SOLUTION BRIEF

# Enhance Game Development Performance and Infrastructure

Leverage Pure Storage® solutions for rapid development and highly reliable, high-performance game infrastructure.

The unique demands of video game development and deployment can stress legacy systems. The game development lifecycle requires high-performance storage, whether block, file, or object. Easy automation and integration into container frameworks is critical. Pure provides storage and infrastructure solutions that support game development—from coding to testing to deployment.

## High-Performance Development at Scale

The game lifecycle begins with developers. As game complexity increases and dev team sizes grow and shift to more remote sites, continuous changes to source code put a strain on legacy storage systems. But development environments thrive on the massively parallel performance of a unified fast file and object (UFFO) storage platform, such as Pure Storage FlashBlade®. When used with development and source code management (SCM) tools like Perforce, Subversion, or IBM Rational ClearCase, teams enjoy faster workspace creation, rapid access to large files or many small files, and speedier build times.

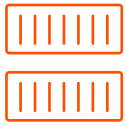
FlashBlade's unique RapidFile Toolkit (RFT) is a multi-threaded Linux utility that scales in performance with concurrent RPC calls and multiple TCP connections to FlashBlade.

The toolkit:

- Updates legacy operations, including file copy, change of ownership, file find, and others
- Uses parallel threads that are five to fifty times faster than traditional UNIX counterparts.
- Offloads a great deal of processing impact from the SCM tool.

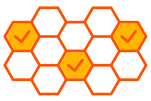
### Top Performance

For development, test, and production, leverage high-performance block, file, and object storage from Pure Storage.



### Container Friendly

Kubernetes-based game dev and deployment are optimized and protected by Pure's container friendly storage and software.



### Reliability Keeps Dev and Prod Running

Ultra-reliable, self-protecting storage and data protection solutions help keep developers productive and players on-line.

Development tools often require fast block storage for databases. The 100% NVMe high performance, low-latency block storage from FlashArray™ is the perfect complement to FlashBlade. FlashArray//X easily handles high transaction volumes and transaction logs.

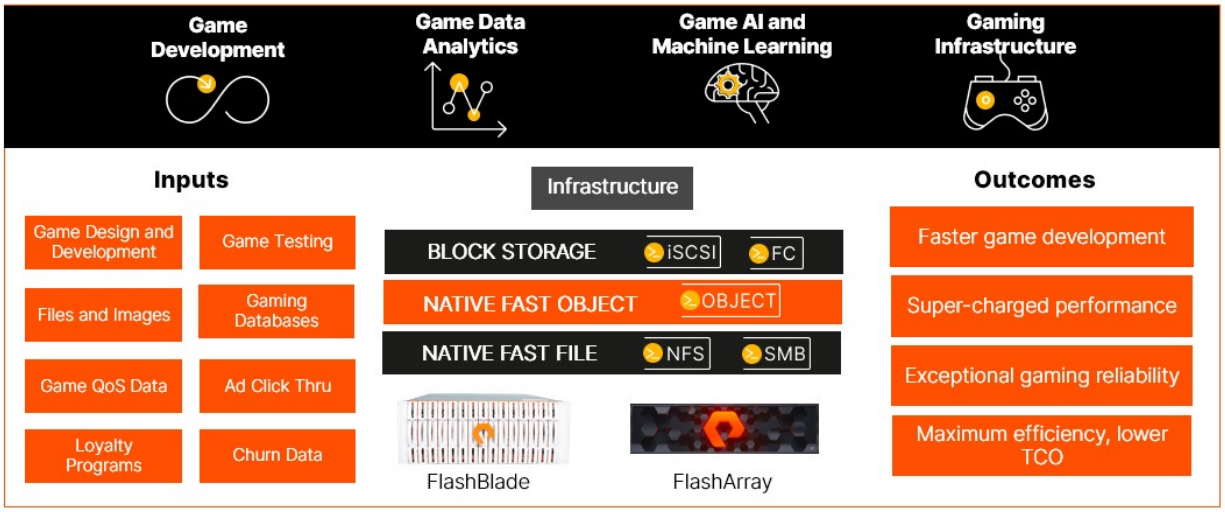



**Figure 1.** The gaming industry relies on Pure's high-performance, reliable infrastructure that can handle the wide range of different storage and data needs, including supporting game development, test, game analytics, and deployments.

Database checkpoints that bog down legacy systems and take hours to complete can be offloaded to FlashArray snapshots, which are instantaneous and create no performance impact. And Pure's proven 99.9999% availability for FlashArray helps ensure there are no interruptions to development efforts.

### Game Analytics and Machine Learning

Gamer activity generates data that can be monitored and analyzed for valuable insights in areas like quality of service analysis, customer value modeling, subscriber churn analysis, customer segmentation, and more. Revenue-enhancing analytics can focus on ad click-through and real-time ad analysis.

FlashBlade is ideal for driving game analytics and machine learning. With support for both file and object, plus linear capacity/performance scaling by adding more blades, FlashBlade has the horsepower needed to deliver rapid insights that improve the gaming experience and maximize revenue potential. And since FlashBlade can grow to petabyte scale, the same infrastructure can support both development and analytics, with a single management framework.

## Low-latency, Responsive Gaming Infrastructure

After dev and test are complete, online games need to move into production. Slow performance and lag create a poor user experience. Pure provides high-performance, all NVMe storage that helps ensure your customers are happy and continue to play. Further, Pure's industry-leading data reduction and efficiency drive down infrastructure costs for power, rack space, and cooling. One top-ten gaming industry user that deployed Pure FlashArray//X for a massive online gaming environment saw consistent sub-1ms latency while enjoying steady 2.7:1 data reduction for their Microsoft SQL instances.

### All-flash Everywhere: High-density Flash Storage

Not all data types require the ultimate in performance. Game development can involve billions of files, such as sound clips, JPEGs, Microsoft Office documents, PDFs, videos, and more. But while ultra-low latency isn't needed for this data, the drawbacks of disk and hybrid systems are clear. Too much rack space and power consumption, and sluggish performance.

Pure solves this problem with FlashArray//C, a high-density, high capacity QLC based all-flash system that delivers flash performance and efficiency at the cost of disk. And since FlashArray//C uses the same software stack as the high-performance FlashArray//X, it fits easily into automation and data protection schemes.

### Resilient Storage and Data Keeps Users Online

Whether used for game development, data analysis, or player infrastructure, storage uptime and data recoverability are critical. The Pure Storage portfolio of products is optimized for rapid data recovery and mitigation against ransomware. Fully symmetrical, active-active replication delivers RPO zero and transparent failover for RTO zero, helping keep gamers online. Pure's rapid recovery solutions augment backup vendors, including Commvault, Veeam, and Veritas. If you are looking to fully replace your backup environment, Pure FlashRecover™, Powered by Cohesity is the industry's first jointly architected, all-flash modern data-protection solution that delivers accelerated backup and rapid recovery at scale. And for protecting Kubernetes environments, Portworx® provides both backup and disaster recovery features that protect the entire application—data, application configuration, and Kubernetes objects—with a single click.

## Container-centric Solutions Deliver Gaming at Scale

The gaming industry is rapidly moving to Kubernetes and containers for game dev and deployment. Containers are used extensively for multiple purposes: game engines, monitoring, load balancers, graphs and reports, logging, etc. They enable faster game development and roll out of new features that keep users excited. In addition, containers scale to meet the demands of global gaming environments that host millions of players.

But legacy storage infrastructures aren't well designed to handle the unique needs of containers. Only Portworx provides a fully integrated solution for persistent storage, disaster recovery, security, data protection, cross-cloud and data migrations, and automated capacity management for Kubernetes apps. Portworx simplifies operations while keeping critical user data protected via encryption, data resiliency services, role-based access control, and, when needed, recovery from Portworx backups.

Game developer Roblox uses Portworx to support an environment of 70 million gamers worldwide. As Rob Cameron, Principal SRE, Roblox, noted: "Portworx is an important part of what we do to simplify our infrastructure. In case of an attack, we can easily recycle and rebuild the entire environment including all of the game servers within an hour or less. If there's an issue, I know Portworx is going to keep me safe and secure and, most importantly, make sure my player data isn't lost."

And Portworx is uniquely integrated with both FlashArray and FlashBlade. Whatever your storage needs are—block, file, or object—Pure Storage has the ideal container solution.

## Deliver Continuous Innovation and Optimization

The gaming landscape is constantly evolving, and so is your business. With Pure Storage, you win with a data storage solution that gets better over time. With Evergreen™, you can simplify the storage management lifecycle and lower TCO by more than 50% compared to traditional forklift upgrades.

The Evergreen Storage™ subscription model eliminates expensive refreshes and offers seamless, rapid upgrades and expansion, without disruption. This keeps players online and developers working even during controller updates. All software features are included with no additional license fees.

The data storage requirements that come with a modern gaming infrastructure can seem daunting, but Pure as-a-Service™ gives you the storage you need when you need it. With Pure as-a-Service, you're billed on actual consumption, so you can pay as you go. Block, file, object, and Kubernetes storage services can be deployed to meet your infrastructure needs. This is exceptionally valuable when future storage needs are difficult to predict based on constantly changing game market trends. With Pure as-a-Service, you don't have to worry about either over-buying storage and wasting funds, or under-buying and facing a storage capacity crisis.

## Develop and Deploy at Scale

Pure Storage provides video game developers with a Modern Data Experience™ that helps overcome the infrastructure challenges of game development and deployment at scale while taking advantage of the opportunities they present. With exceptional performance, a pay-per-use consumption model, container-friendly data services, and easy programmability, gaming industry users get the benefit of faster development cycles, improved operational costs, simplified data management, and highly reliable infrastructure. Discover what Pure's high-performance, reliable, easily programmable solutions can do for your gaming development and infrastructure.

## Additional Resources

- Read about digital asset management with Perforce.
- Test drive FlashArray//X and FlashBlade to see for yourself how easy they are.
- Download a free trial copy of Portworx for Kubernetes storage management and protection.





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