

SOLUTION BRIEF

Database Workloads at Massive Scale

Gain extreme performance for database workloads with FlashArray//XL.

We are living in an era of unprecedented data growth. According to [Forbes](#), the amount of data created, captured, copied, and consumed in the last decade has increased fifty-fold, from 1.2 to 59 trillion gigabytes. This growth rate is expected to continue and even accelerate throughout the next decade. Along with this exponential growth of data come the challenges of storing and managing it.

Data Gravity Challenges

Data has “gravity”—meaning that it can be costly and time-consuming to move terabytes around, whether it’s between servers or on the same server multiple times. And the bigger your databases are, the bigger the issue becomes.

Exponential growth challenges the ability of data professionals to deliver data solutions in a timely and effective manner while they try to meet corporate environmental standards. Data engineers are continually coming up against challenges exacerbated by the data gravity issue such as:

- Databases on different servers that support mixed databases, like an SQL Server on one server and MySQL on another
- Separated reporting and production servers for performance
- Sharding of databases to meet performance requirements

A [recent study](#) showed that in the next year mixed database workloads will be expanding in 85% of data centers, making this another example of how the issues are growing exponentially.



Improved Data Flexibility

Consolidate mixed databases and combine reporting and production databases.



Data Reduction

Industry-leading data reduction and compression.



Environmental Footprint

Consolidate workloads to simplify operations and reduce rack space. Reduced power consumption and cooling costs help meet green data center standards.

Driving Database Performance with Data Reduction and Low Latency

At Pure Storage, we understand the challenges around data gravity, and so we created [FlashArray//XL](#) to help enterprises harness the potential of expanding data sets. One of the best ways to solve a problem is to address the fundamentals; FlashArray//XL tackles the data gravity issues with:

- Industry-leading data reduction and compression that allows for faster replication rates
- Improved latency for consolidated workloads with volume prioritization for direct memory (Intel Optane), which means that you can give critical apps higher priority for the cache
- Enhanced capacity expansion over the //X model to address your most demanding database requirements

With a modernized foundation, FlashArray//XL can help you solve the most common challenges facing data engineers both now and in the future with dramatically improved capacity, next-level performance and scale, and a future-proof design that expands as your business grows.

Capacity Expansion for Consolidation

Capacity expansion enables increased consolidation of databases on a single server, eliminating the need to separate databases of differing types. This can speed reporting and applications that query multiple data sources. In situations where reporting databases were separated, they can now be combined again. For some organizations, this can improve not only the data gravity issue but also timeliness, as it will reduce the delay in reporting. For some workloads, it might be possible to have more timely reporting due to the ability to support additional users' direct access to production data.

For some organizations, this can mean solving performance issues with certain workloads. The expanded size of FlashArray//XL can handle the largest of workloads and the most demanding of performance requirements for latency, I/O operations per second (IOPS) and throughput, regardless of the database.

Environmental footprint: Consolidating more workloads on fewer arrays simplifies operations and reduces rack space requirements. Reduced power consumption and cooling costs help companies meet green data center standards. Pure understands the importance of efficiency. Pure solutions are efficient in space usage at all levels, from our data reduction to our usage of AI, to support the workload planner all contribute to the environmental reductions of our [AIOps](#) planning and support with [Pure1®](#). Using workload planner and hardware simulators that project up to 12 months in the future allow for maximum planning of scaling, cloning, and migration-type projects. These benefits help all levels of your organization meet corporate standards for green data centers through reduced power consumption and cooling costs to improve energy efficiency.

Data protection: Enterprise data protection doesn't have to be complex. Pure solutions help you address the most important aspects of data protection and eliminate the complexity of keeping your data safe. If you are looking for [business resilience over distance](#), metro distance [business continuity](#), or [data backup to the cloud](#), the improved performance will allow for faster replication rates. This means ensuring your protection at even faster rates. Data protection strategies designed for disasters, data corruption, or accidental deletions don't always hold up against [ransomware](#) attacks. SafeMode™ SnapShots help mitigate ransomware attacks by securing critical data from being altered or destroyed—and allows you to recover quickly from an attack.

Evergreen design: Pure Storage® [Evergreen Storage™](#) subscriptions deliver value to your organization with storage that is deployed once and stays modern with seamless hardware and software upgrades. Your Evergreen subscription includes all data services (including new features), controller upgrades on renewal, and on-demand upgrades with full trade-in credit. As your company grows, you can scale storage as needed—without downtime, performance impact, data migrations, expensive leases, or forklift upgrades. Evergreen simplifies everything about the data storage lifecycle. Imagine storage that just works, delivering you six nines of availability on FlashArray™—including upgrades, all while meeting your corporate goals for energy efficiency and environmental impacts.

Derive More Value with Pure Professional Services

Your IT team is delivering, but it is always expected to do more. Wherever you are in your IT technology journey, [Pure Professional Services](#) can help you fill gaps, assess technology, and develop innovation plans. We are experts in storage, multi-cloud, and data protection, and we have certifications in Oracle, Microsoft, VMware, Splunk, and many others. When you need more, our consultants join your project team to deliver innovation and results in today's complex IT environment.

Additional Resources

- Find out more in the [FlashArray//XL](#) datasheet.
- [Test drive](#) modern database storage today to see how easy it is to use.

purestorage.com

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