

Semiconductor & PCB Manufacturing

Fabrication, Packaging, and Assembly

Leverage AWS IoT Services for smart manufacturing and use edge computing, data lakes, and advanced analytics tools to improve manufacturing operations by capturing, analyzing, visualizing, and executing on foundry and fabrication data.

AWS helps you:



Enable access to disparate manufacturing process data to improve Overall Equipment Effectiveness (OEE)

Add AI and Machine Learning for real time and predictive analytics capabilities

Increase device yields and reduce defect rates using advanced, AI-driven analysis

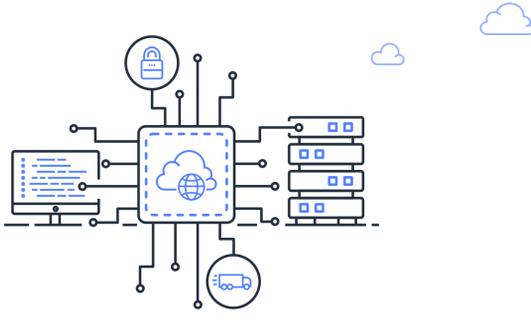
Secure your foundry IP and Process Design Kits (PDK) while collaborating with your global ecosystem partners and customers

Cloud drives digital transformation



Cloud drives resiliency

Cloud is transforming supply chains in every industry. For semiconductors, challenges within the supply chain are largely due to the reliance on a globally distributed community of specialized equipment and material suppliers. To address the risks of geographical concentration and lack of resiliency, supply chains are transforming from structured, linear systems, to interconnected cloud-based systems.



How Cloud is impacting the supply chain



SECURITY

Securing a worldwide supply chain is a complex task, requiring multiple stakeholders. The cloud advances security and reduces risk with an infrastructure designed to meet the requirements of the most security sensitive industries. Connect to AWS securely using AWS Direct Connect and AWS Site-to-Site VPN.

Based on our customers' requirements, we may need to run tens of millions of simulations in one week and only several million the next week. AWS gives us the flexibility to do that without any effort at all.

[READ MORE](#)

Yuval Bonen,
Co-founder and Vice President,
Software, proteanTecs



ACCESS TO ADVANCED ANALYTICS

Use cloud-based Artificial Intelligence, Machine Learning, and High Performance Computing for semiconductor fabrication, packaging, and lithography. Build an advanced analytics pipeline and use Amazon QuickSight for dashboard insights leading to cost optimization and faster time to market.



EDGE TO CLOUD

IoT and storage advancements make it easy to securely collect, integrate, organize, and store massive industrial data sets even with limited connectivity. Services such as AWS Snowcone execute compute applications at the edge, and can ship the device with data to AWS for offline data transfer, or can transfer data online with AWS DataSync from edge locations. Snowcone is the smallest member of the AWS Snow Family of edge computing, edge storage, and data transfer devices. And with AWS Outposts, you can run AWS infrastructure and services on premises for a truly consistent hybrid experience.

"We decided to explore Machine Learning to enable more accurate detection of defects and reduce manual labor costs, and we turned to AWS as our preferred cloud provider to help us do that. The AWS ML Solutions Lab worked with us through every step of the process, from a discovery workshop to define the business use cases to the building and selection of appropriate ML models to the actual deployment. Using Amazon SageMaker, the machine learning solution reduced our employee time spent doing manual inspection in half. With the Solutions Lab's help, we are now able to optimize the SageMaker model ourselves going forward as conditions change."

Bill Lee,
Assistant Vice President -
Formosa Plastics Corporation

AWS has the solutions to improve foundry operations and yields



Optimize Foundry Production

Maximize the productivity of your foundry with wafer defect analysis, yield analysis, and inspection. Use storage services such as Amazon S3, Amazon FSx for Lustre, and Amazon EFS, to transfer your data including tools, IP characterization, design, project & yield data, product feedback.

Build an analytics pipeline using a data lake and use Amazon QuickSight dashboard to gain insights for cost optimization and faster time to market.



Gain Insights with Analytics

Bridge your manufacturing with your design and verification using advanced analytics. Collaborate with contract manufacturers and gather device data to track defects and optimize with real-time inference at the equipment location using AWS IoT Greengrass.

Collaborate with the foundry to analyze wafer yields and optimize manufacturing with real-time inference.



Increase security and quality

Enable secure collaboration with third-party partners including IP providers, EDA vendors, chip foundries, contract manufacturers, and contract engineering teams.

Build and tailor your data lake so you can securely store, categorize, and analyze all your production data in one, centralized repository.

"AWS Backup was the perfect solution for automating the protection of the production environment."

Mickaël Crozes
Senior system/software
developer engineer for
Amazon Lab126



"By using AWS for our new IoT platform, we saved 80 percent in development cost. It also enables developers to focus on writing business logic for LG service scenarios"

Kim Kunwoo
Chief of the Service
Development Team, LG Cloud
Center, LG Electronics



Get Started

Leading companies in Semiconductor & Electronics use AWS. Contact our industry experts and start your own AWS Cloud journey today.

Contact an industry expert