

PARTNER SOLUTION BRIEF

Intel® Optane™ SSDs
2nd Gen Intel® Xeon® Scalable Processors



Intel® Optane™ SSDs Boost Application Performance with Pure Storage

Challenge

With the flood of data pouring in from customers, the Internet of Things (IoT), and other sources, you need efficient and affordable ways to store, access, and analyze all that data. At the same time, IT architects must also maintain high availability for mission-critical applications—all in the face of limited or shrinking IT budgets. That means accelerating complex and real-time database transactions, without relying on costly CPU or DRAM upgrades. It means limiting or reducing SAP HANA licensing costs by shrinking the amount of data in memory—without sacrificing performance. And it means consolidating data by using shared storage, while still maintaining direct attached storage (DAS)-like performance.

Solution

Pure Storage FlashArray//X solutions with DirectMemory Cache help you address these challenges. The performance-optimized NVMe Express (NVMe) FlashArray//X solution uses an Intel® Optane™ solid state drive (SSD) to create a fast cache tier that accelerates performance, while helping to reduce costs and complexity.

In the FlashArray//X Purity operating environment, DirectMemory Cache software automatically directs reads in FlashArray//X90R2 or FlashArray//X70 (R2 or R3) controllers to DirectMemory Modules with the dual port Intel® Optane™ SSD DC D4800X. These modules plug directly into Pure's highest performance FlashArray solutions to provide low latency for performance-sensitive applications as part of a modular, upgradeable design, with no custom configuration or tuning needed.

Benefits

Pure DirectMemory Cache utilizes dual port Intel Optane SSDs to offer breakthrough performance with industry-leading response times for enterprise workloads. Benefits reported by Pure Storage include³:

- Large performance boost to database workloads, such as online transaction processing (OLTP) and online analytical processing (OLAP)
- Enhanced bandwidth to support larger workloads
- Redundant data paths to help provide the 24/7 data availability needed for mission-critical enterprise storage solutions
- Storage latency cut by up to 50 percent and reducing CPU utilization by up to 25 percent, while providing 100 percent NVMe and NVMe over Fabrics (NVMe-oF) performance, high density, and efficient shared storage



About Pure Storage

Pure Storage solutions enable software-as-a-service (SaaS) companies, cloud service providers (CSPs), enterprises, and public-sector organizations to deliver real-time, secure data to power mission-critical production, DevOps, and modern analytics in multi-cloud environments.

In 2019, Gartner named Pure a leader in the Gartner Magic Quadrant for Primary Storage,¹ and, for the fifth year in a row, Pure Storage has scored a certified Net Promoter Score (NPS) in the top 1 percent of industry business-to-business (B2B) scores.²



Where DirectMemory Cache Shines with Intel Optane SSDs⁴

The consistent, low-latency benefits of dual port Intel Optane SSDs and Pure DirectMemory Cache software are well suited to database workloads, including:

 **SAP HANA Native Storage Extension (NSE)** reduces the amount of data retained in memory and trims licensing costs while still delivering near-memory performance.

 **Oracle Database and Microsoft SQL Server** accelerates complex and real-time transactions, while shrinking CPU requirements and licensing costs.

 **Open source databases, including Apache Spark, MongoDB, Cassandra, and MariaDB** provide shared storage with direct-attached storage (DAS)-like performance.

Purity Operating Environment Delivers Data Protection, Management, and Scalability

The Purity Operating Environment delivers comprehensive, rich data services for your workloads. Purity also enables low-latency, all-NVMe DirectFlash Fabric storage with:

- Proven 99.9999 percent availability⁵
- Always-on quality of service (QoS)
- Efficient variable-block, global deduplication and compression, averaging 5:1 data reduction⁵
- AES-256 encryption at rest
- Full data-protection services offering disaster-recovery snapshots and replication, integration with other backup software, and active/active stretch cluster capabilities via the Pure Storage ActiveCluster solution
- The Pure Storage Evergreen Storage subscription model, which helps ensure data-in-place, non-disruptive improvements, enabling you to upgrade at any time, with full investment protection, using Evergreen Upgrade Flex to always access the latest Intel® Xeon® Scalable processor architecture

Learn More

Pure Storage FlashArray//X solutions: purestorage.com/products/flasharray-x.html

Intel® Optane™ SSDs: intel.com/optane



¹ Pure Storage. "Pure Storage named as a Leader in New Gartner Magic Quadrant for Primary Storage." September 2019. <https://investor.purestorage.com/news-and-events/press-releases/press-release-details/2019/Pure-Storage-Named-as-a-Leader-in-New-Gartner-Magic-Quadrant-for-Primary-Storage/default.aspx>.

² Pure Storage. "Demystifying Net Promoter Scores." March 2020. <https://blog.purestorage.com/demystifying-net-promoter-scores/>.

³ Source: Pure Storage internal testing.

⁴ Source: Pure Storage internal testing.

⁵ Pure Storage. "Pure Storage FlashArray//X." 2019. purestorage.com/content/dam/purestorage/pdf/datasheets/ps_ds_flasharray_03.pdf.

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 intel.com/benchmarks.

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