

SOLUTION BRIEF

Pure Solutions for Manufacturing

Experience modern storage that meets the needs of a digitizing industry.

It's been nearly a decade since Industry 4.0 was first discussed. Yet many manufacturers are still struggling with realizing its promises. The impact on manufacturing is systemic, ranging from product planning, design and engineering, to the manufacturing process and factory floor. Growth in sensors and other internet of things systems is driving unprecedented data volumes. Profitability is enhanced through supply chain optimization.

All these changes tap the power of digital transformation and cloud native application development for faster innovation and a competitive edge. As a result, many projects require a completely new IT infrastructure. The complexities of legacy storage solutions are holding manufacturers back from moving into the new era of intelligence. Pure Storage® lets you uncomplicate data storage, forever. That's why over a thousand manufacturers rely on us.

Performance, Simplicity, and Efficiency for Manufacturing

With our innovative, cloud-ready solutions and the best user experience in technology, Pure Storage is the partner that can help you deliver on the promises of key manufacturing use cases.

- **Smart factories and IIoT:** Data science can revolutionize hyperautomation, quality inspection and predictive maintenance. The Industrial Internet of Things (IIoT) deploys sensors and devices that return volumes of valuable data for analysis, so much so that organizations are often challenged by the scale. But when properly done, the result is boosted efficiency, reduced costs, improved quality, and increased production.
- **Digital twins:** One of the most exciting areas in manufacturing, digital twins are genuinely revolutionary. Digital twins collect data from multiple sources which is put into the context of the physical system the twin represents. Employees can test different scenarios against the digital model, without affecting the physical system. This can go beyond single systems and scale up to entire production lines or even factories. With digital twins, data scale and performance are critical.



Manufacturing AI

Pure offers the easiest and most performant storage for powering AI manufacturing use cases.



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 manufacturers. Pure is a leader in high-density, energy efficient data storage.

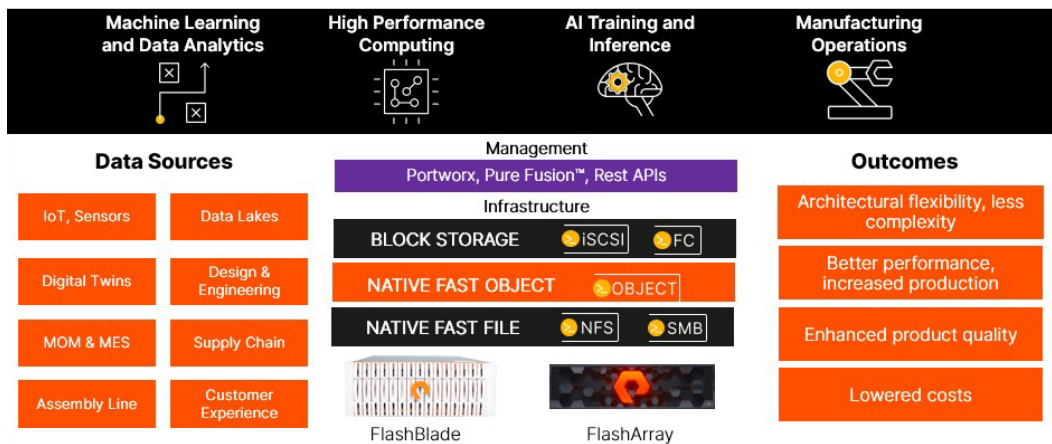


Figure 1. Pure offers a complete set of block, file and object storage solutions that are ideally suited for all the different data sources prevalent in the manufacturing industry.

- **Hyper-customization and the subscription economy:** Manufacturing is not known for extensive customization. But industry leaders are increasingly relying on digital innovation to offer hyper-customized offerings to their end users, as well as moving toward subscription-based sales models. Better customer engagement and targeted selling are having profound effects. However, many manufacturers are burdened with legacy IT tools and solutions and just putting “digital lipstick” on legacy IT isn’t enough; new IT models are needed.
- **Resilient supply chain:** Many industrial companies are trying to enhance visibility into their supply chains. By using AI and machine learning enhanced by microservices and API-based IT integrations, manufacturers can achieve successful demand-sensing and forecasting insights that allow actions to be taken to keep supply chains active and resilient.
- **Cloud native transformation:** Cloud native solutions based on microservices and containers will be vital to digital transformation. The flexibility they offer for rapid prototyping and deployment will deliver on the three major manufacturing needs: growth, speed, and cost containment. As the number of connected devices and IIoT endpoints increases, cloud native will be essential for scale.
- **Zero emissions goals 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, while also allowing the IT infrastructure to dramatically decrease power consumption.

Welcome to Modern Data Storage for Manufacturers

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 the following critical areas.

Modern AI Data Architecture Built for Manufacturers

Artificial intelligence and analytics are the driving force behind many of the fastest expanding manufacturing use cases, including digital twins and smart factories.

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With native support for both file and object (S3) workloads, Pure Storage [FlashBlade//S™](#) is the “engine” for processing data in an AI-driven manufacturing industry. The scale-out metadata architecture in FlashBlade® handles tens of billions of files and/or 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 by harnessing data at scale. FlashBlade is the perfect answer to the data challenges surrounding digital twins.

AIRI//S™ is a complete [AI-ready infrastructure](#) architected by Pure Storage and NVIDIA to extend the power of the latest NVIDIA DGX systems. AIRI offers manufacturers 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. Indeed, FlashArray//C and FlashBlade are both used by Meta (Facebook) in its development of the [AI Research SuperCluster](#).

High-performance, Low-latency Data Access

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. This is particularly true for critical control systems such as manufacturing operations management (MOM) and manufacturing execution systems (MES).

FlashArray//XL™ is the answer for your [most demanding workloads](#). It’s designed for performance at scale, delivering latency as low as 150 µs 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 VMs. Industry-leading dedupe and compression algorithms, combined with exceptional density, enable massive space, power, and cooling savings.

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

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.

Cloud and Container Ready

Many manufacturers rely on private-cloud platforms, and [containers](#) are a rapidly growing manufacturing technology trend used to increase software agility and deliver on Industry 4.0. With Pure, you’re ready for both.

For [VMware environments](#), Pure provides an incredibly rich array of integrations and support. For [VMware Cloud Foundation](#) (VCF), FlashArray™ simplifies storage provisioning and storage management by minimizing configuration touchpoints. FlashArray integrates natively with the vSphere Client, VMware vRealize Suite, and VMware Enterprise PKS.

For container-based workloads, Portworx® by Pure Storage provides a [Kubernetes-native solution](#) for persistent storage, data protection, disaster recovery, data security, cross-cloud migrations, and automated capacity management for applications running on Kubernetes. Portworx supports multiple public cloud services, as well as any physical block storage. FlashArray and FlashBlade users gain additional levels of integration and automation, making container deployments even easier.

For organizations looking at hybrid cloud, [Pure Cloud Block Store™](#) is a cloud-native solution delivering seamless data mobility, resilience, and a consistent experience that is operationally identical to an on-premises FlashArray. This means you can

migrate and run your existing critical and operational applications and workloads in the cloud without refactoring or redesigning them. Pure Cloud Block Store can provide cloud-based disaster recovery as well as flexible DevTest infrastructure.

Simpler Design, Deployment, and Use

Storage is a critical part of any manufacturing IT infrastructure, but it shouldn't be a continual headache. IT departments are often stressed by managing storage, taking up valuable time better spent driving new initiatives. Storage outages, both planned and unplanned, impact production and revenue delivery. But is there a better way?

Pure Storage simplifies everything in your storage environment. The hardware, software, and cloud management experience are co-designed to make everything just work. Systems never require performance tuning, and all array software is included. Pure is the ideal solution for a limited IT staff that wants to spend less time keeping things running and more time innovating.

Reliability is critical to manufacturing IT, keeping production lines running and data collection ongoing, especially as more business processes move to digital. FlashArray delivers proven 99.9999% availability, a number that *includes* expansions and controller upgrades. Many Pure customers have never experienced a moment of array downtime.

Modernizing your infrastructure doesn'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. [Pure1](#)® storage management delivers critical information about the health and functionality of your entire stack, right down to [each VM](#).

Deliver Continuous Innovation and Optimization

The manufacturing landscape is changing dramatically, adopting new digital processes at an increasing pace. 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.

The Pure Evergreen™ portfolio of subscriptions gives you the power to choose how you consume and deploy your storage: traditional purchase, flexible pay-as-you-go ownership, or true as-a-service, all based on the non-disruptive Evergreen architecture.

Since projects can spin up or be cancelled with little notice, it's exceedingly 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 with Pure managing the equipment.

When full capex purchases are required, [Evergreen//Forever](#)™ combines a traditional storage purchase with a subscription to continuous upgrades. You can buy your storage once and run it virtually forever. With [Evergreen//Flex](#)™ you get a flexible subscription based on the storage you use while retaining ownership of your infrastructure. Evergreen//Flex provides increased agility, better utilization, and fleet-wide asset management. You'll be able to match your spend to your needs more closely, without disruption or rebuys.

Protect Your Business from Ransomware

Data protection strategies designed for disasters, data corruption, or accidental deletions don't always hold up against ransomware attacks. Security vendor [Sophos](#) reports that 55% of manufacturers were hit with ransomware in 2021. Pure Storage helps mitigate ransomware attacks by securing critical data from being altered or destroyed—and allowing you to recover quickly from an attack, returning systems to production.

Pure SafeMode™ protects backup data and metadata by creating a secure copy. Ransomware can't eradicate, modify, or encrypt SafeMode snapshots, even with admin credentials. With just a few clicks, you can restore business-critical data quickly and at scale. SafeMode is available with both [FlashBlade](#) and [FlashArray](#) and is certified to work with multiple backup vendors, including [Commvault](#), [Rubrik](#), [Veeam](#) and [Veritas](#). If you are interested in replacing your current backup infrastructure, consider [Pure FlashRecover](#)™ Powered by Cohesity.

Sustainable Data Storage

Manufacturers are increasingly setting targets to reduce carbon emissions. While sustainability is a large topic encompassing supply chain, factory processes and more, a key area for immediate improvement is the data center. Legacy storage systems consume massive amounts of power, and as manufacturers face massive data growth, they need to solve a puzzle: how do you grow data storage capacity while simultaneously lowering power consumption? Buying more of the same gear is a guarantee of failure.

At Pure, sustainability is an integral part of our technology, operations, and people. We've designed our storage with energy efficiency in mind, and all-flash systems from Pure Storage on average use [80% less power](#) than competing platforms. This allows you to dramatically reduce your power consumption while at the same time adding capacity.

Additional Resources

- Learn how Rakon improved [manufacturing productivity](#) with Pure.
- Explore how the Mercedes-AMG Petronas Motorsport team [wins with Pure](#).
- Read how knife manufacturer Kai USA enhanced ERP and [database performance](#).
- Discover how Pure helps support your [environmental and sustainability mission](#).

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