmarks.

Cost reduction scenarios described are intended as examples of how a given Intel- based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

Performance varies depending on hardware, software, and system configuration. For more information, visit <http://www.intel.com/go/turbo>

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

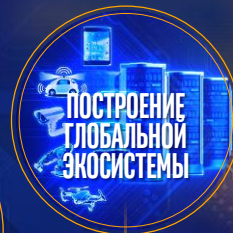
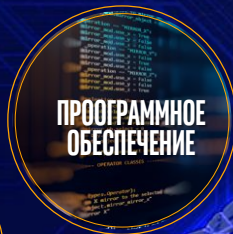
Intel, the Intel logo, Intel Xeon, Intel Xeon Phi, Intel Nervana, 3D XPoint and Intel Optane are trademarks of Intel Corporation in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

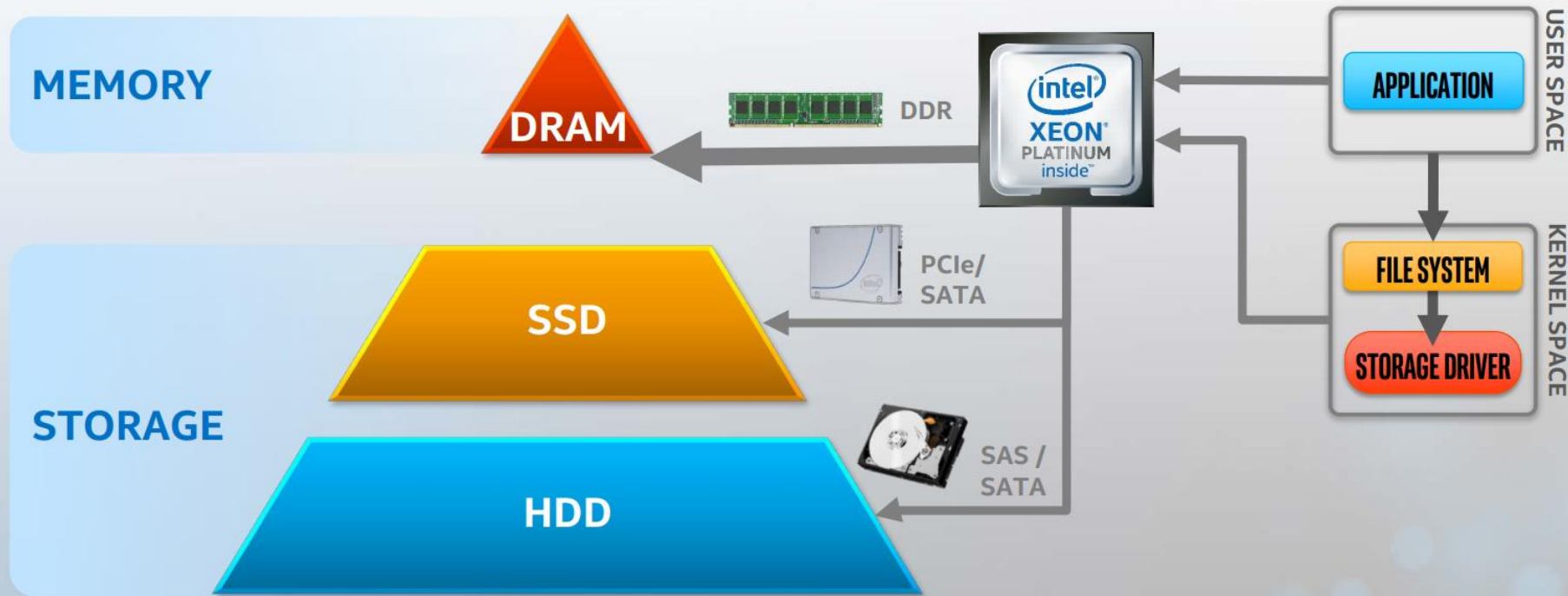
© Copyright 2018 Intel Corporation



ВОСХОЖДЕНИЕ К ВЕРШИНАМ ДАННЫХ



ГДЕ ЖИВУТ ДАННЫЕ?



КАК ЖИВУТ ДАННЫЕ?

ПАМЯТЬ

DRAM
ГОРЯЧИЕ

БЫСТРО, НО МАЛО. ДУШИТ ПО НАСТОЯЩЕМУ БОЛЬШИЕ IN-MEM ПРОЕКТЫ

ДИСКИ

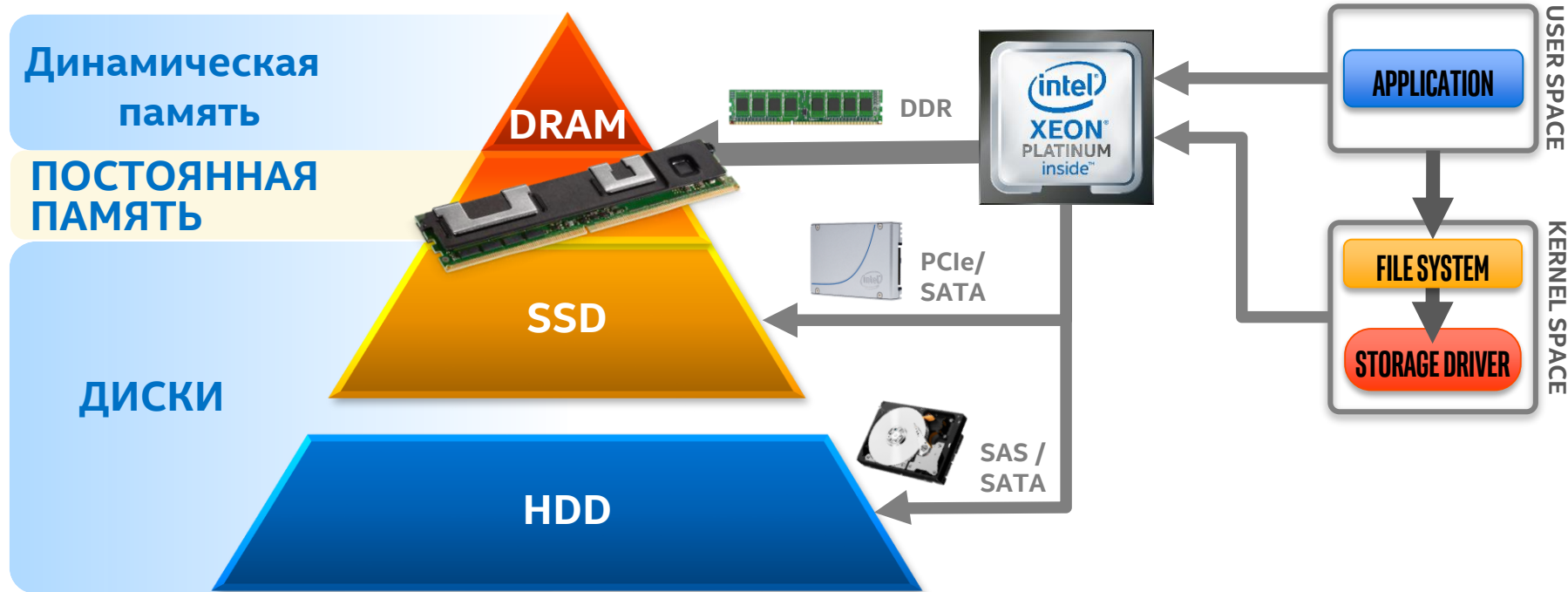
SSD
ТЕПЛЫЕ

ПРОИЗВОДИТЕЛЬНОСТЬ SSD ОГРАНИЧИВАЕТ УДАЛЕННЫЙ ДОСТУП К ДАННЫМ

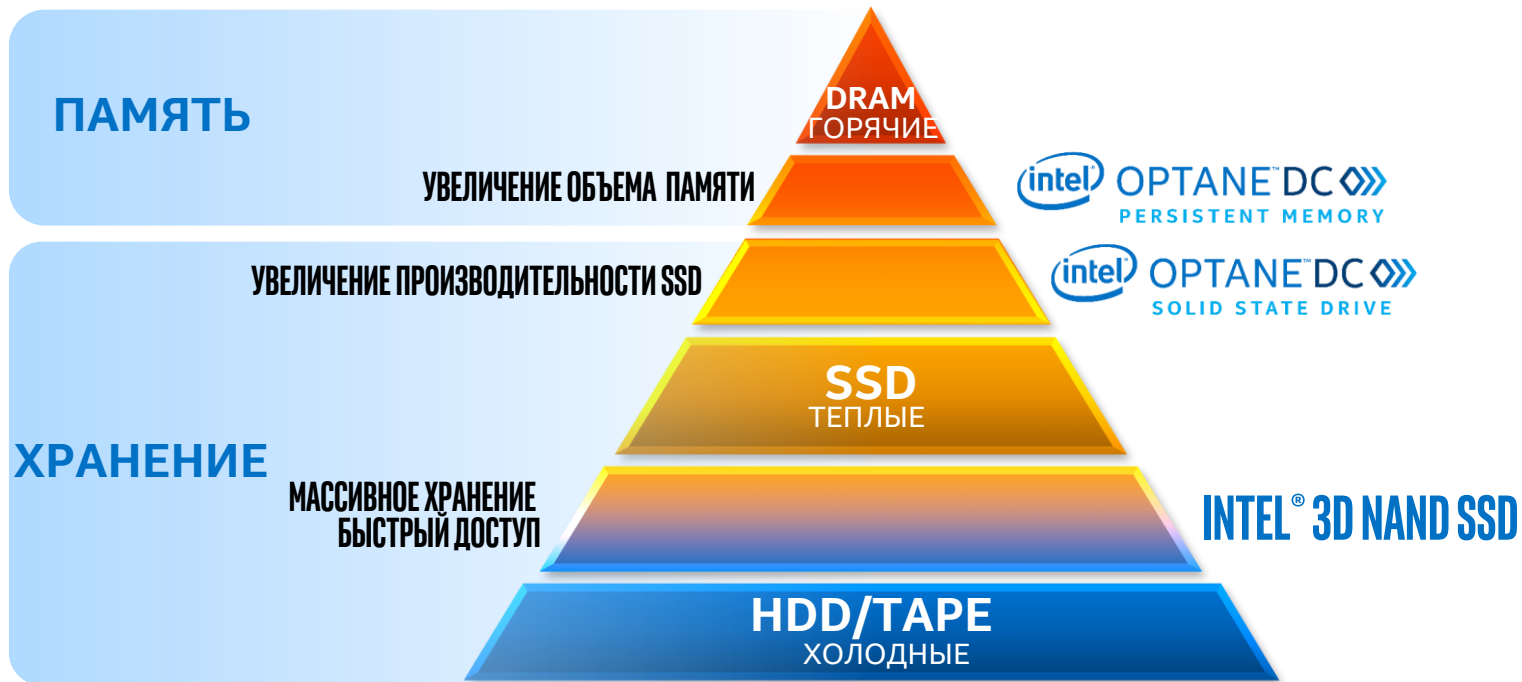
HDD/TAPE
ХОЛОДНЫЕ

ПРОСТО ХРАНИТЬ. СО СКЛАДА НЕ ВЫДАВАТЬ.

НОВАЯ АРХИТЕКТУРА ДЛЯ ДАННЫХ!



КОМФОРТНЫЕ УСЛОВИЯ ДЛЯ ДАННЫХ!



intel[®] OPTANE™ DC PERSISTENT MEMORY



Большая и Доступная память

128GB, 256GB, 512GB

Высокопроизводительное
хранилище

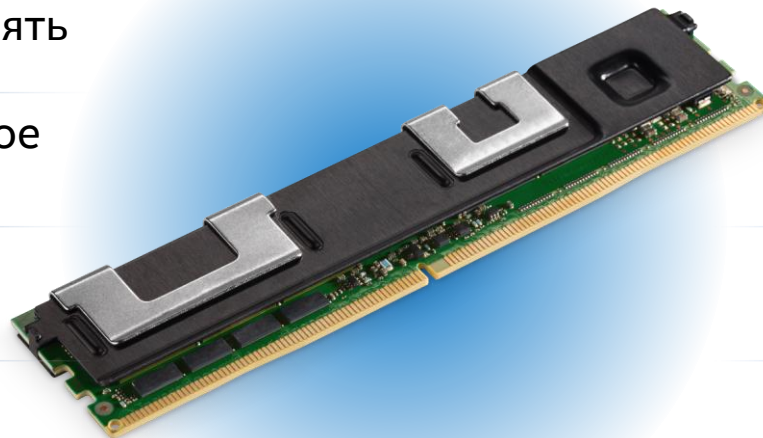
DDR4 DIMM

Прямой Load/Store

Безопасность

Энергонезависимая

Высокая надежность



ДОСТУПНА ДЛЯ ТЕСТИРОВАНИЯ

НОВЫЕ ВОЗМОЖНОСТИ

HYBRID CLOUD, IAAS & VIRTUALIZATION

**БОЛЬШЕ ВИРТУАЛЬНЫХ МАШИН
ЗА ТЕ ЖЕ ДЕНЬГИ**

TARGETING
UP TO **1.2X** MORE VMs
IN SIMILAR CONFIG

IN-MEM DB & DATA SERVICES

**ТЕРАБАЙТЫ ЭНЕРГОНЕЗАВИСИМОЙ
ПАМЯТИ**

TARGETING
UP TO **15TB** IN A FOUR
SOCKET CONFIG

FAST STORAGE

ОЧЕНЬ БЫСТРОЕ ХРАНИЛИЩЕ

TARGETING
UP TO **1.2X** DATA PERFORMANCE
PER \$ SPENT

IN-MEMORY DATABASES



HIGHER CAPACITY/LARGER DBS



DATA RELIABILITY/QUICK RECOVERY



PERFORMANCE OF MEMORY

MORE VIRTUAL MACHINES



INCREASED MEMORY
PER VM



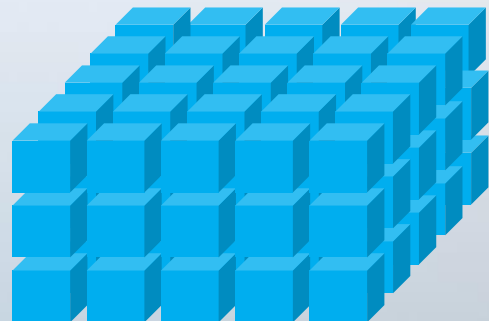
EFFICIENT INFRASTRUCTURE
WITH COST PARITY



EASE OF ADOPTION

ДАННЫЕ СТАЛИ БЛИЖЕ, РАБОТАТЬ С НИМИ СТАЛО ПРОЩЕ

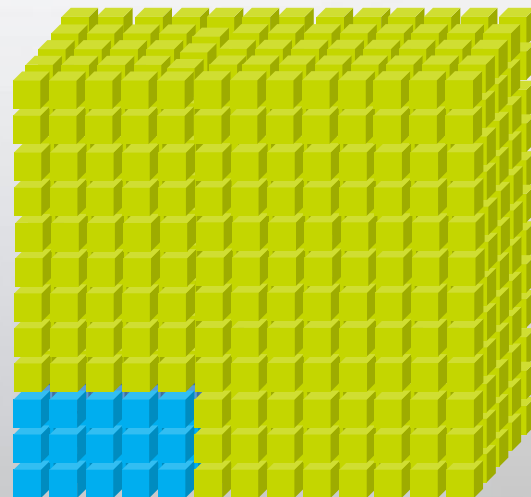
РЕЗУЛЬТАТ



9X MORE READ
TRANSACTIONS
(OPS/SEC)

11X MORE USERS
PER SYSTEM

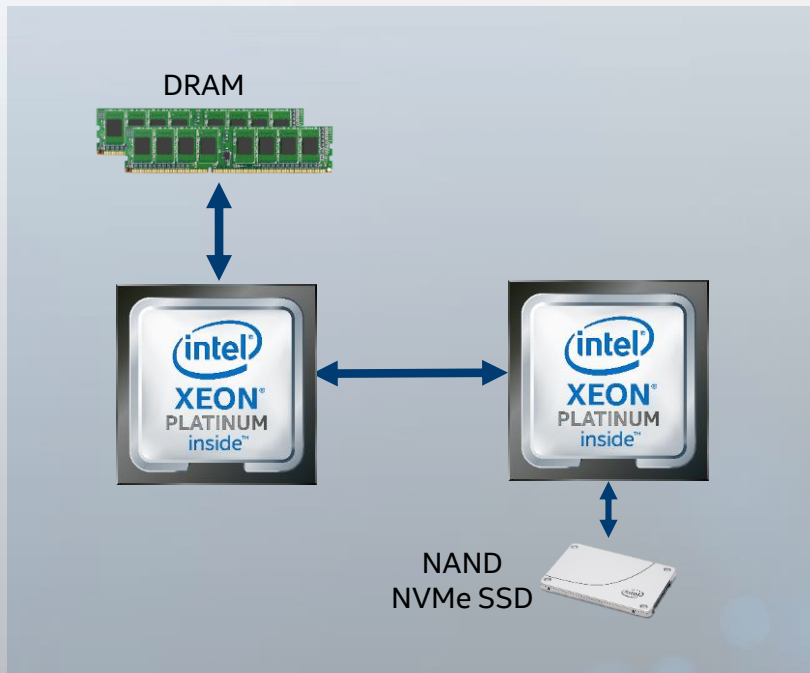
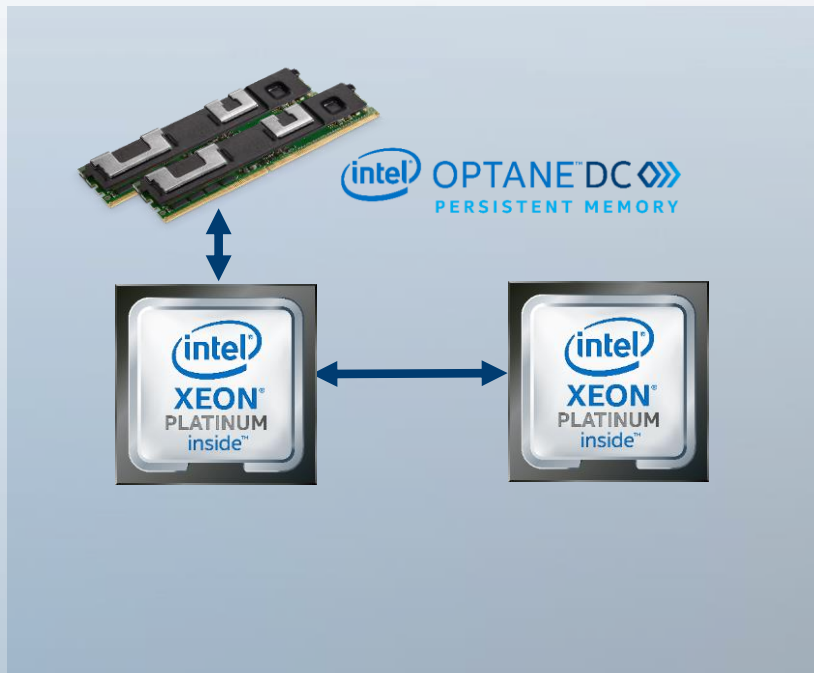
**VS. COMPARABLE SERVER SYSTEM WITH DRAM AND NAND
NVMe DRIVES WHEN USING APACHE* CASSANDRA-4.0**



 **OPTANE™ DC** 
PERSISTENT MEMORY

Results have been estimated based on tests conducted on pre-production systems, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance. 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. For more information go to www.intel.com/benchmarks.

НЕМЕДЛЕННАЯ ГОТОВНОСТЬ ДАННЫХ



ДОСТУПНОСТЬ: БЫСТРЫЙ РЕСТАРТ

МИНУТЫ



СЕКУНДЫ

БЫСТРЕЕ ПЕРЕЗАГРУЗКА

ПО СРАВНЕНИЮ С
ТРАДИЦИОННЫМИ
СИСТЕМАМИ

ТРИ 9КИ



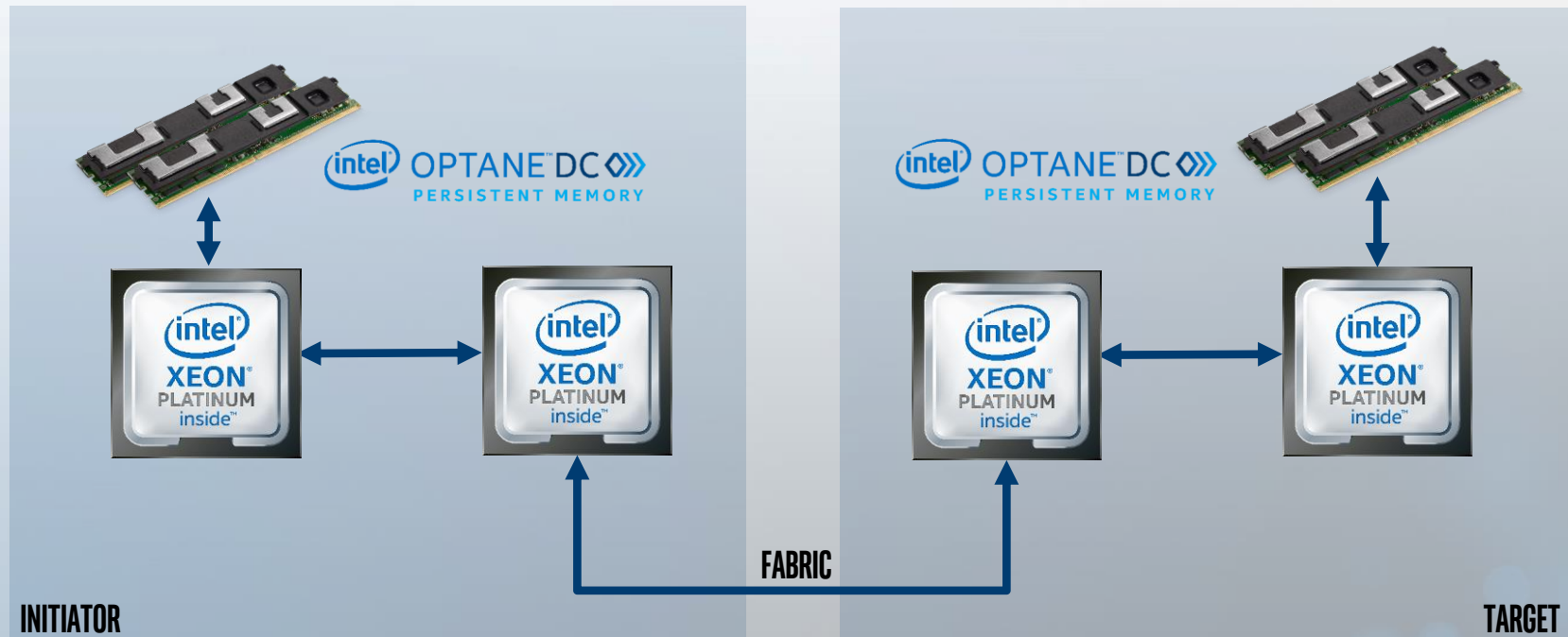
ПЯТЬ 90К

ВЫШЕ ДОСТУПНОСТЬ*

Results have been estimated based on tests conducted on pre-production systems, and provided to you for informational purposes. Any differences in your system hardware, software or configuration may affect your actual performance. 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. For more information go to www.intel.com/benchmarks.

PERSISTENT MEMORY OVER FABRICS (PMoF)

FOR DATA REPLICATION WITH DIRECT LOAD/STORE ACCESS

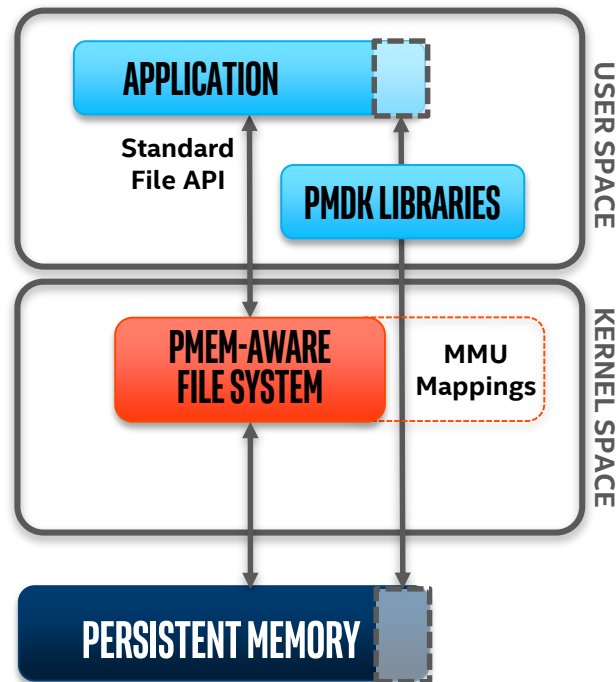


THE PERSISTENT MEMORY DEVELOPMENT KIT - PMDK

PMDK is a collection of libraries

- Developers pull only what they need
 - Low level programming support
 - Transaction APIs
- Fully validated
- Performance tuned

Open source & product neutral



INTEL DEVELOPER SUPPORT & TOOLS



Intel Developer Zone site now live

New features to support Intel® Optane™ DC persistent memory

- Intel® VTune™ Amplifier – Performance Analysis
- Intel® Inspector – Persistence Inspector finds missing cache flushes & more
- Free downloads available

Join the Persistent Memory Community

software.intel.com/pmem

