Transform your manufacturing operations with AWS Partners

aws

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The future of manufacturing is here

For more than 25 years, Amazon has designed and manufactured smart products using cutting-edge automation, machine learning and AI, and robotics, with AWS at its core. Today, AWS partners help leading manufacturers transform their manufacturing operations across every step of the product lifecycle by building on the most comprehensive and advanced set of cloud solutions available.

Smart products. Smart factories. The Internet of Things. The manufacturing industry has radically transformed, leaving you looking for ways to transform too. One of the most effective ways to stay competitive is to adopt cloud-based, industrial software solutions that help you optimize every step of your product lifecycle—from product design and production design to production operations.

AWS Industrial Software Competency partners develop solutions that fuse their industry expertise with the benefits running on AWS Cloud Services to help you:

- **Innovate faster**: High Performance Computing on AWS allows your product developers to solve complex problems in the cloud much faster than would be possible with most on-premises solutions, speeding time-to-results and time-to-market.

- **Reduce costs**: On-demand servers in the cloud optimized for specific applications eliminate the need for large capital investments or regular refresh cycles. You only pay for the compute power you need, and you have the flexibility to scale up or down as business needs require.

- **Improve productivity, machine availability, and product quality**: Partner solutions that pull together disparate data from across lines, plants, and the entire organization provide predictive analytics that create insights and spot potential problems you might otherwise miss, leading to improved production, less downtime, and better product quality, along with improved workflows.

No matter your industry, your product, or your customer base, AWS partner solutions make it easy to digitally transform every stage of your product lifecycle and help you focus on innovation and driving your manufacturing business. This ebook offers a glimpse at how AWS Partners are building solutions, powered by AWS, to help customers redefine the future of manufacturing.

65%
of IndustyWeek's 50 Best Performing U.S. Manufacturers in 2019 use AWS services

80%
Forbes' list of Top 25 IoT Startups to Watch in 2019 use AWS services

AWS supports the manufacturing lifecycle

Power your product design

Product design is at the heart of the manufacturing process, but most on-premises tools can't keep up with the fast product development cycles that today's customers demand. The future of product design is in the cloud, where all members of your product design team can work securely in parallel, integrating design, simulation, data, and project management into one seamless workflow. AWS offers comprehensive cloud services that empower AWS partners to develop innovative product design solutions that you can use to speed time-to-results and time-to-market, improve productivity and collaboration, and form the foundation of a robust, scalable design process.

Advance your production design

When it comes to transforming your manufacturing operations in the cloud, production design is the second piece of the puzzle. This step involves using the compute power and collaboration tools in the cloud to optimize your manufacturing production processes. Specialized cloud solutions developed by AWS partners enable manufacturers to increase the pace of product innovation while decreasing production and operational costs. By running these solutions in the cloud, engineers have access to exactly what they need when they need it to help them visualize, design, and simulate new production processes which lead to greater agility, efficiency, and productivity.

Reimagine production operations

The ideas your teams develop during the product design stage of the product lifecycle are only that—ideas—until your product operations processes make them a reality. Today, that means smart factories, which are highly digitized production environments that continuously collect and share data through connected machines, devices, and production systems. Running a smart factory makes it possible to monitor your entire production process, from manufacturing tools and the supply chain to individual operators on the shop floor. By monitoring the process, you can improve business operations and ensure the high-quality products customers expect. Industry-leading AWS partners offer the cloud-based solutions that today's smart factories rely on.
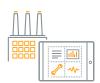
Siemens accelerates product lifecycle management with AWS

Power your product design

Advance your production design

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"Siemens understands intimately the needs of industrial companies, so through continued partnership with AWS and this industrial initiative, we look forward to helping our mutual customers digitalize faster through our product lifecycle management, Industrial IoT and Low-Code software solutions."

—Bob Jones, EVP Siemens Digital Industries Software

SIEMENS

As a manufacturer, you know your product lifecycle management (PLM) practices can make or break you in today's customer-oriented environment. Effective PLM speeds your time to market, improves product quality and safety, cuts costs by reducing errors and waste, and ultimately benefits your company's bottom line.

Digital driven companies are realizing the benefits of PLM on the cloud for accelerating innovation and lowering cost of ownership. PLM in the cloud can save companies time and money with the use of best-in-class, reliable cloud services that scale based on their business needs.

Enter Teamcenter X, the latest release of Siemens Digital Industries' Teamcenter cloud-based PLM solution built on the strength of Siemens' partnership with AWS.

The Siemens Teamcenter product team and AWS Professional Services team worked together to design, develop, and deliver Teamcenter X in half the normal cycle time, while still meeting Siemens' exacting quality standards for release. They did this by leveraging AWS technologies including, microservices, containers, and Amazon Aurora, a MySQL and PostgreSQL-compatible relational database built specifically for the cloud.

To educate potential customers, Siemens and AWS developed a Teamcenter X trial that allows manufacturers to try the product for themselves. Trial users are guided through key PLM use cases with an onboarding tool that helps them quickly understand the capabilities and value Teamcenter X offers their operations.

Teamcenter X allows manufacturing companies to

- Control, share, and collaborate across multiple mechanical and electronic design tools, creating a multi-domain bill of material (BoM).
- Accelerate product development by supporting design re-use, managing change, and speeding cycle time across domains and departments.
- Eliminate the complexity, time, cost, and risk of PLM installation, maintenance, and upgrades.
- Enjoy a greater return on investment by removing upfront infrastructure costs and reducing IT resource requirements, adding more capabilities as business needs grow and change.

Because Teamcenter X is built on AWS cloud infrastructure, users can be confident that their data is secure, with strong safeguards in place to protect privacy and guard against data loss.

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GE Digital optimizes industrial performance using AWS

Reimagine production operations

GE Digital

Whether your company is just getting started or is well along the path in its digital transformation journey, one thing is certain: a successful digital transformation requires new thinking and new technology. GE Digital helps industrial companies optimize the performance of their assets, operations, and workforce with an array of solutions based on the AWS platform. Across industries including Manufacturing, CPG, Power Generation, Oil & Gas, Distribution & Transmission, Chemicals, and more, companies rely on GE Digital's cloud-based solutions to be the backbone of their profitable operations.

- **Predix Asset Performance Management** software helps optimize equipment reliability and O&M efficiency using predictive analytics, work process automation, and built-in GE industrial expertise

- **Predix Operations Performance Management** provides power generation companies with analytics-driven insights, production planning tools, and optimizers to help drive profitable operations

- **Predix Essentials** provides a complete, flexible solution for industrial equipment monitoring and event management

- **Predix Manufacturing Data Cloud** consolidates and transforms manufacturing data across plants for cloud storage, analysis, and analytics

- **Grid Analytics** offers applications which optimize data using Artificial Intelligence and Machine Learning, in addition to domain knowledge, in order to help solve the most challenging business problems facing distribution and transmission utilities today

Many of these GE Digital products are based on the Predix Platform, which directly incorporates a wide range of core AWS services used by our applications and customer-defined extensions. AWS and GE Digital are strategic partners and are actively working together to further interoperate and integrate advanced AWS services with the Predix Platform and the GE Digital application portfolio.

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Autodesk automates design in the cloud

Power your product design

AUTODESK

Autodesk builds software for people who make things by harnessing emerging technologies and giving you the power to work more quickly, effectively, and sustainably. Autodesk Forge is a cloud-enabled platform on which you can build applications using design and engineering data to automate processes, connect teams and workflows, and visualize data more easily and efficiently. In partnership with AWS, Autodesk is pioneering next-generation technology like Generative Design, which combines the power of the cloud and artificial intelligence to automate the design-to-manufacturing process.

In the "new normal" of remote working, the cloud has become a necessity, enabling your teams to work together concurrently regardless of their physical location or where they sit in the product development lifecycle. Autodesk's partnership with AWS is enabling a secure, virtual collaborative environment that keeps customers connected 24/7 to their entire supply chain. Together, Autodesk and AWS are helping customers realize the innovations and productivity that will propel their business into the future.

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Infor helps manufacturers take advantage of cloud technology

Reimagine production operations

infor

Combining a deep knowledge of manufacturing and extensive experience building cloud-based industry-specific software solutions Infor has built Infor CloudSuite. This set of solutions brings the power of cloud technology to your production operations.

CloudSuite and Infor OS cloud platform transform facilities into smart factories by capitalizing on the benefits of machine learning, AI, and predictive analytics to help reduce downtime, power integration and automation, and improve collaboration. More specifically, CloudSuite helps you meet customers' demands for product innovation and personalization, manage complex supply chains, and reduce costs and operational inefficiencies.

CloudSuite, powered by AWS, allows you to get up and running faster, without the large up-front implementation costs, and long implementation timeframes of on-premises solutions and remain confident your data is secure.

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MachineMetrics drives smart factory transformation

Reimagine production operations

machinemetrics

Making the transition from a traditional manufacturing facility to a smart factory can be daunting. The MachineMetrics IIoT platform, powered by AWS, is designed to accelerate that transformation with an intuitive and flexible plug-and-play approach. The platform is quick to deploy, simple to use, and easy to scale across one or multiple factories. Using MachineMetrics, you can connect, collect, and visualize data from any piece of equipment on the shop floor, and then use that data to diagnose and predict problems in real time, either by building your own apps or seamlessly connecting the Machine Metrics platform.

The MachineMetrics and AWS partnership supports hundreds of manufacturers who have connected thousands of machines to reduce equipment downtime and maximize operational profitability. Enabled by the security, reliability, and scalability of AWS Cloud Services, MachineMetrics users are confidently and securely putting their machine data to work while providing the foundation for limitless data-driven automation.

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Seeq turns data into information

Reimagine production operations

Seeq

Evolving your smart factory operations leads to creating an extraordinary amount of data, but until that data is turned into information, it's just noise. Seeq has developed advanced analytics applications that enable teams to use their data to rapidly investigate, develop, and share insights from operations and manufacturing and apply those insights to improve production outcomes.

The combination of AWS and Seeq pairs a secure cloud services platform with innovation in advanced analytics to support real-time collaboration and issue diagnosis across an organization. With Seeq, your engineers and subject matter experts can get better, faster insights on data already being collected and act on those insights more quickly, enabling continuous improvement across the entire organization.

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Tulip rightsizes digital transformation

Reimagine production operations

TULIP

Even though you know the value of running as a smart factory, that doesn't mean you're ready to launch a full-scale digital transformation. With Tulip, a manufacturing application platform powered by AWS, you can transform your operations at the pace of your business—one app at a time. Tulip gives shop floor engineers and those closest to the production process, the intuitive, no-code tools they need to build IIoT-enabled apps that increase the efficiency, productivity, and quality of your operations. Use Tulip to increase your yield, speed up improvement cycles, reduce defect rates and training times, and introduce new products faster.

The nearly unlimited horizontal scaling capabilities enabled by AWS allow you to start small, with a single app, and then scale as your business requirements and manufacturing complexity increases.

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Reshape your manufacturing operations with proven expertise and experience

AWS and its industrial software partners are leveraging the benefits of cloud computing and advanced manufacturing know-how to create or deploy comprehensive, innovative, and secure solutions for manufacturers across industries.

Ready to transform your manufacturing operations? Learn more about how AWS's proven experience in manufacturing, together with our leading partners can help you on your digital transformation journey at https://aws.amazon.com/manufacturing/.