

SOLUTION BRIEF

AIRI//S: High-performance AI for Automakers

Modern AI infrastructure to accelerate automotive, end-to-end GPU workflows.

Automakers are increasingly relying on artificial intelligence (AI) to deliver new services, drive more value from their engineers, solve specific business problems to create tangible value, and more. However, fragmented data landscapes and outdated legacy systems are slowing adoption. As a result, many AI projects require a completely new infrastructure. The complexities of legacy solutions are holding the automotive industry back from maximizing value. AIRI//S™ is the simple, easy-to-deploy solution automakers need.

AI-at-scale Made Simple and Fast

AIRI//S is the latest evolution of the industry's first complete AI-ready infrastructure. Architected by Pure Storage® and NVIDIA and powered by the latest NVIDIA DGX systems and Pure Storage FlashBlade//S™, AIRI//S is a cutting-edge, disaggregated, and modular scale-out storage platform for unstructured data. The AI solution is simple to use right out of the box, enabling you to reap the benefits of AI right away by delivering a simple, fast, and future-proof infrastructure to meet the demands of automakers at any scale. Plus, the significant power savings of FlashBlade//S mean you have more rack power to devote to GPUs.

Maximum Performance for Key Automotive Use Cases

The combination of NVIDIA DGX A100 MiG systems with the massive parallelism of FlashBlade//S delivers maximum performance for key automotive use cases.

Autonomous vehicles (AV): Everything from agriculture to transportation will be revolutionized by AV. As the flagship use case for AI, AV development demands intensive performance to handle data collection, training, simulation, and other workloads.



AIRI//S Technology Stack

- Pure Storage FlashBlade//S
- NVIDIA DGX systems
- NVIDIA Spectrum and Quantum1 networking
- Software includes: DGX software stack, Purity//FB OE, Pure1® Management, Pure RapidFile Toolkit.



AI Built for Automotive

- Designed for vital automotive AI workflows
- Perfect for autonomous driving, digital twins, manufacturing optimization, conversational AI, policy and planning software, etc.

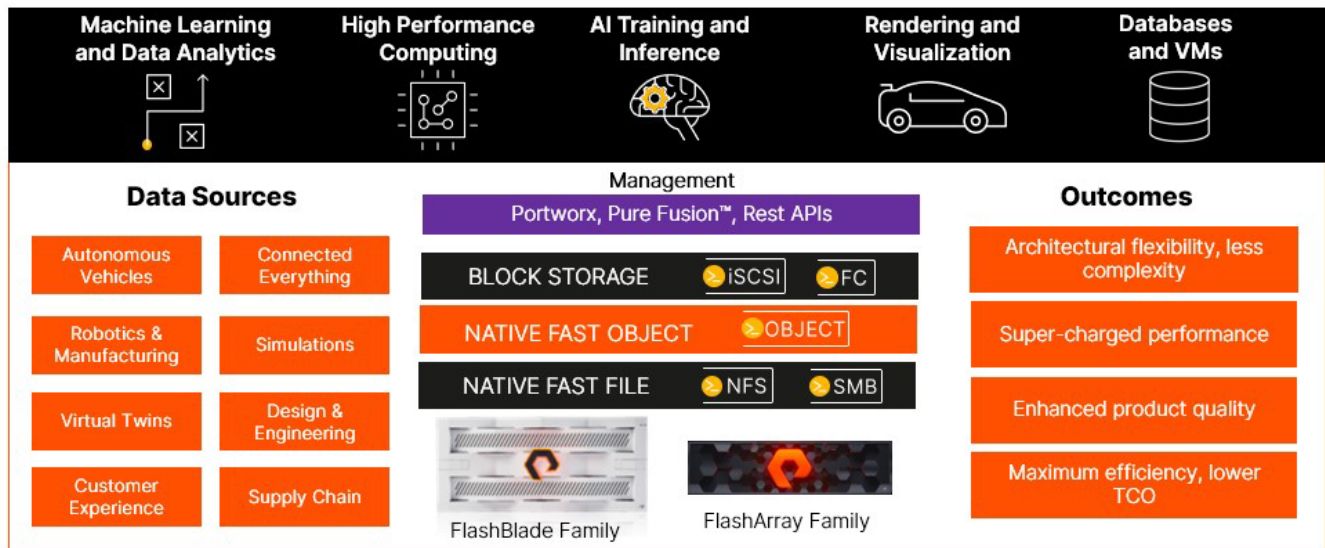


Figure 1. Pure Storage offers a range of software and hardware solutions that help automakers become more competitive by accelerating data processing and software development efforts.

Customer experience: AI is opening new frontiers in customer experience, including intelligent interaction (e.g., conversational AI) and customer targeting with dynamic pricing and offers that will make automakers more competitive.

Connected everything: As connections increase exponentially, from the vehicle, the dealer, the customer, to the factory, relevant data will flow at ever increasing rates. Mining this data for insights and actions will require maximum performance.

Manufacturing and robotics: Data science can revolutionize quality inspections to reduce recalls and power predictive maintenance. It can also serve to optimize energy utilization and drive down costs.

Design and engineering: Computational solid mechanics, computational fluid dynamics and computational electromagnetics are foundational design areas that are optimized by GPUs and fast storage.

Product planning: AI is increasingly being applied to demand forecasting, capacity planning and demand modeling.

AIRI//S can optimize all these automotive use cases. With virtualized GPUs and petabyte-scale storage, AIRI//S can support multiple use cases on a single platform. Technical details follow.

Delivering the Next Generation AI Platform

The goal of any AI factory is to maximize training performance. To achieve this, you need storage performance that meets the needs of the compute layer. Once this has been achieved, the next major focus should be on efficiency and density. Only AIRI//S achieves this sweet spot of performance, density, and efficiency that maximizes your GPU investment and optimizes TCO.

Ease of Use

AIRI//S can be set up, deployed, and managed quickly as an end-to-end AI pipeline solution. It ensures that your data teams remain productive—enabling them to spend more time delivering insights and less on worrying about their infrastructure.



Performance at Any Scale

Start your AI journey at any scale and seamlessly grow and adapt as needs evolve, all while delivering predictable performance to keep your GPU fed and data teams productive. FlashBlade//S scales to 1.92PB per single chassis and is greater than two times more performant than the previous generation FlashBlade®.

Sustainability

AIRI//S provides significant gains in data center efficiency. FlashBlade//S delivers industry-leading 1.3 watts/TB which is 48% more efficient than another popular network-attached storage solution. The DGX A100 MiG is seven times more performant than its predecessor, the V100 GPU, in the same footprint. This helps you deal with rack-limits on power.

Future Ready

AIRI//S is built for future upgrades to grow with your expanding AI needs. FlashBlade//S software and hardware upgrades are always included and non-disruptive. Future support includes Bright Cluster Management software, DGX H100, and more.

Automotive Data Is Coming Up ACES

Data scientists at automakers are dealing with more data than ever before. McKinsey designates four areas where AI will have a decisive role, referred to as ACES:

- **A**utonomous driving
- **C**onnectivity
- **E**lectrification
- **S**hared mobility

Autonomous vehicles generate massive amounts of data via data collection, training and simulation, and in-vehicle feedback including conversational AI. Revenue from connectivity services is set to grow at five times the rate of car sales. Product insights delivered via AI will be critical to remain competitive. As regulations and consumer preferences drive adoption of electric vehicles, AI-driven car and battery designs, rapid virtual prototyping, and monetizing the vehicle lifecycle via AI-driven services will be key. Shared mobility services have the potential to revolutionize consumer behaviors, including reducing vehicle purchases. OEM providers will need cutting edge AI tools to capitalize on this fast-growing sector.



AIRI//S Technology Stack



AIRI//S represents a combination of groundbreaking solutions from two industry leaders, where all-flash storage from Pure Storage is paired with NVIDIA's latest AI hardware and software. AIRI//S is optimized out-of-the-box and can seamlessly scale storage and AI compute performance, allowing organizations to begin their AI journey at any scale and grow and adapt as their needs evolve.

Additional Resources

- Explore Pure Storage automotive [blogs](#) and our [industry page](#).
- Learn how [Zenuity](#) uses accelerated training models to advance the capabilities and safety of self-driving vehicles.
- Read about the advanced AI analysis of large data sets at [NavInfo](#) to produce real-time maps and navigation models used by car manufacturers around the world.
- Download the FlashBlade//S technical [white paper](#).

¹ Quantum networking supported for larger DGX clusters.

purestorage.com

800.379.PURE

