

ENGINEER BETTER. OPERATE SMARTER. DELIVER FASTER.



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STAY A STEP AHEAD WITH NETAPP

Innovate more efficiently and sustainably

In today's world of manufacturing—from aerospace and automotive to industrial machinery—complexity is the norm. Products are more sophisticated, supply chains are more interconnected, and customers expect innovation delivered at record speed. Staying ahead means engineering with precision, running smart operations, and innovating in ways that are both fast and sustainable.

That's where NetApp® solutions can make a real difference. We help manufacturers like you unify operations, reduce risk, and accelerate innovation, whether you're designing the next big thing or scaling production globally.

HYBRID CLOUD: THE FOUNDATION OF SMART, SUSTAINABLE MANUFACTURING

Modern manufacturing leaders are turning to hybrid cloud to stay competitive and meet growing sustainability demands. With NetApp® solutions, hybrid cloud doesn't just connect your operations, it transforms them, offering:

- **Collaboration without borders.** Empower your distributed engineering and production teams to work together in real time, securely and seamlessly.
- **Smarter resource management.** Cut waste, lower your energy use, and improve efficiency throughout the product lifecycle.
- **Seamless IoT data flow.** Unlock the power of real-time insights from connected machines and sensors to promote smarter business decisions.
- **Digital twins at scale.** Design, test, and refine products virtually before they reach your production line, improving quality and reducing time to market.
- **Regulatory readiness.** Build digital product passports and participate in industry data spaces like Catena-X and Manufacturing-X.
- **Cost-effective scalability.** Scale IT resources as needed—paying only for what you use—while reinvesting your savings into innovation.

78%

of manufacturing leaders say that cloud, including hybrid models, is now central to achieving their strategic goals, particularly around innovation, agility, and operational resilience.¹



ARTIFICIAL INTELLIGENCE: ACCELERATING SMART MANUFACTURING



Predictive maintenance, intelligent automation

Use AI to anticipate equipment failures before they happen, reducing downtime and maintenance costs. Streamline repetitive tasks and optimize your production processes for safer operations and better energy efficiency with AI-driven insights.



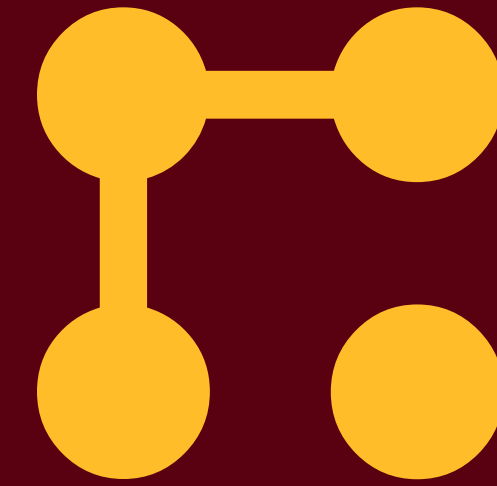
Knowledge management

Tap into the power of existing large language models (LLMs) with Retrieval-Augmented Generation AI (RAG-AI) to extract deeper insights from your manufacturing data, enabling smarter decisions, faster innovation, and scalable knowledge reuse.



Quality and yield optimization

Detect product defects in real time, see that operations are being executed properly, and adjust your production parameters to maximize output and improve consistency.



Efficient supply chain managment

Enable real-time inventory management, insight into individual vendors, and raw material price forecasting, facilitating continuous production and agile decision making.

ARTIFICIAL INTELLIGENCE MEETS REAL BUSINESS BENEFITS

AI is key to building a smart factory. But many approaches to AI involve architectures that silo analytics, training, and inference workloads.

NetApp helps keep your data available in the right place at the right time to fuel transformation. We remove data silos to provide real-time supply chain insight and efficiency, enable optimized equipment and product yield, make labor more productive, and reduce costs. Our proven solutions integrate with your legacy IT infrastructure and the world's biggest public clouds.

Our intelligent data infrastructure enables you to efficiently store, copy, and move data while minimizing the risk of data loss and cyberattacks:

- **Store and access data** with intelligent data classification, inline data reduction, quality of service, and rapid data change detection.
- **Copy and clone data** instantly and space-efficiently for application iteration, model versioning, and sandboxes.
- **Move data** across hybrid multiclouds with secure replication, read/write volume caching, and cold data tiering.
- **Protect all your data** on premises and in the cloud with policy-based security controls, authentication, encryption, and real-time ransomware detection.

Smarter AI starts here

Don't let siloed data and an inflexible storage architecture be a roadblock to AI. From proof of concept to final production, NetApp enables more efficient data management, accelerates AI workloads, and improves data security.

1

Storage OS for all your
hybrid multicloud data

2X

Performance boost for
GPU-direct storage

99%

Accuracy for real-time
ransomware detection



UP TO 20%

The amount digital twin technology can help reduce manufacturing cycle time, significantly reducing energy consumption and carbon emissions.²



2. Deloitte Insights2Action, [Digital twins can pump up industrial outcomes](#), October 2023

DIGITAL TWINS: A SMARTER WAY TO DESIGN AND DELIVER

Digital twins are a powerful example of how hybrid cloud and AI come together to drive innovation in manufacturing. By creating virtual replicas of physical products and systems, your manufacturing organization can simulate, test, and optimize products before anything hits the production line. You save time, reduce waste, and improve quality.

NetApp hybrid cloud data infrastructure can help you:

- Accelerate prototyping and iterative simulations, improving quality and reducing time-to-market.
- Monitor and optimize production and supply chains in real time.
- Cut both costs and carbon emissions with reduced manufacturing cycle times.
- Ensure data integrity and interoperability, thanks to NetApp's leadership in open standards and secure data management.

As an illustration, our collaboration with Fraunhofer IESE brings this vision to life, combining NetApp's data expertise with Fraunhofer's leadership in industrial innovation to deliver scalable, standards-based digital twin solutions that are ready for deployment.

NETAPP SOLUTIONS FOR MANUFACTURING SUCCESS

NetApp solutions are purpose-built to tackle the toughest challenges in the era of Industry 4.0, connecting R&D and factories.



High-performance engineering workloads

Power CAD, CAE, PLM, and eVDI with fast, secure, and scalable infrastructure.



Accelerated time to market

Use model-based design and parallel simulations to bring your innovations to market faster.



AI and GenAI at scale

Simplify complex workloads with unified data storage that fuels advanced AI initiatives. Implement RAG-AI with existing LLMs to enable scalable knowledge management, specifically for project management.



Seamless global collaboration

Provide your distributed teams with secure, real-time access to critical design and production data.



Sustainability by design

Optimize your energy use, reduce production waste, and achieve compliance with always-evolving environmental regulations.

THE NETAPP ADVANTAGE

What sets NetApp apart is how we help manufacturers like you turn data into a strategic asset. We don't just store your data, we make it work harder for you, while reducing costs directly and by lowering TCO through storage efficiencies such as incremental backups and data deduplication.



Speed and agility. NetApp solutions eliminate data silos and enable real-time collaboration across teams and geographies, so you can move faster from concept to production.



Smarter operations. NetApp intelligent data services automate routine tasks and surface insights that help you make better decisions, from the shop floor to the boardroom.



Built-in sustainability. We help you optimize how and where your data is processed, reducing your energy use and supporting your environmental goals.



End-to-end security. NetApp solutions safeguard your sensitive data with robust, built-in protection that helps you stay compliant and resilient against evolving cyberthreats.

Partnering for your success

With a broad ecosystem of partners—including deep integrations with AWS, Azure, and Google Cloud—NetApp helps keep your data available, secure, and ready to support whatever comes next. Whether you're innovating in the cloud, on premises, or anywhere in between, our proven expertise in secure, intelligent data management gives you the foundation to design and deliver with confidence.



LET'S BUILD WHAT'S NEXT- TOGETHER

→ **Start your journey to smarter,
faster manufacturing.**

→ **Ready to rethink manufacturing?
Let's talk.**



About NetApp

NetApp is the intelligent data infrastructure company, combining unified data storage, integrated data services, and CloudOps solutions to turn a world of disruption into opportunity for every customer. NetApp creates silo-free infrastructure, harnessing observability and AI to enable the industry's best data management. As the only enterprise-grade storage service natively embedded in the world's biggest clouds, our data storage delivers seamless flexibility. In addition, our data services create a data advantage through superior cyber resilience, governance, and application agility. Our CloudOps solutions provide continuous optimization of performance and efficiency through observability and AI. No matter the data type, workload, or environment, with NetApp you can transform your data infrastructure to realize your business possibilities. www.netapp.com



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