Everpure FlashArray//XL

Top-tier power for your most data-intensive apps

In today's complex IT environments, ultra-low-latency, highly transactional OLTP databases and OLAP analytics systems have shifted from niche solutions to essential drivers of business success. Everpure™ FlashArray//XL™ delivers the most efficient performance, scale, and reliability your business needs to stay ahead. FlashArray//XL meets the needs of today and beyond.

Addressing today's ever-changing high-performance workloads

Legacy storage arrays have been addressing growth by retrofitting innovation to squeeze more performance and capacity out of aging architecture. The trade-offs are clear: complex, power-hungry, and space-inefficient hardware resulting in sprawl. This sprawl results in higher virtualization TCO and management complexity. Additionally, workloads like high-performance databases require more performance with efficiency in order to manage spiraling operating costs without consuming additional rack space. FlashArray//XL, leveraging the Everpure Evergreen® Architecture and unified block and file platform, delivers performance, scalability, reliability, and efficiency with integrated intelligence, automated workload management, and cyber resiliency, reducing complexity and enhancing operational agility for data-intensive and virtualized environments.

Performance density, efficiency, and sustainability

Keep critical workloads at peak performance, efficiency, and sustainability. FlashArray//XL is designed to provide the highest performance density with a level of operational and management simplicity simply not possible with legacy storage. With Evergreen Architecture, FlashArray//XL has unmatched sustainability and efficiency, reducing the physical footprint as well as power and cooling requirements, all while delivering the performance required by the most data-intensive workloads.

DirectFlash® Shelf: Lets you add additional NVMe capacity beyond the FlashArray™ chassis. DirectFlash Shelf connects to the FlashArray storage via NVMe-oF protocol with RDMA over Converged Ethernet (RoCE), leveraging 100Gb-per-second Ethernet. The shelf maintains the ability to support different sizes of DirectFlash Modules as flash density improves.

DirectFlash Fabric: DirectFlash Fabric lowers network latency dramatically and enables enterprise-class reliability and data services via shared storage versus DAS. NVMe-oF enables massive optimization between the storage controllers and host over fast networking: Fibre Channel, RoCE, and TCP. DirectFlash Fabric delivers greater performance and efficiency gains, including offloading the host CPU.

Overview

- As low as 150µs latency
- 45GB/s throughput[4]
- Up to 9.4PB effective capacity[2]
- NVMe and NVMe-oF (Fibre Channel, RoCE, TCP)
- SMB and NFS

Performance density

- 3x more IOPS/RU over competitors[1]
- Up to 370TB/RU usable capacity

Highly available

- Proven 99.9999% availability
- Data-in-place, nondisruptive upgrades
- Built-in business continuity and disaster recovery

Simplicity

- Intelligent Control Plane with Everpure Fusion™ and Pure1®
- Unified REST API
- Self-configuring and self-healing

Database performance and leadership

Supercharge your critical data-dependent workloads, including financial services, e-commerce, and healthcare, with the highest performance density storage for OLTP, OLAP systems, and vector databases. Powered by the latest CPUs and memory, along with proprietary DirectFlash Modules from Everpure, FlashArray//XL provides unmatched performance density for ultra-low-latency, highly transactional workloads. Use it to power SQL Server, Oracle, and SAP HANA databases along with electronic health records (EHR) including Epic.

Built on our Evergreen Architecture, FlashArray//XL includes built-in, always-on data resiliency, simplified replication, and faster recovery times. Leave legacy systems behind by leveraging FlashArray//XL to gain end-to-end data confidence, with the performance and protection needed to drive your business to the next level.

High performance and availability

FlashArray//XL R5 features three times more IOPS per rack unit over running SQL Server over similarly configured competitive systems.[1] Sub-millisecond latency and 99.9999% uptime ensure fast, always-on databases that drive business forward. Decoupling storage operations and database operations ensures that storage bottlenecks are in the past, without compromising simplicity. Customers can achieve this without the burden of continuous manual tuning.

Robust data protection and agility

Critical capabilities including instant snapshots, ransomware remediation, and a full portfolio of data protection capabilities are included in FlashArray. This makes FlashArray ideal in scenarios requiring fast environment refreshes—rapid recovery and secure, agile development. The benefits can be recognized by all customers, independent of the size of their data.

Virtualization efficiency and ecosystem integration

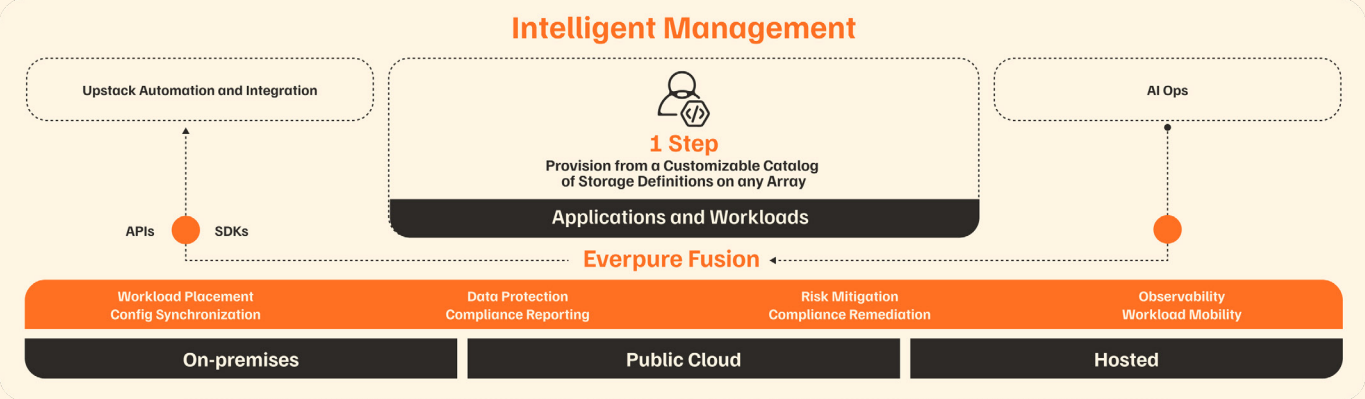
Stay ahead with a storage platform that has the flexibility to evolve with your virtualization strategy. Whether it's VMware, Red Hat OpenShift, Hyper-V, AWS Outposts, OpenStack, Nutanix, or more—Everpure Platform supports all paths forward for virtualization to support mission-critical workloads. Simplify and optimize your virtualized environment without compromising on performance for your most demanding workloads.

Eliminate the complexities of managing virtualized environments by consolidating infrastructure while shifting from infrastructure to workload management with Everpure Fusion™ workload automation and integration with VMware Cloud Foundation (VCF). Ensure virtualized workloads stay at peak performance without degradation with the highest performance density for VMs.

By leveraging the performance and management simplicity of FlashArray//XL, your company can move from infrastructure management to workload optimization, all while increasing performance and reducing complexity and costs.

Operational simplicity and agility

Elevate your storage management to cloud-like levels with the integration of Everpure Fusion, vSphere, and FlashArray//XL. While legacy vendors provide complex, multi-layered management, only Everpure offers the Everpure Unified Data Plane and Intelligent Control Plane to automate data management, orchestrate workflows end to end, and leverage proactive AIOps to prevent issues before they happen.



The Intelligent Control Plane native to the Everpure Platform is powered by Pure1® and Everpure Fusion. It delivers the power of AIOps and AI-powered insights while also putting the power of automation at your fingertips. Unlike other solutions, the simplicity and agility improves completely independent of the size of your fleet—meaning as you grow your Everpure Platform, management complexity does not increase. In fact, complexity decreases as features are delivered nondisruptively with Purity updates. No separate licenses or external tools are required.

By moving away from complex legacy systems, Everpure customers gain centralized control, automated operations, and faster time to outcomes, reducing complexity and risk while freeing teams to focus on innovation.

A monumental, evergreen evolution of the FlashArray//XL

Increased capacity and performance: The larger 5U chassis of FlashArray//XL is designed for today's higher-powered multi-core CPUs, which allows FlashArray//XL to increase performance over our FlashArray//X™ models. The FlashArray//XL R5 is the next generation of the product and provides significant advancements over the previous generation. The FlashArray//XL170 R5 delivers a 70% performance increase, and the FlashArray//XL130 R5 a 30% performance increase over their previous generations. The FlashArray//XL170 R5 also features more than twice the transactions per minute (TPM) over the previous generation FlashArray//XL170. Capacity has also increased in the new generation, with the FlashArray//XL170 R5 supporting 1.9PB raw capacity, and the FlashArray//XL130 R5 supporting 1.4PB. Evergreen Architecture allows a fully data-in-place, nondisruptive upgrade to the new generation, unique to Everpure.

Increased connectivity, greater reliability, and improved redundancy: FlashArray//XLR5 doubles the host I/O ports compared to FlashArray//X, for up to 32 ports per controller, and the FlashArray//XL model provides more expansion slots for configuration flexibility. It doubles the bandwidth for each slot, including full bandwidth for mixed protocols. FlashArray//XL utilizes multiple 200GbE RoCE links that are very robust to hot-plug and provide faster controller failover speed. The RoCE controller links also offer increased resiliency capabilities, including improved "cross-controller" high availability with a nearly three-times increase in bandwidth, more stability at high array load, minimal disruption during failover, and four power supplies that operate in an N+2 configuration.

DirectFlash Modules with distributed NVRAM: DirectFlash Modules include onboard distributed, non-volatile random-access memory (DFMD). Separate NVRAM modules are no longer required. With DFMD, the NVRAM capacity, NVRAM write bandwidth, and array capacity scale with the number of DFMDs, lifting the limit on write throughput.

DirectCompress Accelerator: FlashArray//XL ships with the DirectCompress Accelerator (DCA) card, increasing compression efficiency by offloading inline compression to a dedicated PCIe card. It ensures maximum compression rates, even when the system is under a heavy load, and stretches capacity to reduce overall storage costs and to extend the value of your FlashArray//XL. The newest generation DCAv2 card offers an enhanced buffering system that helps run compression jobs more efficiently, more engines per card to help parallel execution, and enhanced integrity checks for efficiency error detection during data block transmission.

Purity Turbo (FlashArray//XL190 R5 only): For read-heavy workloads needing the highest performance, FlashArray//XL190 R5 features Purity Turbo. The secondary controller will actively serve read I/O and handle noncritical workloads to reduce impact on production workloads.

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Technical specifications

	Capacity	Physical
//XL190 R5	Up to 9.4PB/8.3PiB effective capacity[2] Up to 2.5PB/2.22PiB raw capacity[3] Up to 6TB read cache	5–11U (including DFS) 2,635–3,455 watts (typical peak) 164lbs (74.3kg) fully loaded 8.7" x 18.9" x 29.7" chassis[5]
//XL170 R5	Up to 7.4PB/6.6PiB effective capacity[2] Up to 1.97PB/1.7PiB raw capacity[3]	5–11U (including DFS) 2,475–3,160 watts (typical peak) 164lbs (74.3kg) fully loaded 8.7" x 18.9" x 29.7" chassis[5]
//XL130 R5	Up to 5.5PB/4.9PiB effective capacity[2] Up to 1.464PB/1.3PiB raw capacity[3]	5–11U (including 2xDFS) 2,115–2,700 watts (typical peak) 164lbs (74.3kg) fully loaded 8.7" x 18.9" x 29.7" chassis[5]
DirectFlash Shelf	Up to 3.8PB/3.5PiB effective capacity[2] Up to 1,024TB/932TiB raw capacity[3]	3U 566–667 watts (typical peak) 90.9lbs (41.2Kg) fully loaded 5.1" x 18.9" x 29.7" chassis
Connectivity	• Fibre Channel • iSCSI/RoCE • NFS/SMB	Management onboard ports • 2 x 1Gb (RJ45) LOM per controller Other onboard ports (per controller) • 1 x RJ45 Serial • 1 x VGA • 2 x USB 3.0 I/O Supported expansion card types (rear, controller) • 2-port 10/25Gb Ethernet, NVMe/TCP, NVMe/RoCE • 4-port 10/25Gb Ethernet, NVMe/TCP, NVMe/RoCE • 2-port 100/200Gb Ethernet, NVMe/TCP, NVMe/RoCE • 2-port 8/16/32/64Gb FCP[6], NVMe/FC • 4-port 8/16/32/64Gb FCP[6], NVMe/FC
Performance	150µs latency 45GB/s throughput[4]	

Additional resources

- Learn more about the FlashArray Family.
- Learn more about Everpure Fusion.
- Explore the Everpure Platform.
- Read more about AIOps and Pure1.

[1] FlashArray//XL170 R5, HammerDB SQL Server TPCROC-C. | [2] Effective capacity assumes high availability, RAID, and metadata overhead, GB-to-GiB conversion, and includes the benefit of data reduction with always-on inline deduplication, compression, and pattern removal. Average data reduction is calculated at 5-to-1 and does not include thin provisioning. | [3] Calculated using raw label capacity. | [4] 512K 1:1 100% read. | [5] Some maximum capacity configurations may use Everpure DirectFlash Shelf or Pure Expansion Shelf. | [6] 64Gb FC support can be enabled via 64Gb SFP+ upgrade on the same HBA.

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