

SOLUTION BRIEF

Pure Storage Solutions for Automakers

Modern storage to meet the needs of a digitizing industry.

The Industry 4.0 wave of digitized production is impacting every aspect of the automotive industry. While autonomous driving gets the most attention, the impact is systemic, ranging from product planning to design, engineering, and finally to the manufacturing process and factory floor. Connected “everything” and intelligent customer interactions improve the customer experience. Profitability is enhanced through supply chain optimization and deep analytics around financial risk, fraud, and cybersecurity.

These changes tap the power of digital transformation and cloud-native application development for faster innovation and a competitive edge, but the complexities of legacy storage are holding the industry back. As a result, many projects require a completely new IT infrastructure to move into the new era of intelligence.

Performance, Simplicity, and Efficiency for the Auto Industry

With our innovative, cloud-ready solutions and the best user experience in technology, Pure Storage® is your partner in transforming data into powerful outcomes. We can help you deliver on the promises of key automotive use cases:

- **Autonomous vehicles (AV):** Everything from agriculture to transportation will be revolutionized by driving autonomy. As the flagship use case for digital transformation, AV development demands intensive performance to handle data collection, training, simulation, and other workloads.
- **Connected everything:** As connections increase exponentially at all levels—the factory, the vehicle, the dealer, and the customer—relevant data will flow at increasing rates. Mining this data for insights and actions requires maximum performance and scale and developing connected applications requires the flexibility and rapid delivery of containerized workloads and microservices.



Automotive AI

New automotive use cases are being driven by AI and analytics. Pure offers the easiest and most performant storage for powering AI.



Fast Matters

Accelerate your critical database and VMware workloads with minimal latency, robust performance, and proven resiliency.



Greener Storage

Zero emissions and sustainability are key goals for automakers. Pure is a leader in high-density, energy efficient data storage.

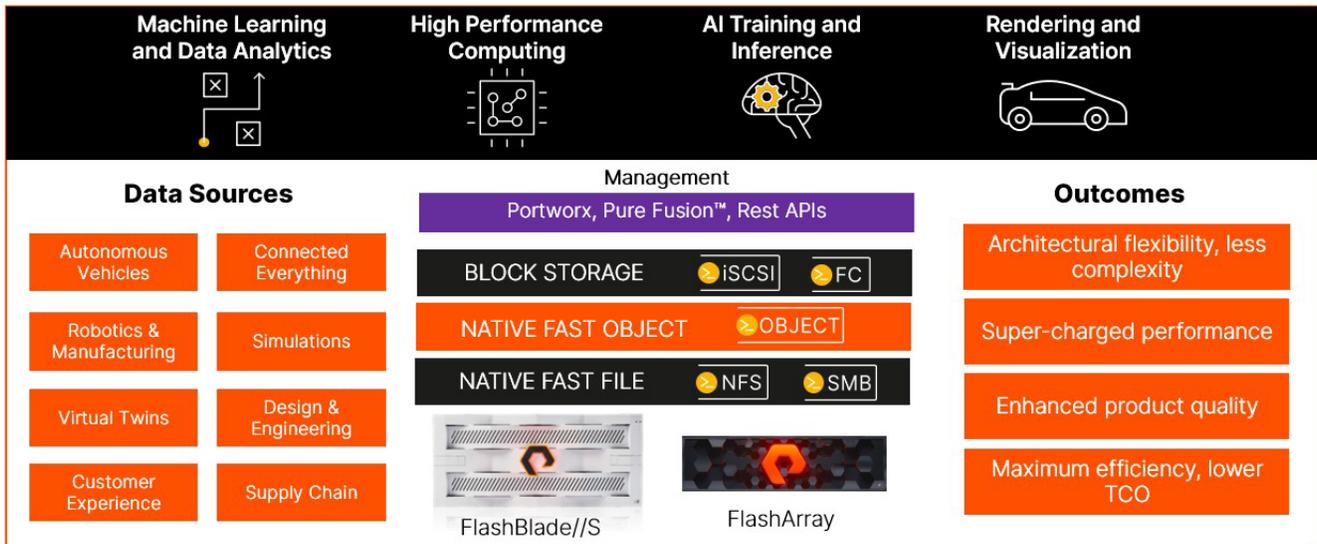


Figure 1: Pure offers a complete set of block, file and object storage solutions that are ideally suited for all the different data sources prevalent in the automotive industry.

- **Smart manufacturing and robotics:** Data science can revolutionize quality inspection to reduce recalls, and power predictive maintenance. It can also help optimize energy utilization and drive down costs.
- **Customer experience:** Automotive sales are undergoing an omni-channel revolution. The vehicle-buying journey includes hundreds of digital touchpoints, generating millions of data points to be collected and analyzed. New frontiers are opening in customer experience, including intelligent interaction (e.g., conversational AI) and customer targeting with dynamic pricing and offers that make automakers more competitive.
- **Design and engineering:** Computational solid mechanics, computational fluid dynamics and computational electromagnetics are foundational design areas that are optimized by GPUs and fast, scalable storage.
- **Zero emissions and sustainability:** Zero emissions goals are increasingly important not only in the final product, but also in the production process. Digital transformation delivers more efficient designs and production strategies for electronic vehicles, while also allowing the IT infrastructure to dramatically decrease power consumption.

Welcome to Modern Data Storage for Automakers

Pure Storage is the partner you need to evolve your data infrastructure to meet the goals of Industry 4.0. Pure enables a next-generation, API-driven operating model to support the complex, dynamic applications that will keep you competitive for years to come. Data storage is a diverse topic that spans a range of disciplines and discussions. We've broken it down into four critical areas:

Modern AI Data Architecture Built for Automakers

Artificial intelligence (AI) and analytics are the driving force behind many of the fastest expanding automotive use cases.

With native support for both file and object (S3) workloads, Pure Storage [FlashBlade//S™](#) is the “engine” for processing data in an AI-driven automotive industry. The scale-out metadata architecture in FlashBlade//S handles tens of billions of files and

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objects with maximum performance. It's a platform built to consolidate data silos and eliminate serial bottlenecks so you can focus on what matters most: delivering insights to the business.

AIRI//S™ is a complete [AI-ready infrastructure](#), architected by Pure Storage and NVIDIA to extend the power of NVIDIA DGX A100 systems. AIRI® offers automakers a simple and fast infrastructure to meet their AI demands at any scale.

FlashArray//C™ is the ideal [high-capacity all-flash array](#) for handling the massive data volumes required for AI projects.

High-performance, Low-latency Data Access

Auto manufacturers are dealing with more data than ever before. You need high performance and highly available storage paired with intelligent management to succeed at this new level of scale. Give your business the responsiveness, capacity, and speed it needs with Pure Storage.

FlashArray//XL™: The answer for your [most demanding workloads](#). It's designed for performance at scale, delivering latency as low as 150µs and throughput as high as 36GB/sec. This is performance fit for massive database workloads such as [SAP/SAP HANA](#) or [Oracle](#), or tens of thousands of virtual machines (VMs). Industry-leading dedupe and compression algorithms, combined with exceptional density, enable massive space, power, and cooling savings.

FlashArray//X™: The all-NVMe architecture of FlashArray//X provides [low-latency storage](#) suitable for most Tier 0 and Tier 1 workloads. Proven 99.9999% availability, including maintenance updates, keeps your vital services running.

FlashArray//C™: For less performance-sensitive workloads, the all-QLC [FlashArray//C](#) delivers cost economics that eliminate the need for hard disk drives and hybrid arrays. Experience more speed and lower latencies plus significant power savings compared to disk-based systems.

Simple Design, Deployment, and Use

Modernizing your infrastructure shouldn't stop at storage. A modern data architecture also needs smart storage management. Pure helps you extract maximum value from your data while reducing complexity and expense.

Pure 1®: Storage management from [Pure1](#) delivers critical information about the health and functionality of your entire stack, right down to each VM. The Pure1 platform provides cloud-based management and effortless predictive support with full-stack analytics and the AI-driven power of [Pure1 Meta®](#).

Pure Cloud Block Store™: Run your applications seamlessly across your on-premises, hybrid-cloud, and cloud environments with consistent enterprise data services, resiliency, and APIs. [Pure Cloud Block Store](#) is a public-cloud instance of FlashArray™, available in [AWS](#) and [Microsoft Azure](#), that uses the same software stack and is operationally identical to your data center FlashArray. This enables cloud use cases such as easy workload migration, disaster recovery, and DevTest with elastic cloud resources.

Continuous Innovation and Optimization

The automotive landscape is constantly evolving. A modern storage solution should meet your needs today and tomorrow, and with Pure Storage, you benefit from a data storage solution that gets better over time.

Simplify your storage management lifecycle and lower TCO by more than 50% compared to traditional forklift upgrades with Evergreen™. The [Evergreen Storage™](#) subscription model eliminates expensive refreshes and offers seamless, rapid upgrades and expansion, without disruption. Get modern storage with the freedom to upgrade, expand, and continuously innovate. All software features are included with no additional license fees.

Storage buying patterns are also changing. Since projects can spin up or be cancelled with little notice, it's very difficult to predict storage consumption year to year. The result is either over-buying and wasting budgets, or under-buying and facing resource constraints that delay projects. With Evergreen//One™ you get the storage you need when you need it. [Evergreen//One](#) bills on actual consumption so you can pay as you go, and Pure handles the equipment. Block, file, object, and Kubernetes storage services can be deployed to meet your infrastructure needs.

Additional Resources

- Read more about [high performance AI for automakers](#) with NVIDIA.
- Read the [AIRI reference architecture](#) and NVIDIA performance benchmarks.
- Read how the Mercedes-AMG Petronas Motorsport team [wins with Pure](#).
- Read how [NavInfo](#) uses AIRI for their autonomous vehicle navigation system.
- Learn how Pure helps support your [environmental and sustainability mission](#).

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