How AWS is helping Industry to get insights from OPC UA

Jura Berg

Senior Solutions Architect Amazon Web Services



What is Amazon Web Services?





AWS Today

200+ Services



Amazon S3
Avg.
150M request/s



AWS recognized as a Leader in 2024 Gartner Magic Quadrant for Global Industrial IoT Platforms

Access the full report >



Gartner does not endorse any vendor, product or service depicted in its research publications and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner's research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose. GARTNER is a registered trademark and service mark of Gartner and Magic Quadrant is a registered trademark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and are used herein with permission. All rights reserved. This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from AWS.



Industrial Architecture



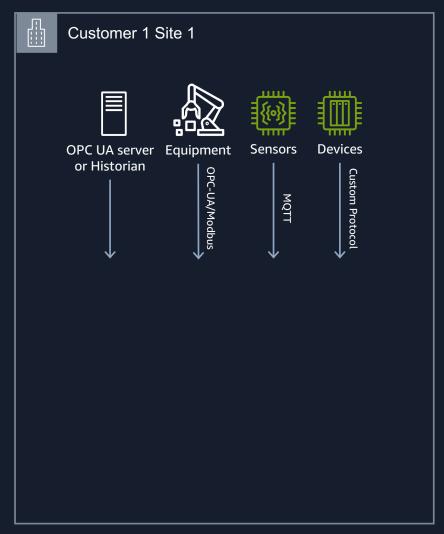
Common challenges across industries



- 1. Connectivity
- 2. Edge/offline processing
- 3. Real time visibility (OEE)
- 4. Predictive maintenance
- 5. Data contextualization



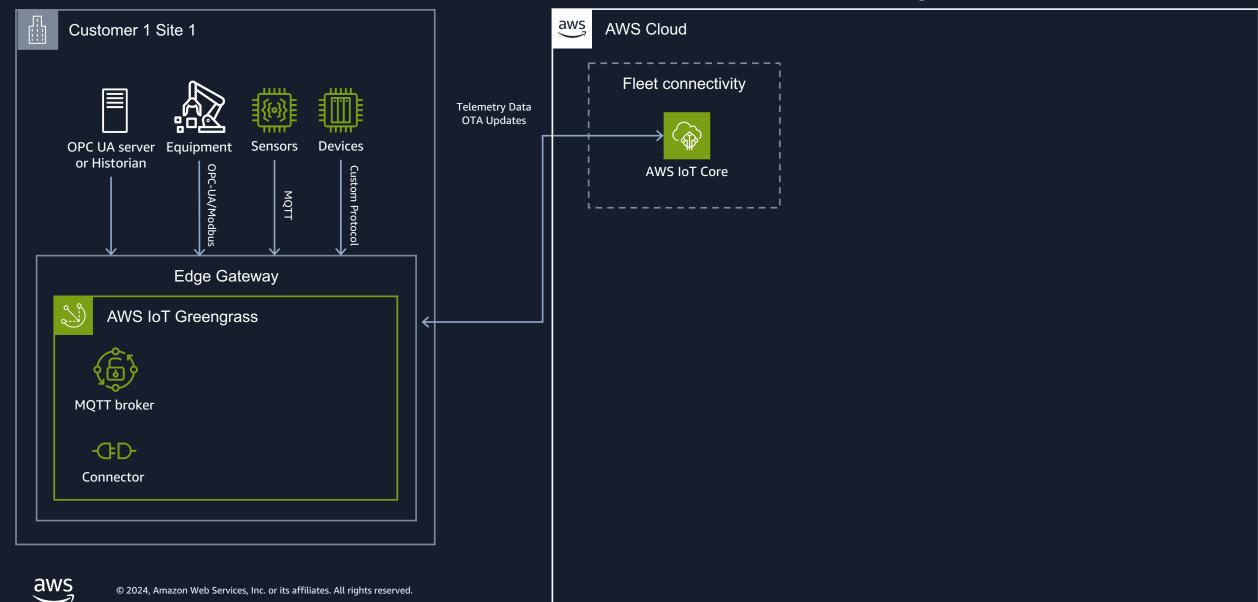
Industrial Architecture: Connectivity



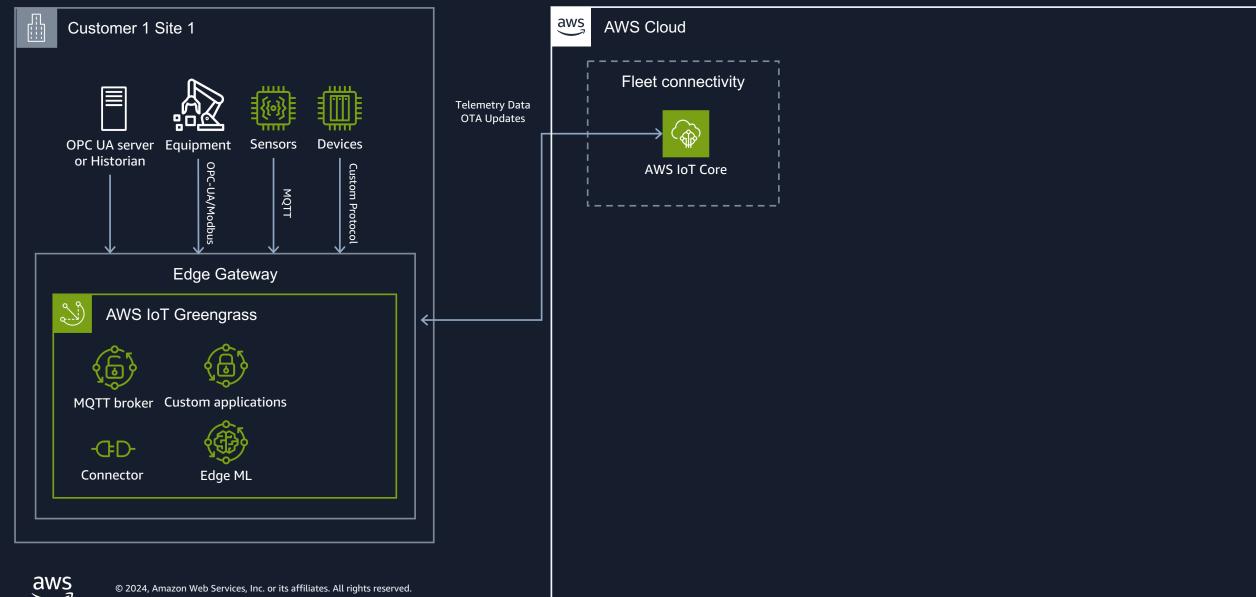




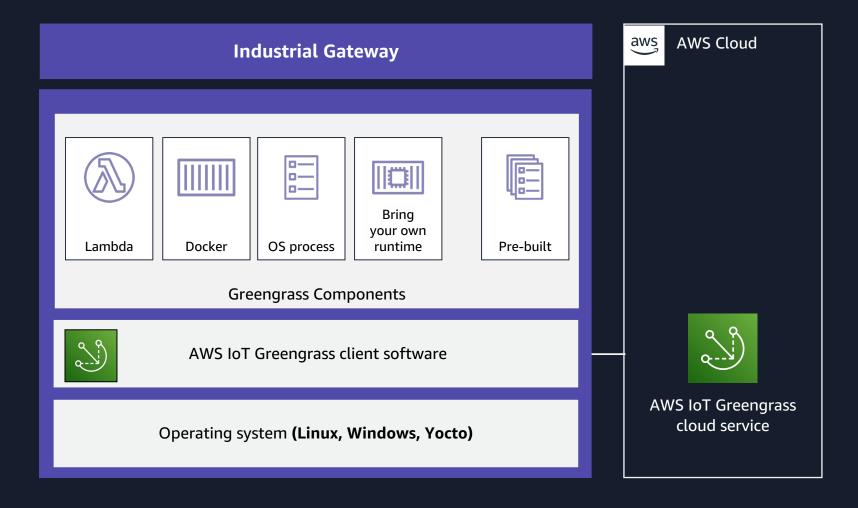
Industrial Architecture: Connectivity



Industrial Architecture: Edge processing

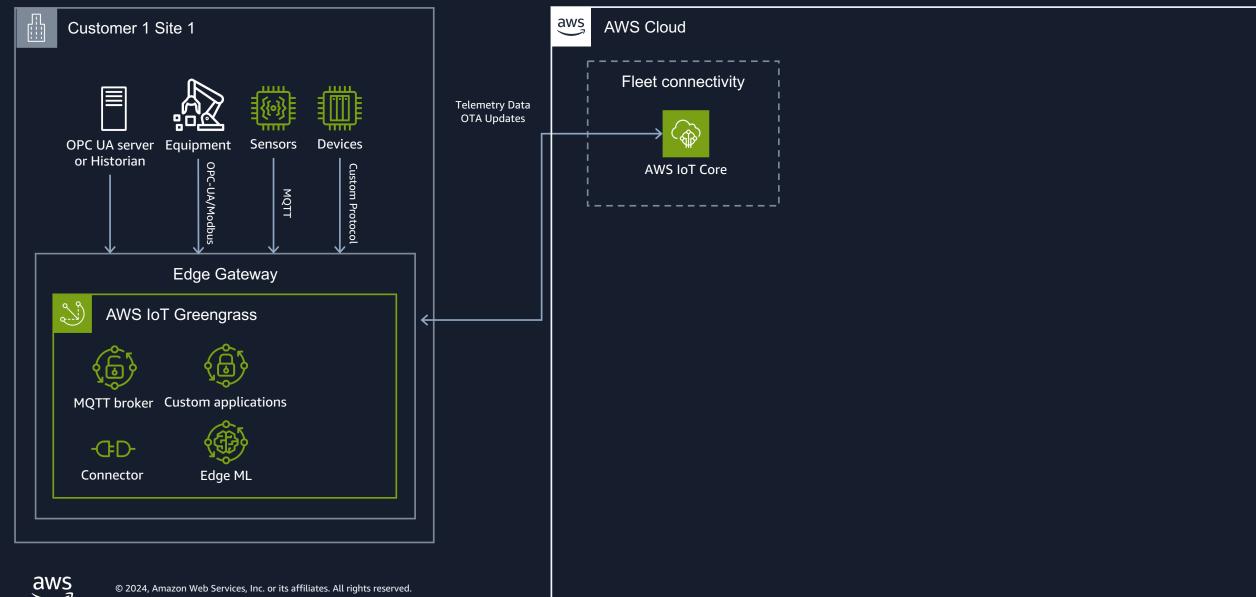


AWS IoT Greengrass

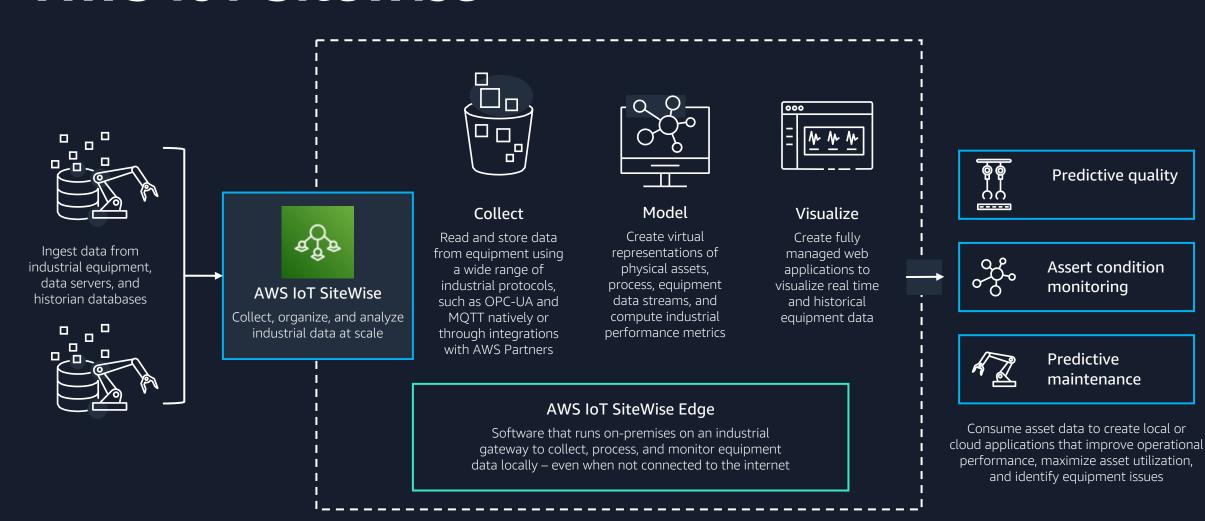




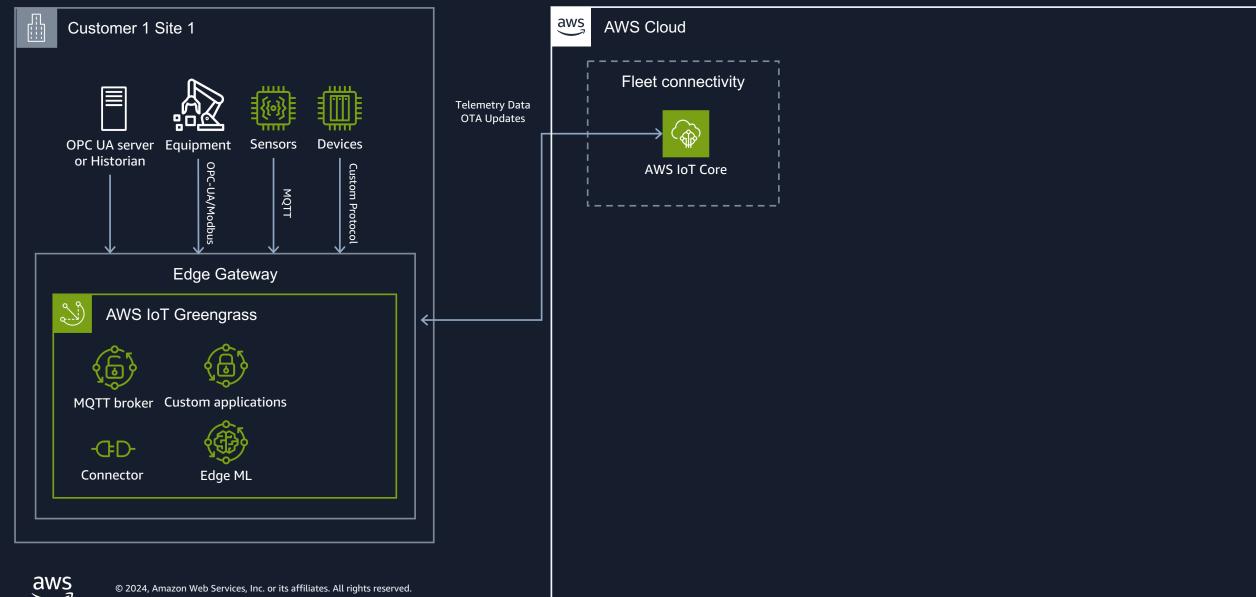
Industrial Architecture: Edge processing



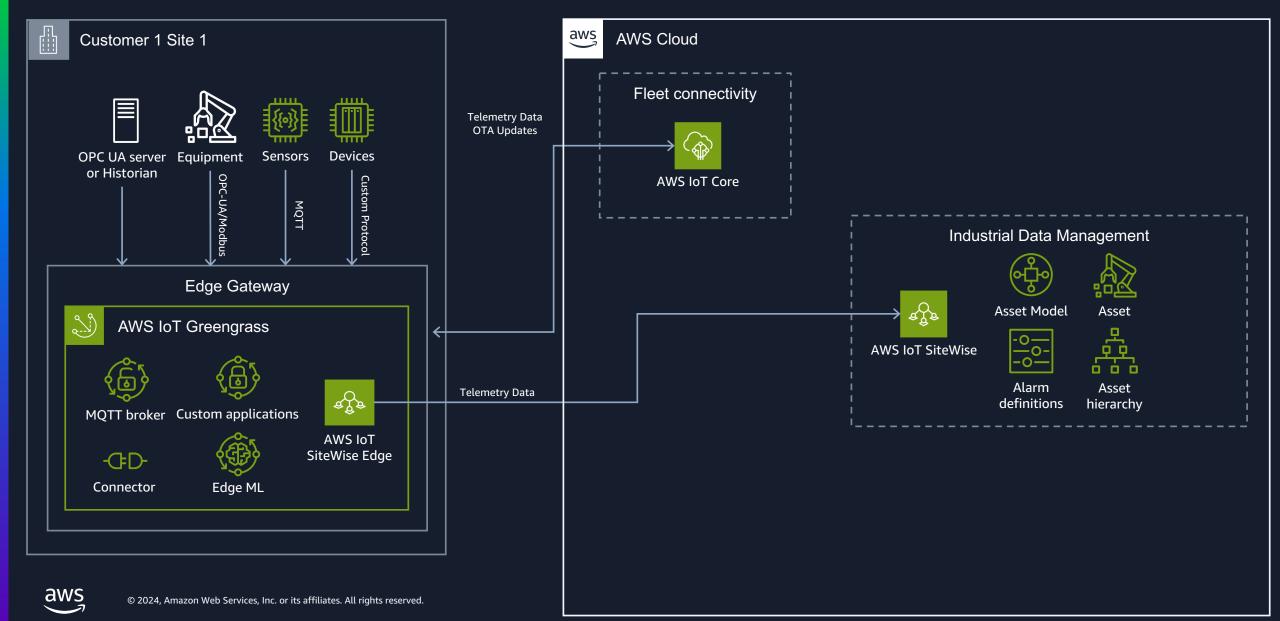
AWS IoT SiteWise



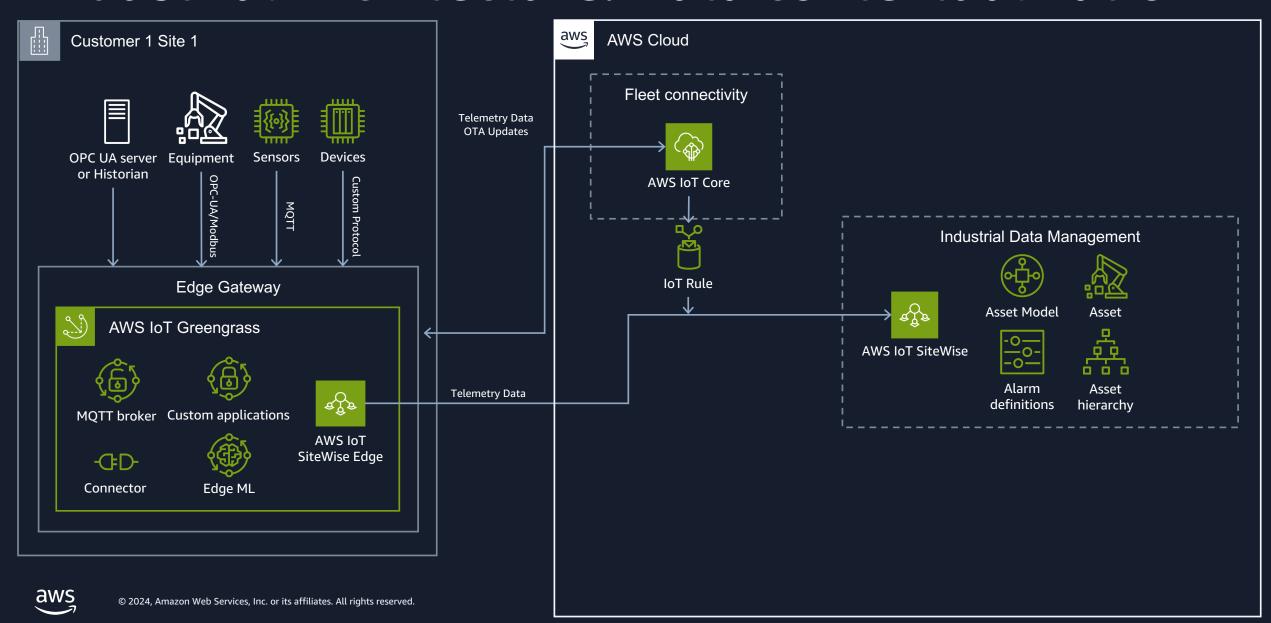
Industrial Architecture: Edge processing



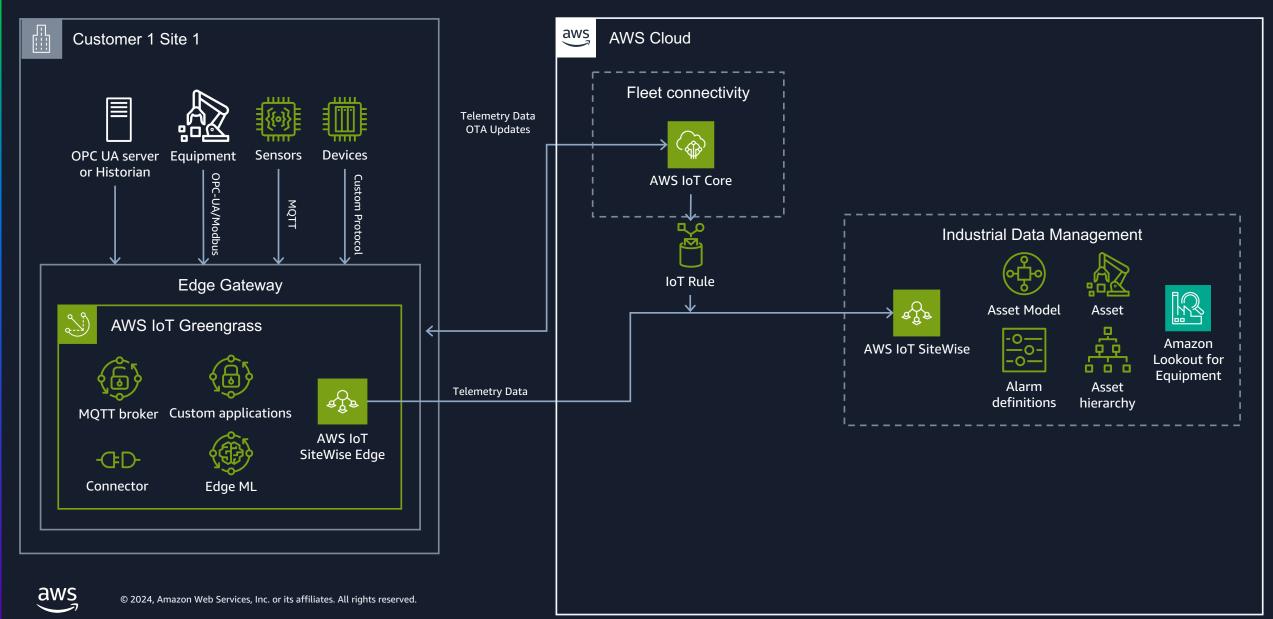
Industrial Architecture: Data contextualization



Industrial Architecture: Data contextualization



Industrial Architecture: Predictive maintenance



Amazon Lookout for Equipment







Predictive Maintenance Solution to Improve Assets Availability with AWS

CHALLENGE

With more than 200 CNC machines per site running 24/7, preventative maintenance is time consuming and costly. The Maintenance Team had difficulty identifying high-priority tasks and work plans. The amount of data to analyze and required skills to implement predictive maintenance were too high.

SOLUTION

AWS and Toyota co-developed a Predictive Maintenance solution capable of predicting failures days in advance, reducing unplanned downtime. The solution uses AWS IoT SiteWise and Amazon Lookout for Equipment to reduce data processing infrastructure and the need for data science skills.

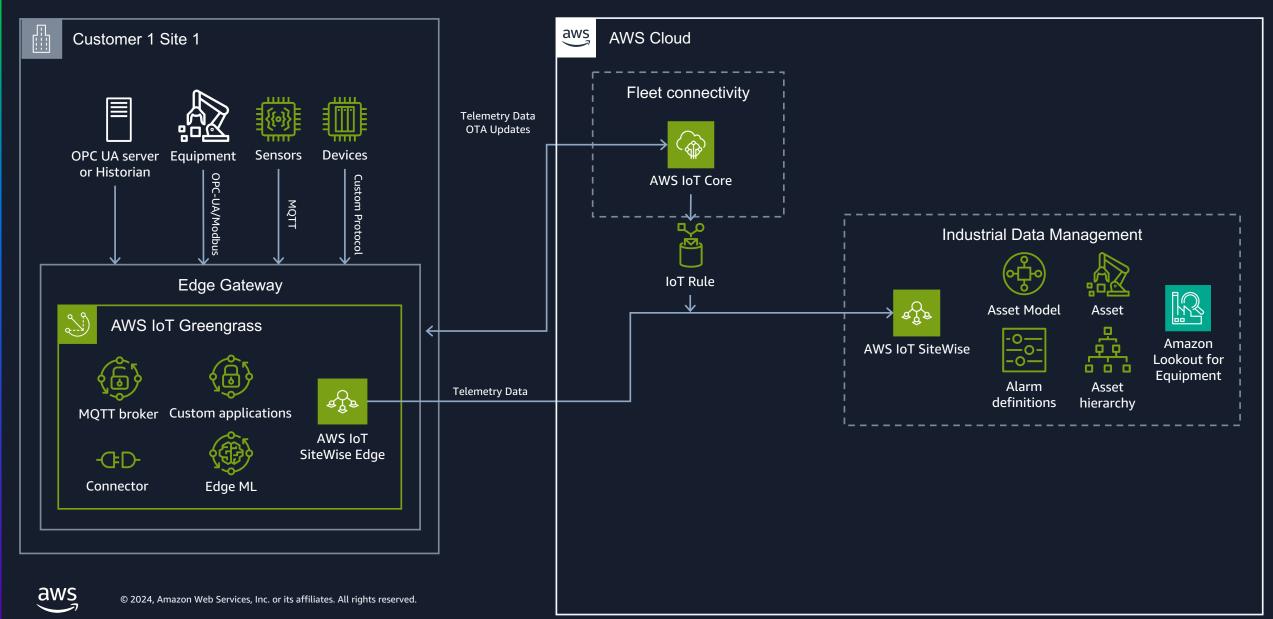
IMPACT

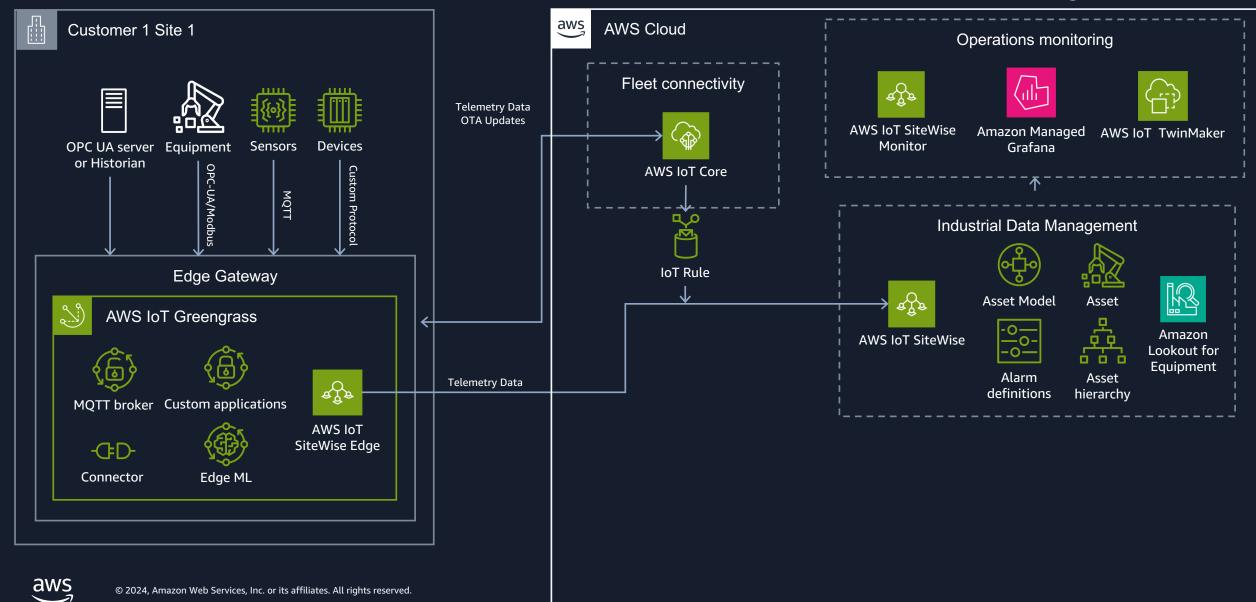
- Prevented 16 incidents and 20 hours of downtime (~\$80k cost savings)
- Operational Availability in focus line improved 10% vs. previous 12-month avg.
- Solution scaled to 300+
 assets across TMMK
 Powertrain; TMNA selected
 the solution for the region

"The Operation Availability of our focus line was between 78-82%, incurring around 40 hours of downtime each month. With the help of AWS, we have found many problems in our machines, if left unnoticed would lead to critical failure. Now our OA is 92% and the downtime is around 20 hours!" - Braden Burford, Sr. Maintenance Engineer, Toyota



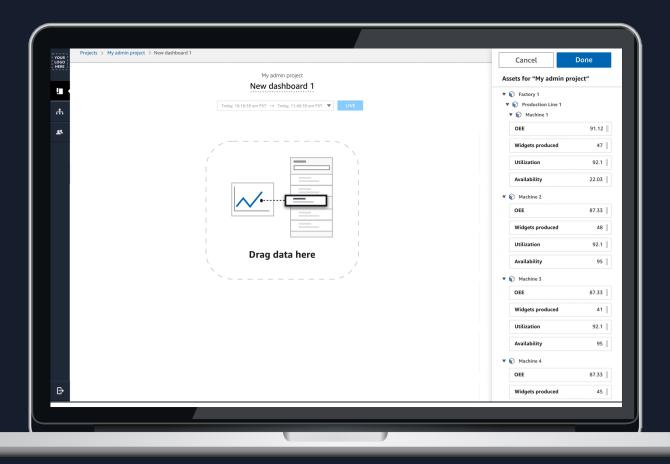
Industrial Architecture: Predictive maintenance



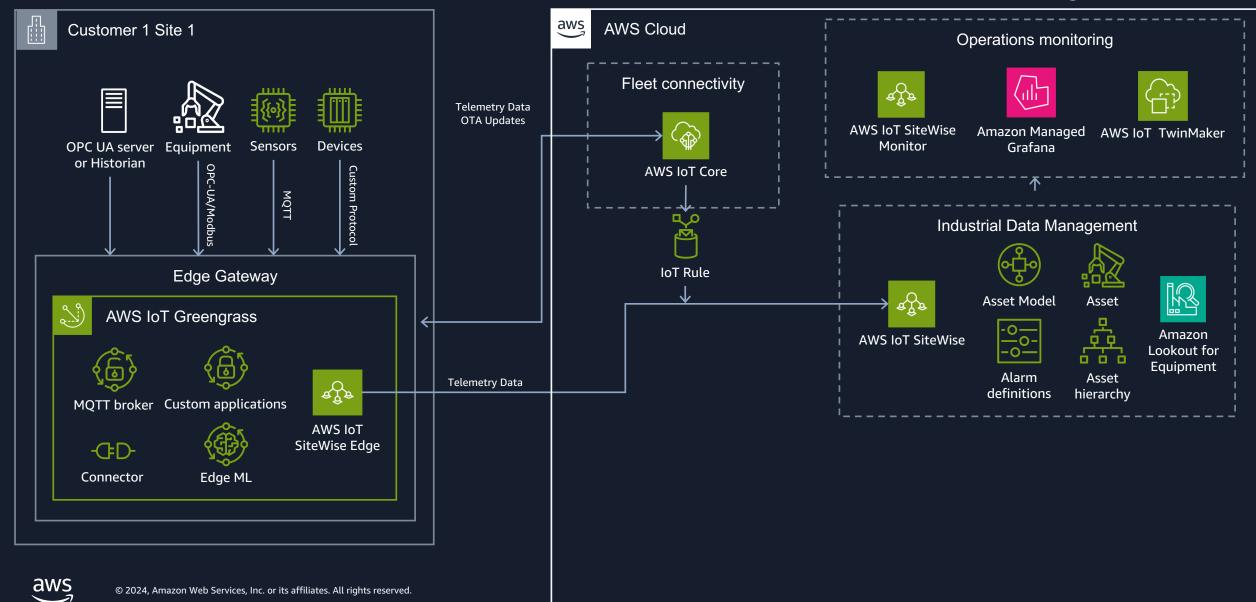


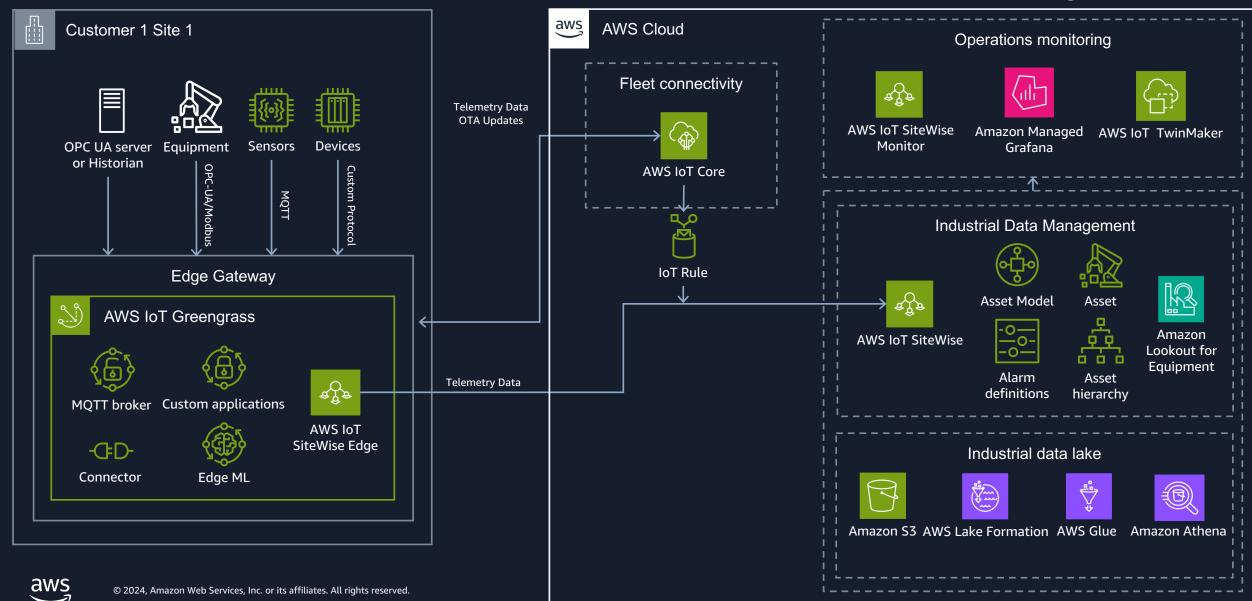
AWS IoT SiteWise Monitor

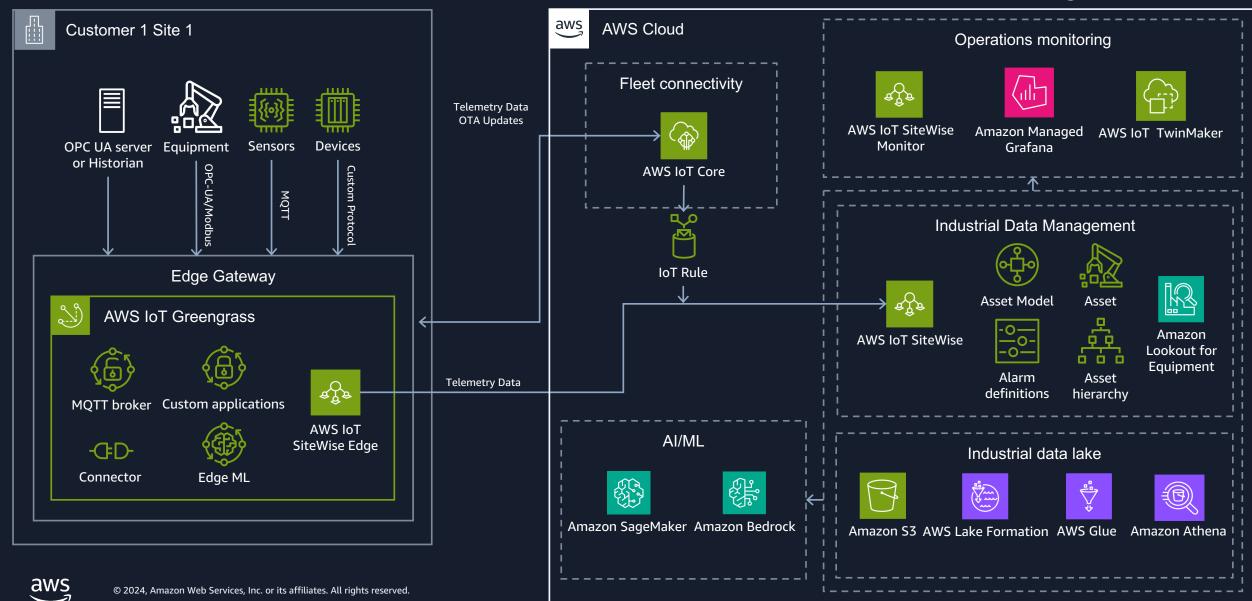
Create a fully managed web application for visualizing and interacting with operational data from devices and equipment connected to AWS IoT













CHALLENGE

Operating in over 60 countries, KONE provides elevators, escalators, and automatic doors, plus solutions for maintenance and modernization to add value to buildings throughout their life cycle. KONE needed robust Internet of Things and analytics services for its growing fleet of smart devices, to improve the flow of people and resources in urban settings.

SOLUTION

KONE used AWS IoT Core and other services to build a secure, highly available, agile architecture for its connected elevators and escalators. The framework on AWS serves as a foundation to develop groundbreaking products.

IMPACT

KONE unlocked new efficiencies using AWS IoT

- 40% reduction in customer-reported elevator and escalator issues
- Greater than 70% proactive identification of faults
- 40% fewer entrapments

"The technology core we built on AWS is a backbone on which we can scale, innovate in the market, and differentiate ourselves in the best urban flow experience."

Ashish Agrawal, Chief Information Officer, KONE





Thank you!

Jura Berg

Senior Solutions Architect

Amazon Web Services

juraberg@amazon.com



