

# How AWS is helping Industry to get insights from OPC UA

**Jura Berg**

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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 >](#)

Figure 1: Magic Quadrant for Global Industrial IoT Platforms



Gartner.

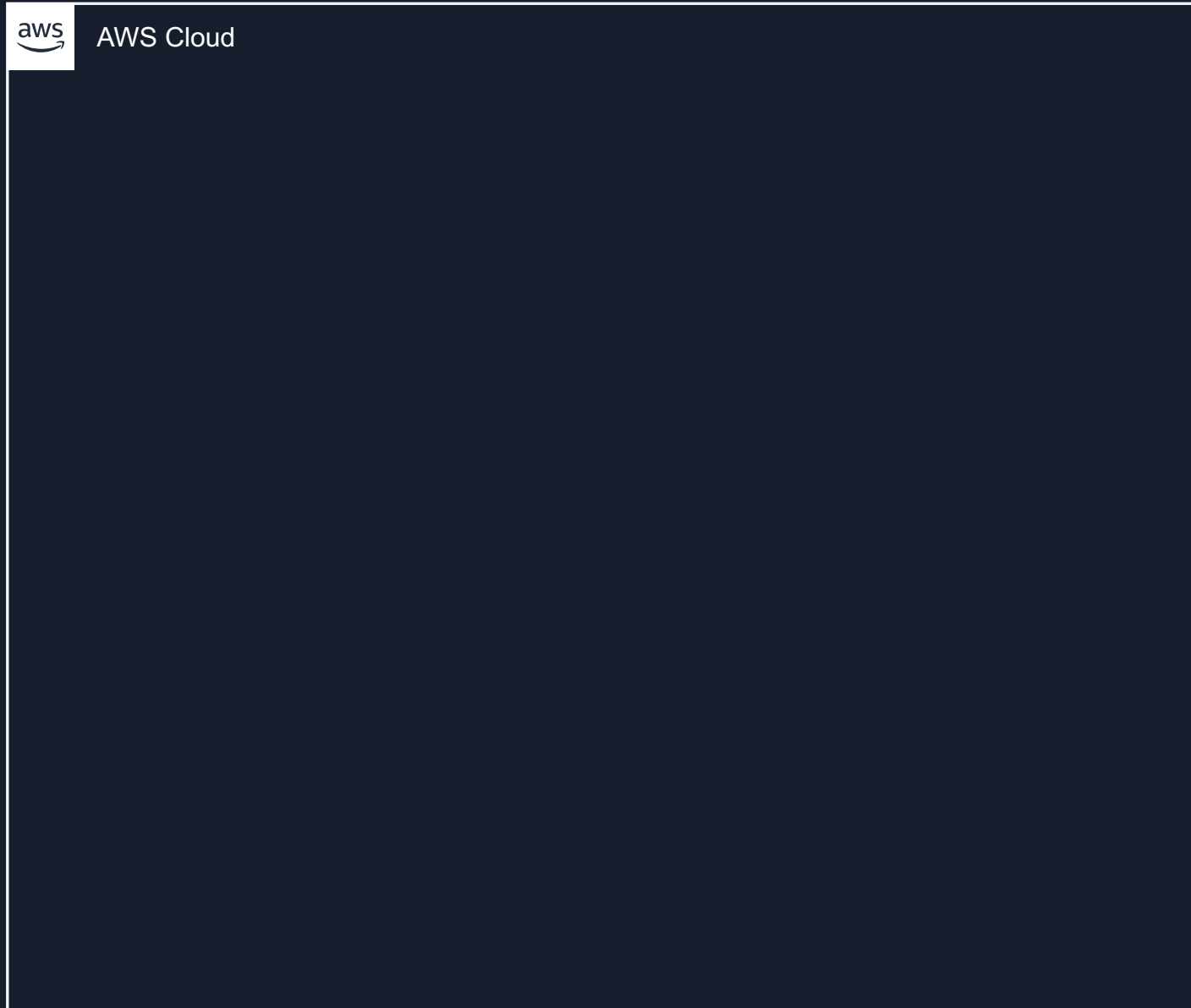
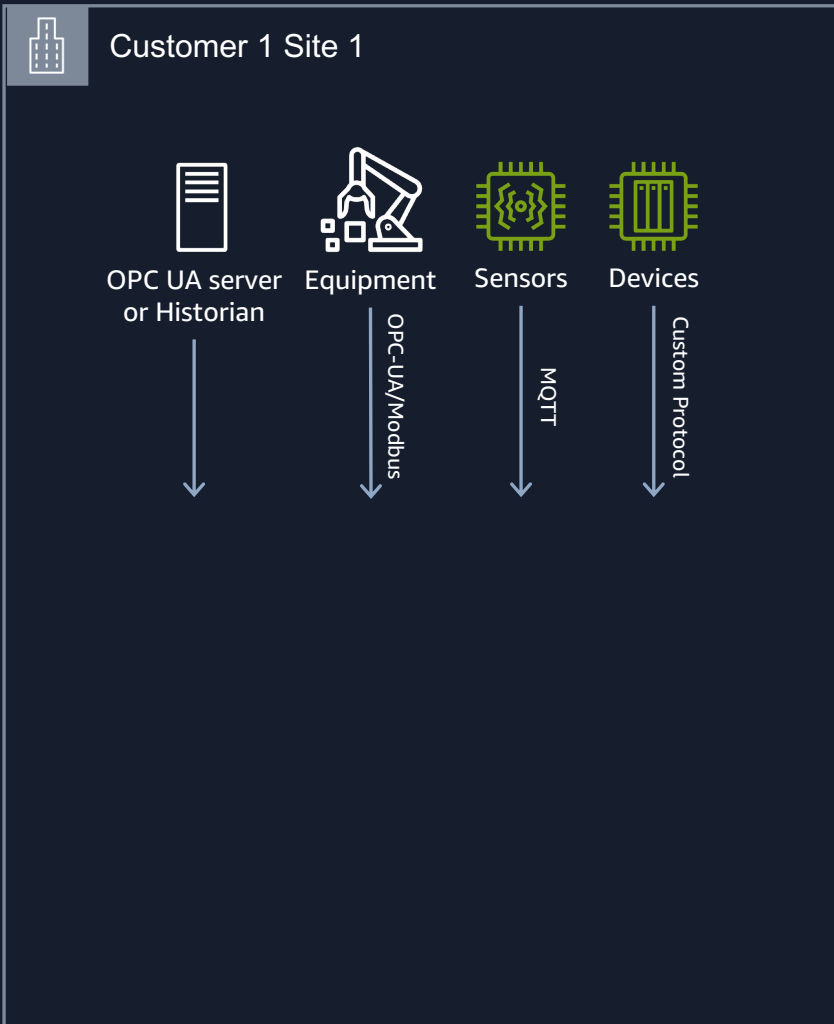
# Industrial Architecture

# Common challenges across industries

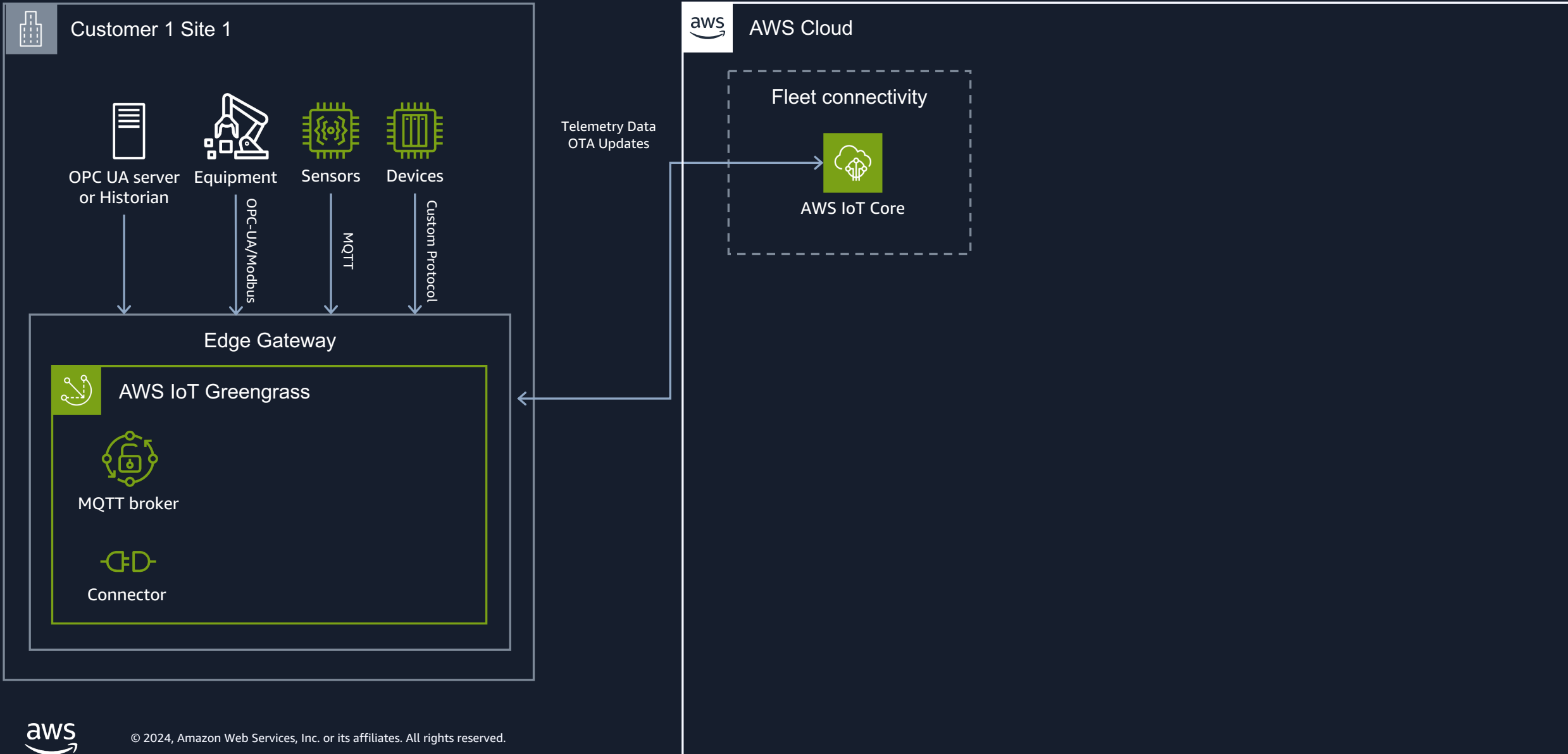


1. Connectivity
2. Edge/offline processing
3. Real time visibility (OEE)
4. Predictive maintenance
5. Data contextualization

# Industrial Architecture: Connectivity

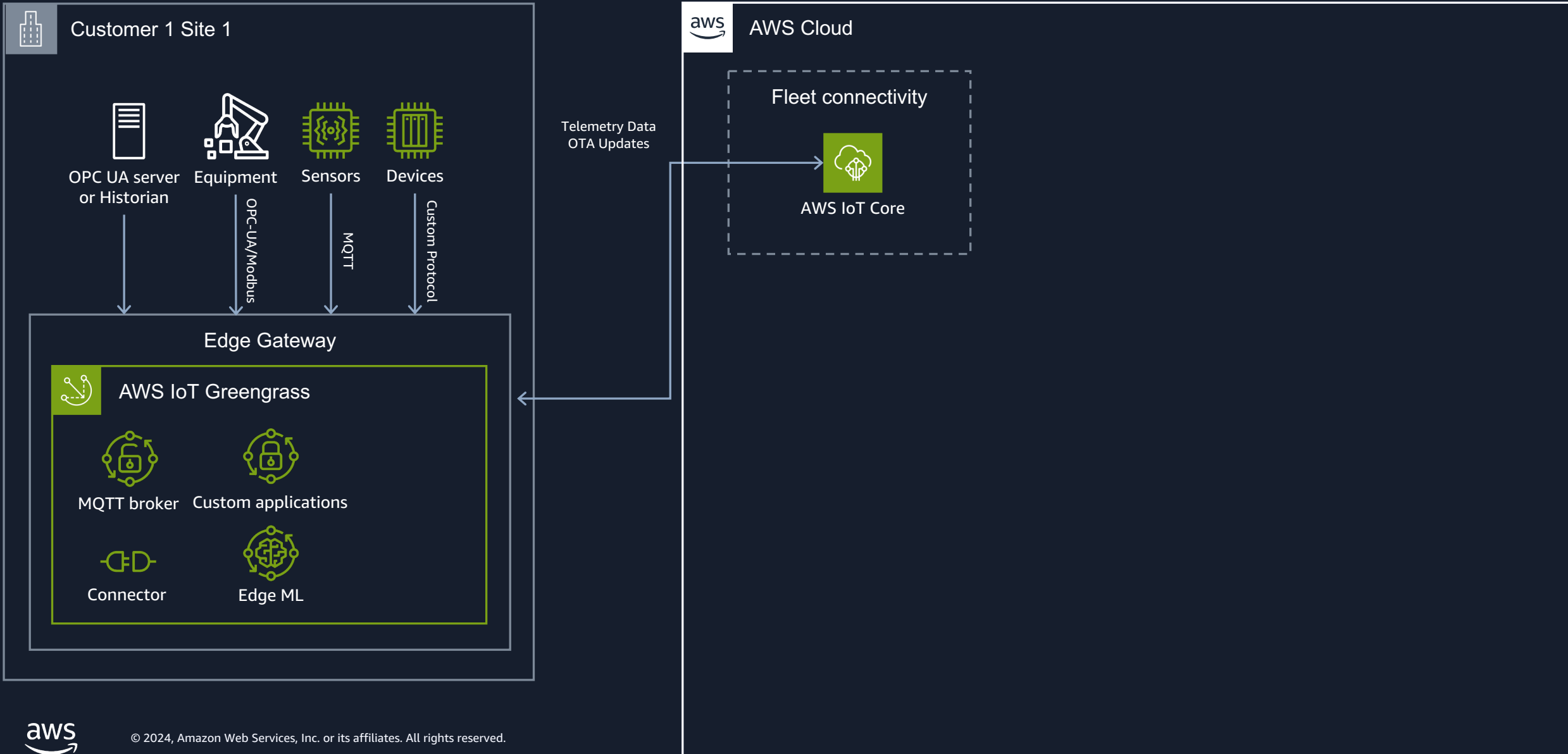


# Industrial Architecture: Connectivity

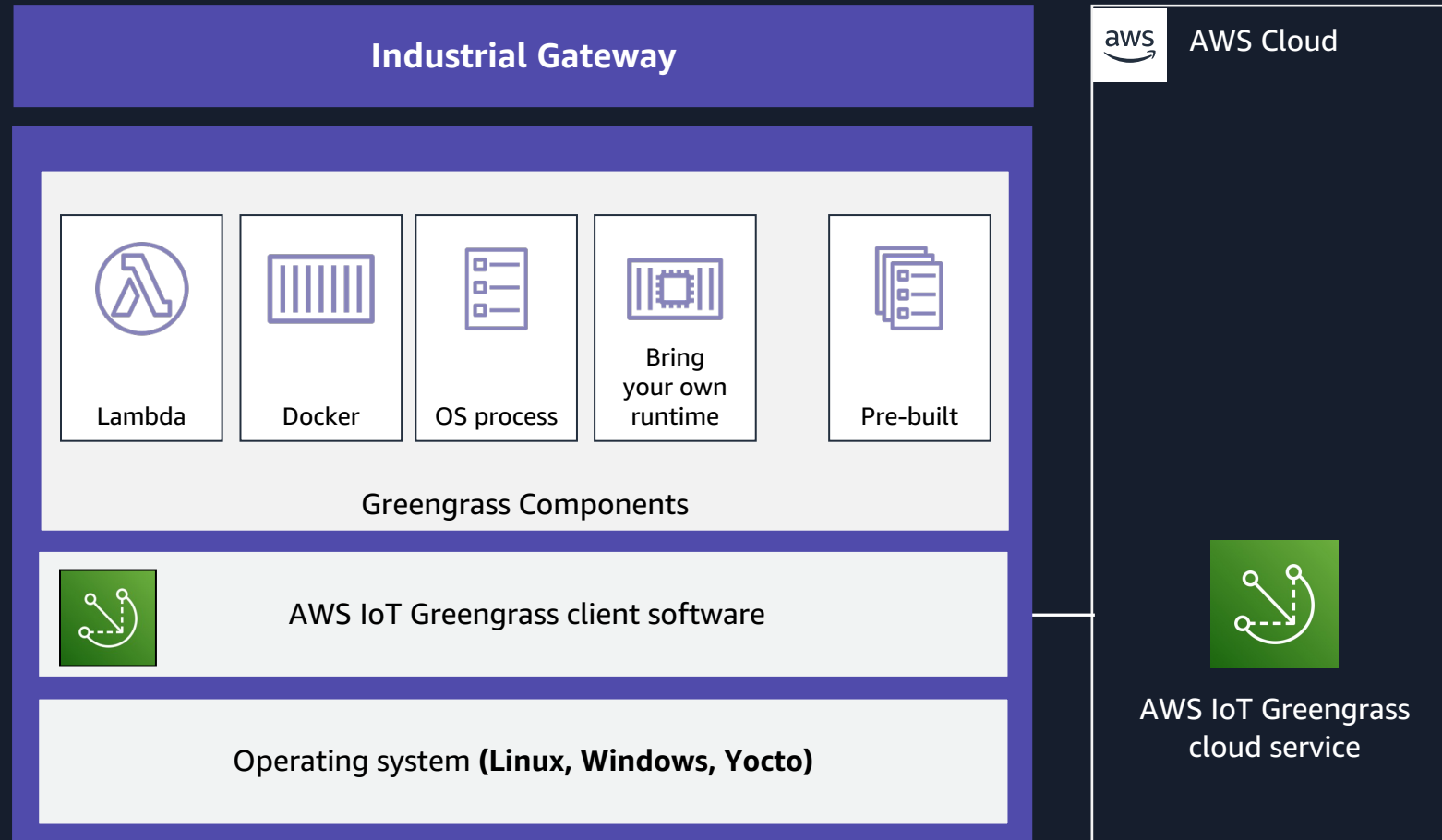




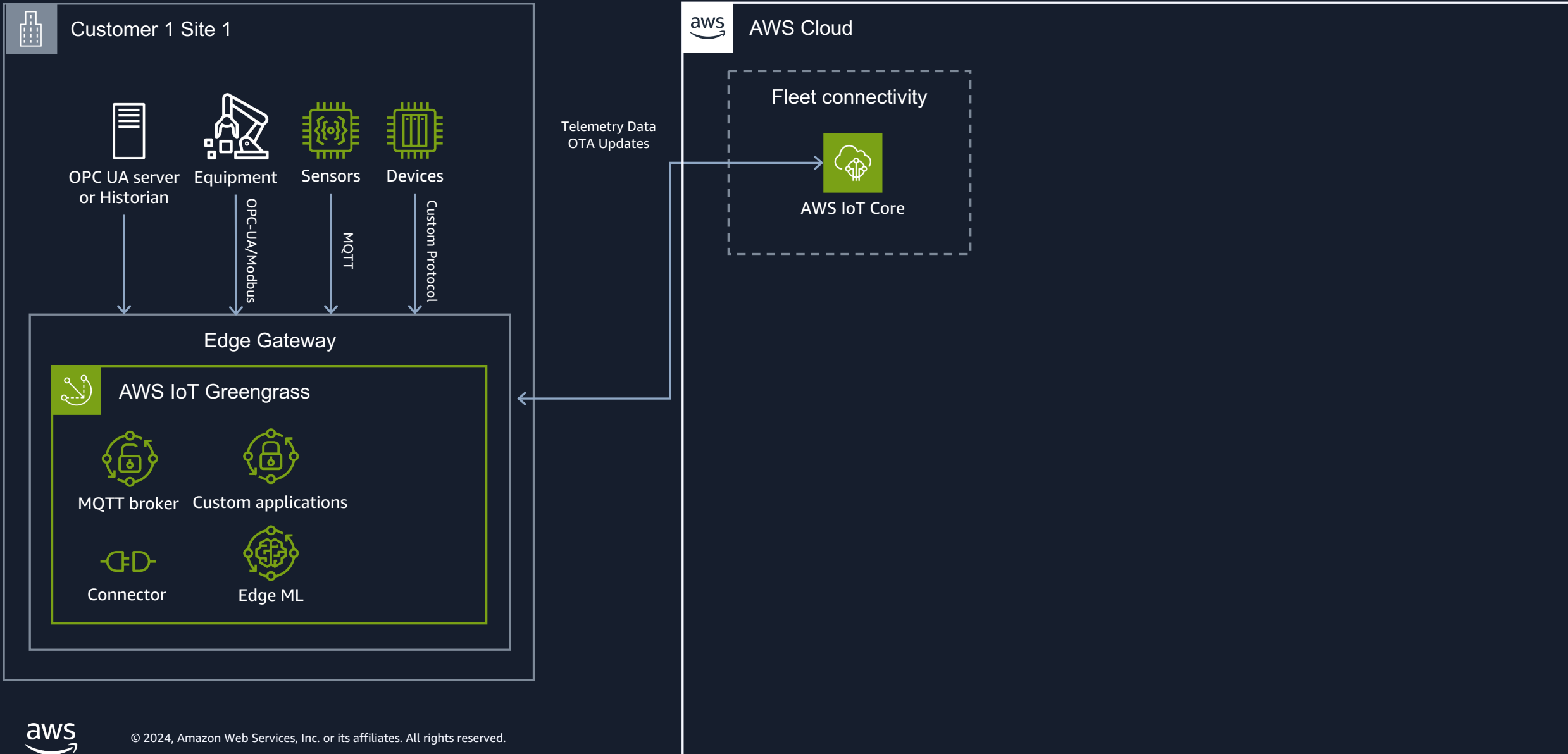
# Industrial Architecture: Edge processing



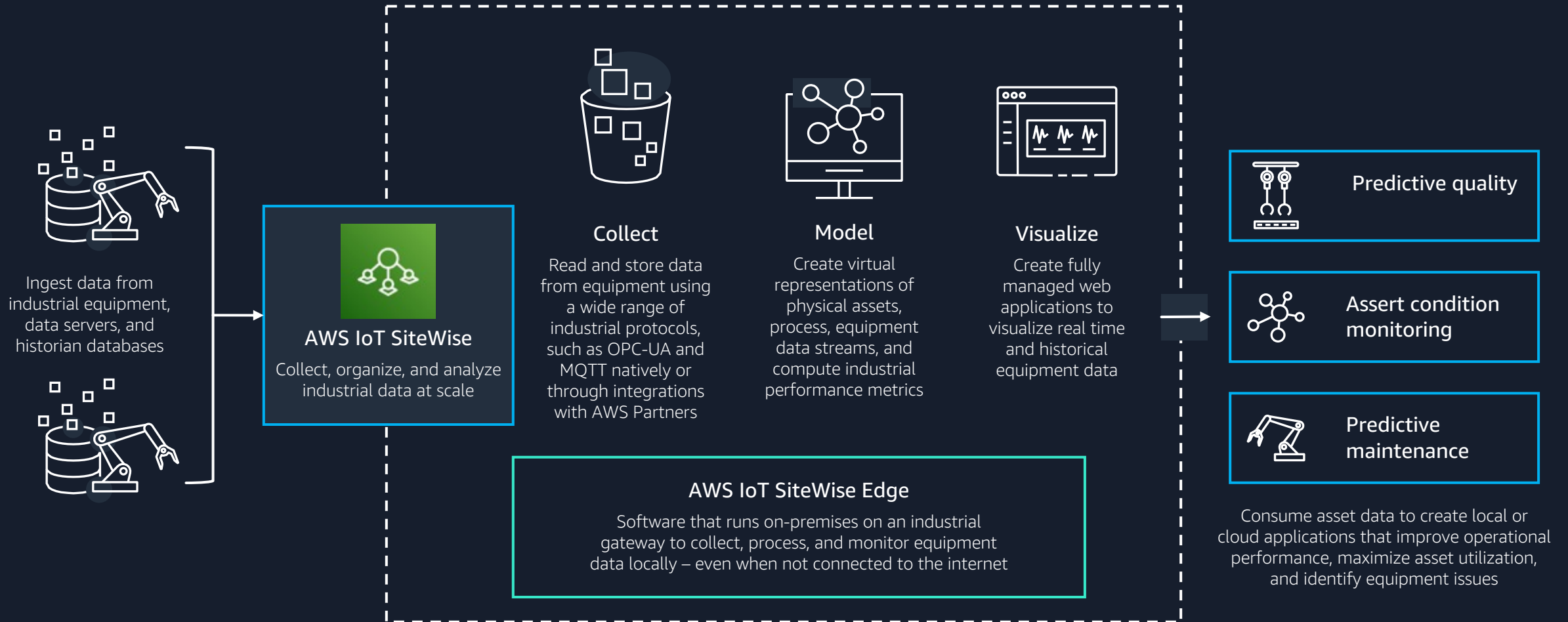
# AWS IoT Greengrass



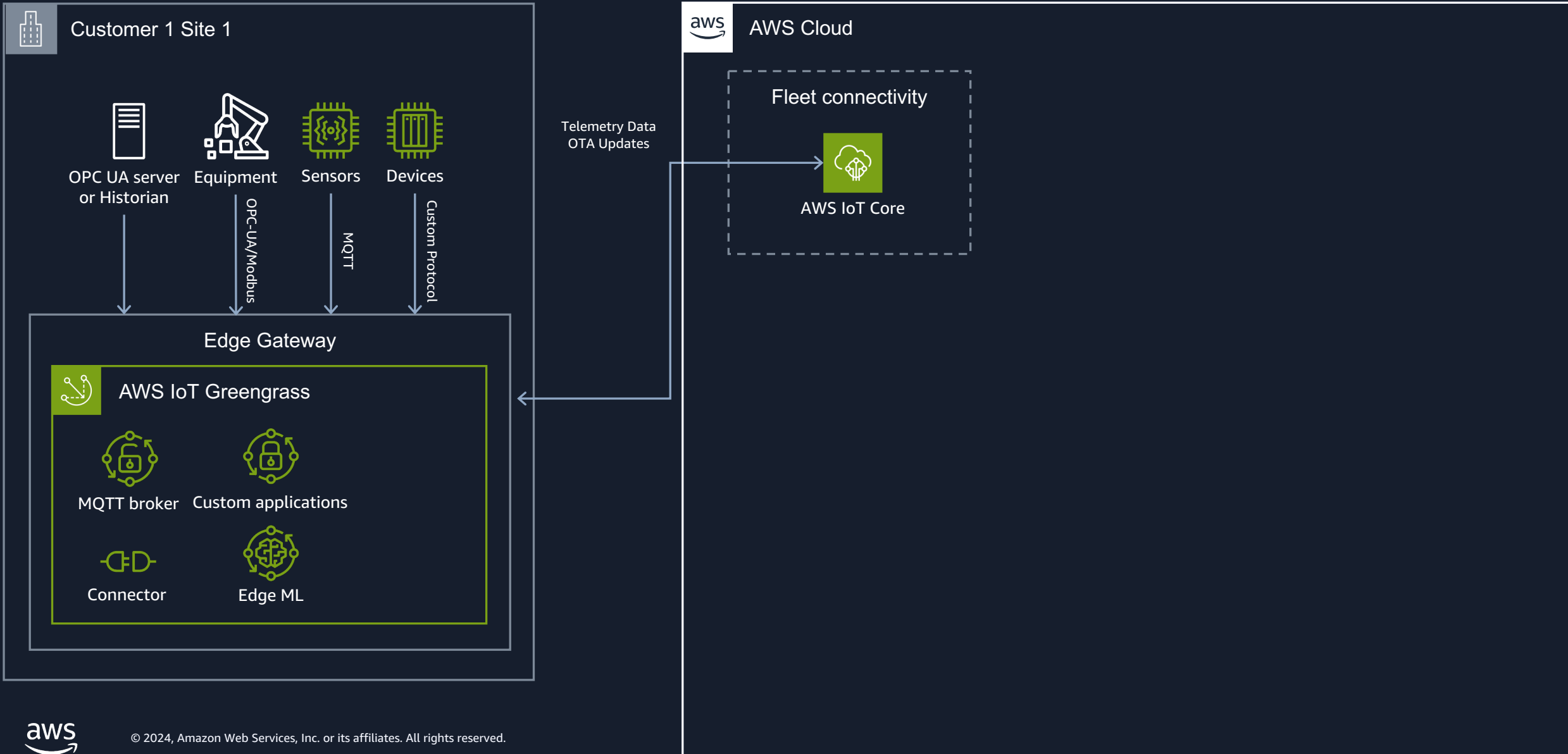
# Industrial Architecture: Edge processing



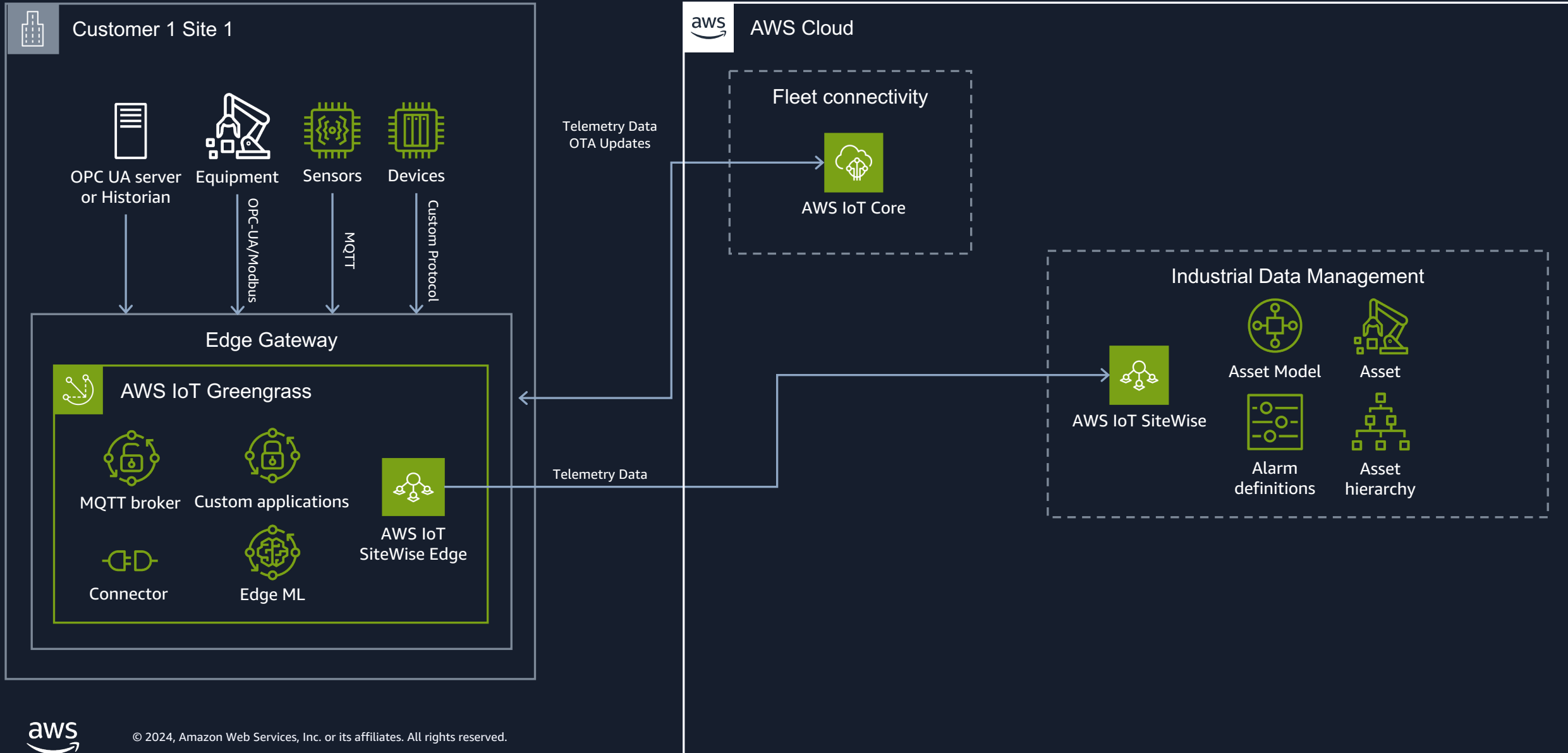
# AWS IoT SiteWise



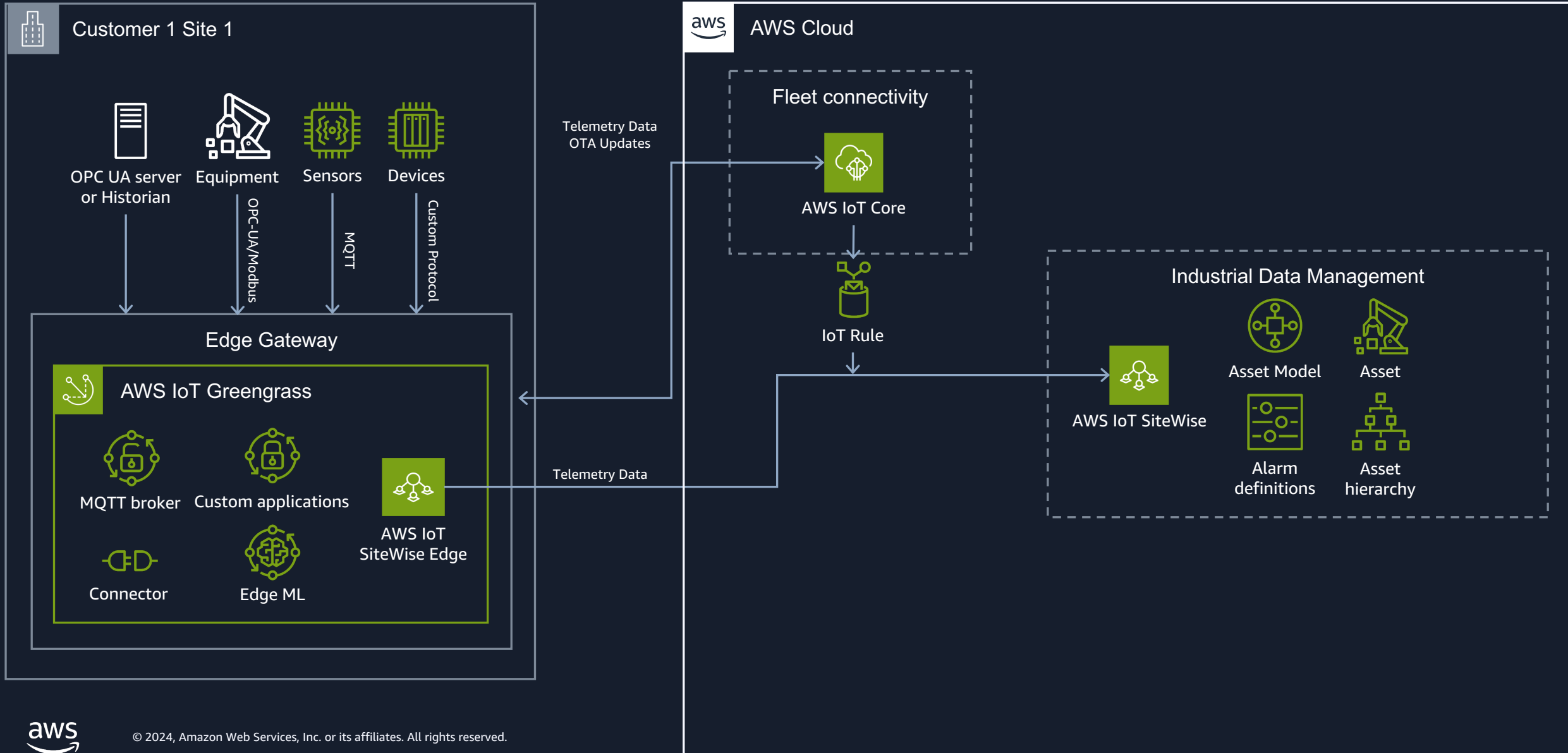
# Industrial Architecture: Edge processing



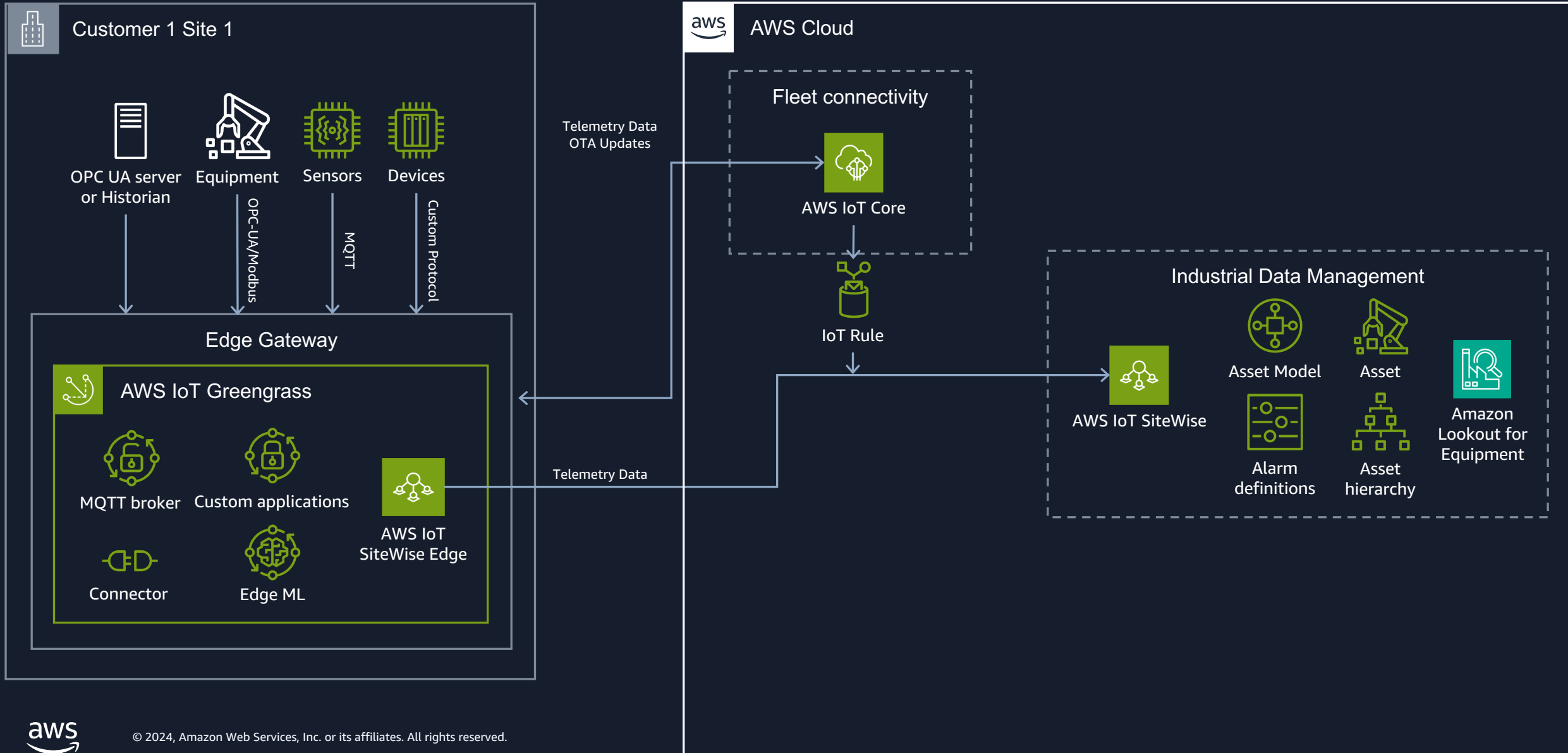
# Industrial Architecture: Data contextualization



# Industrial Architecture: Data contextualization

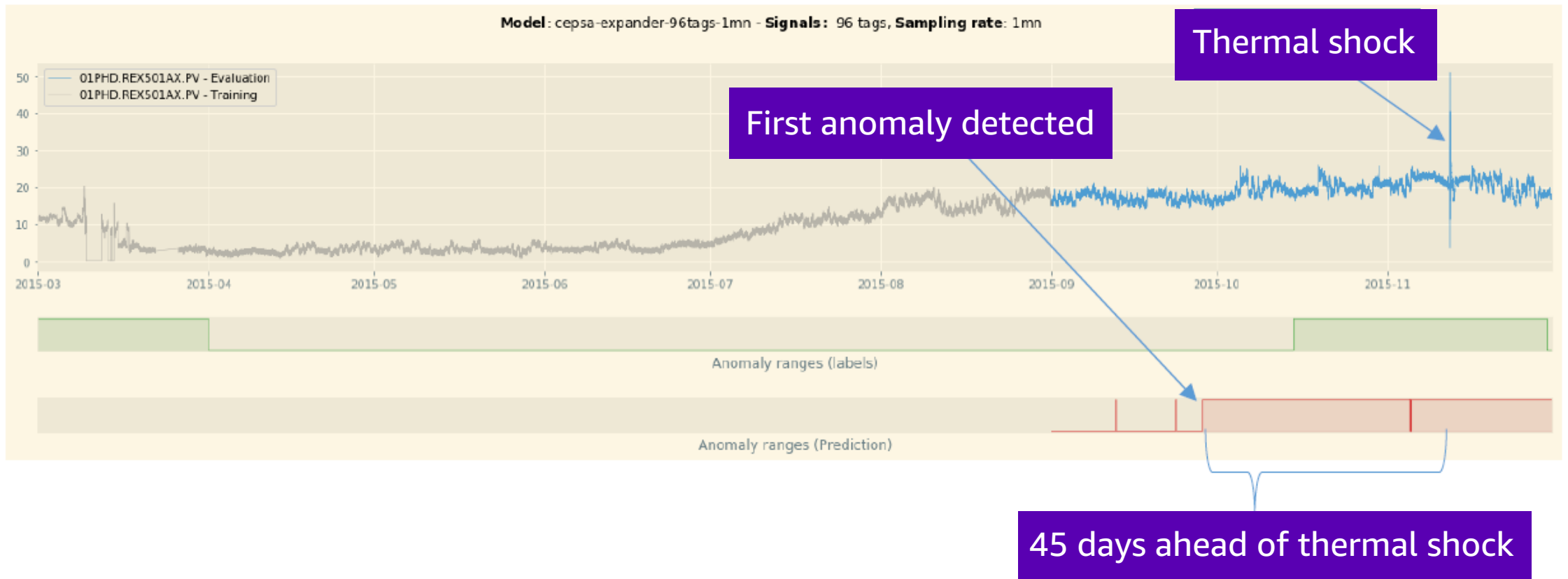


# Industrial Architecture: Predictive maintenance





# 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.

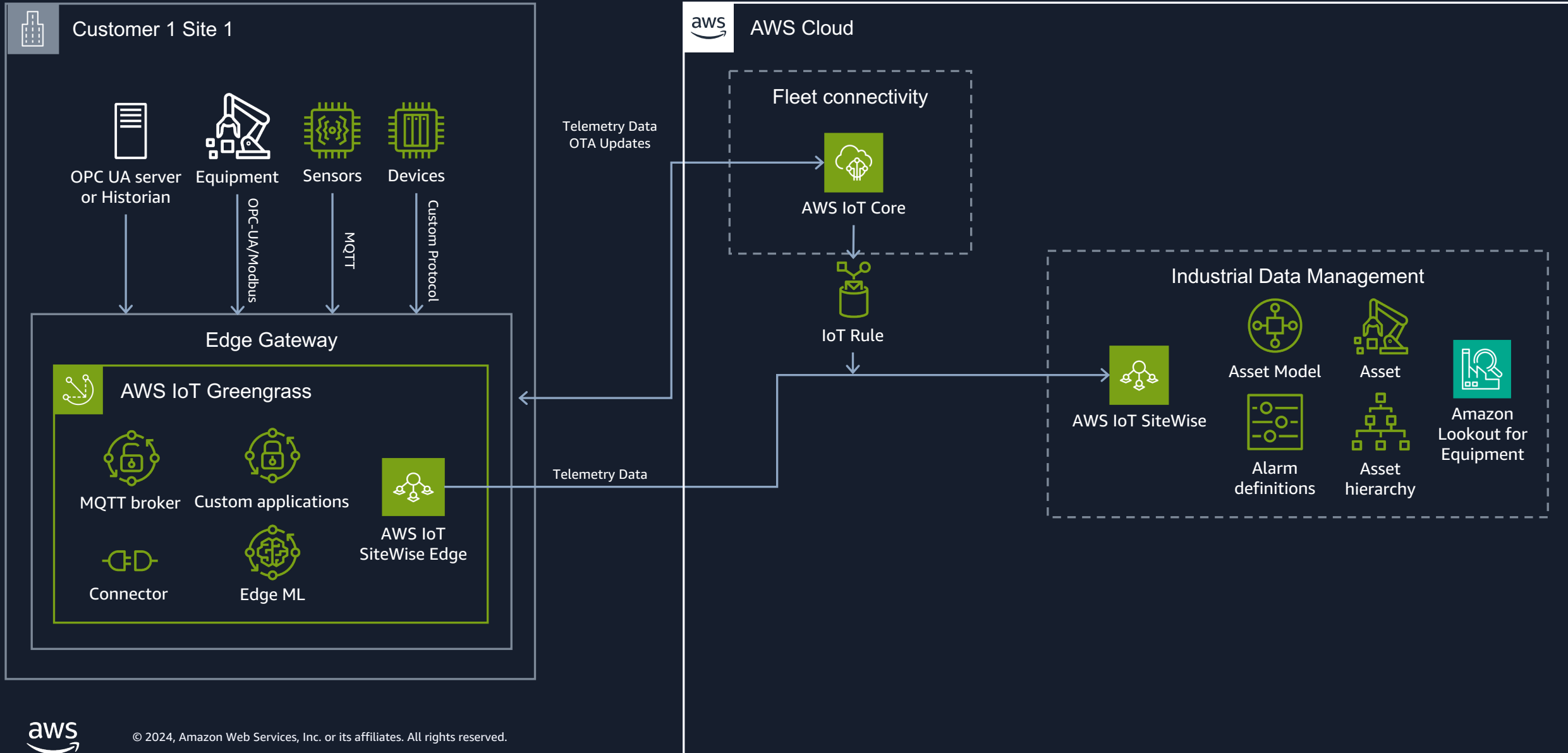
## IMPACT

- 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

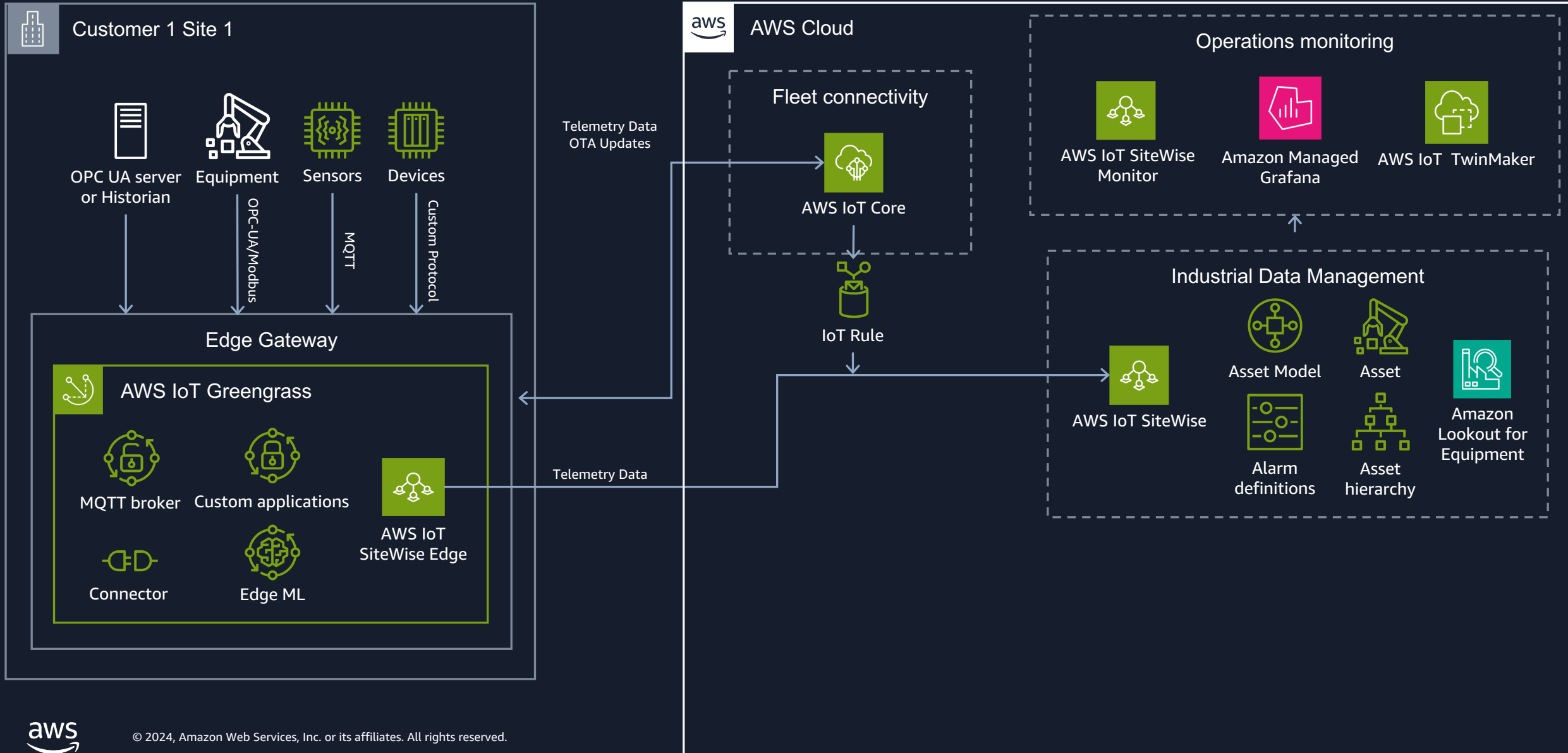
“The Operation Availability of our focus line was between 78-82%, incurring around 40 hours of downtime each month. With the help of AWS, we have found many problems in our machines, if left unnoticed would lead to critical failure. Now our OA is 92% and the downtime is around 20 hours!” - **Braden Burford,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



# Industrial Architecture: Predictive maintenance

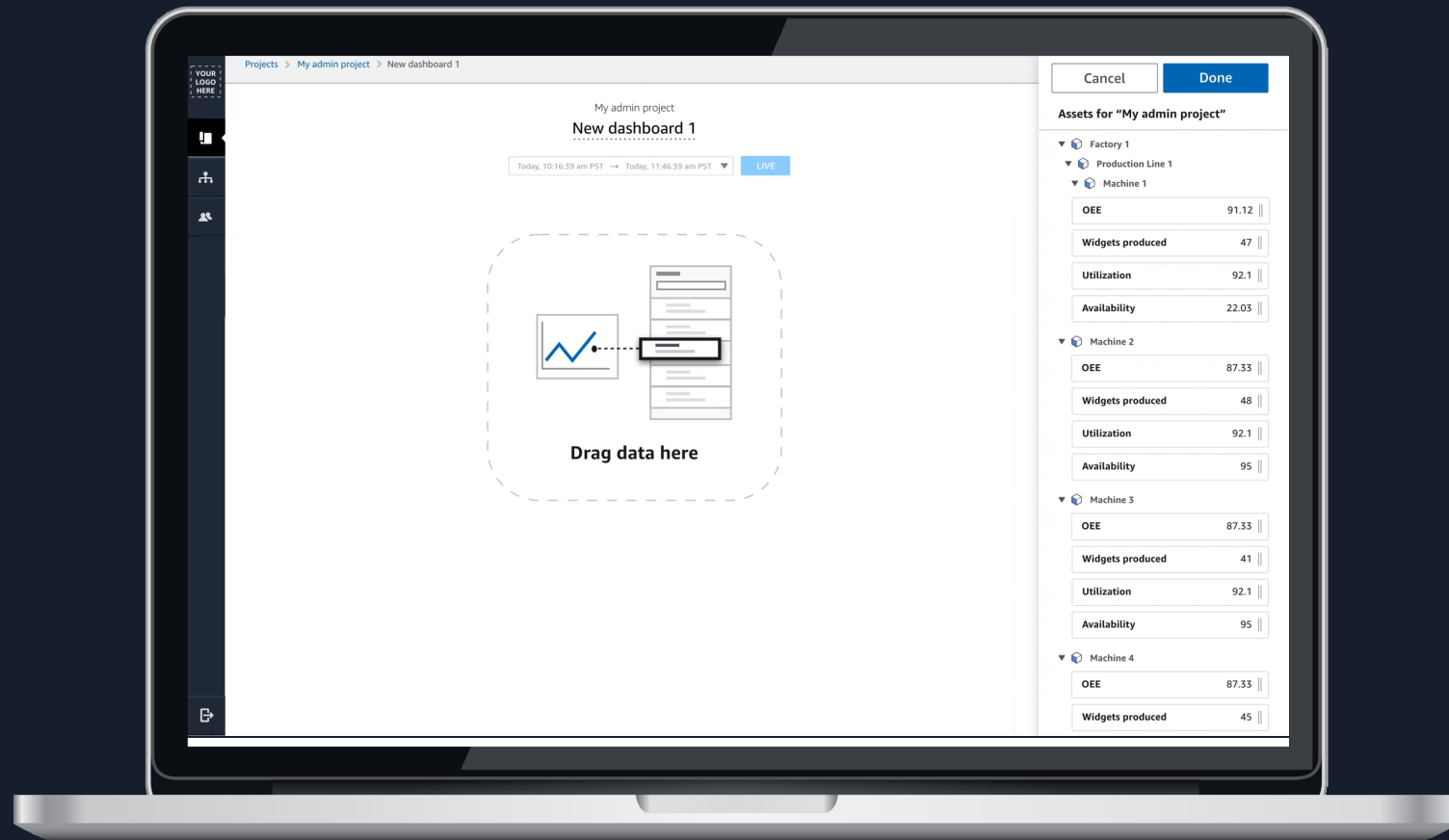


# Industrial Architecture: Real time visibility

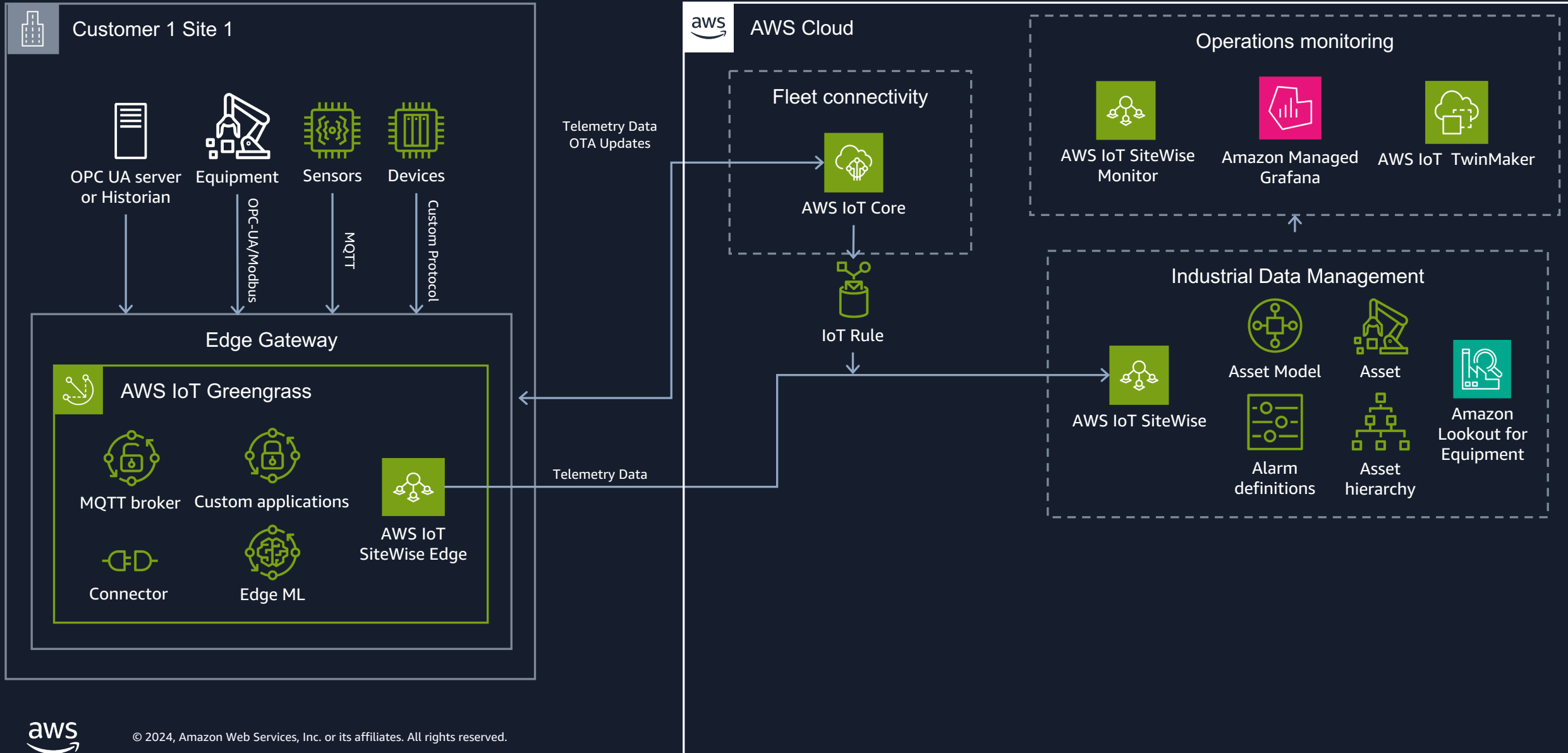


# AWS IoT SiteWise Monitor

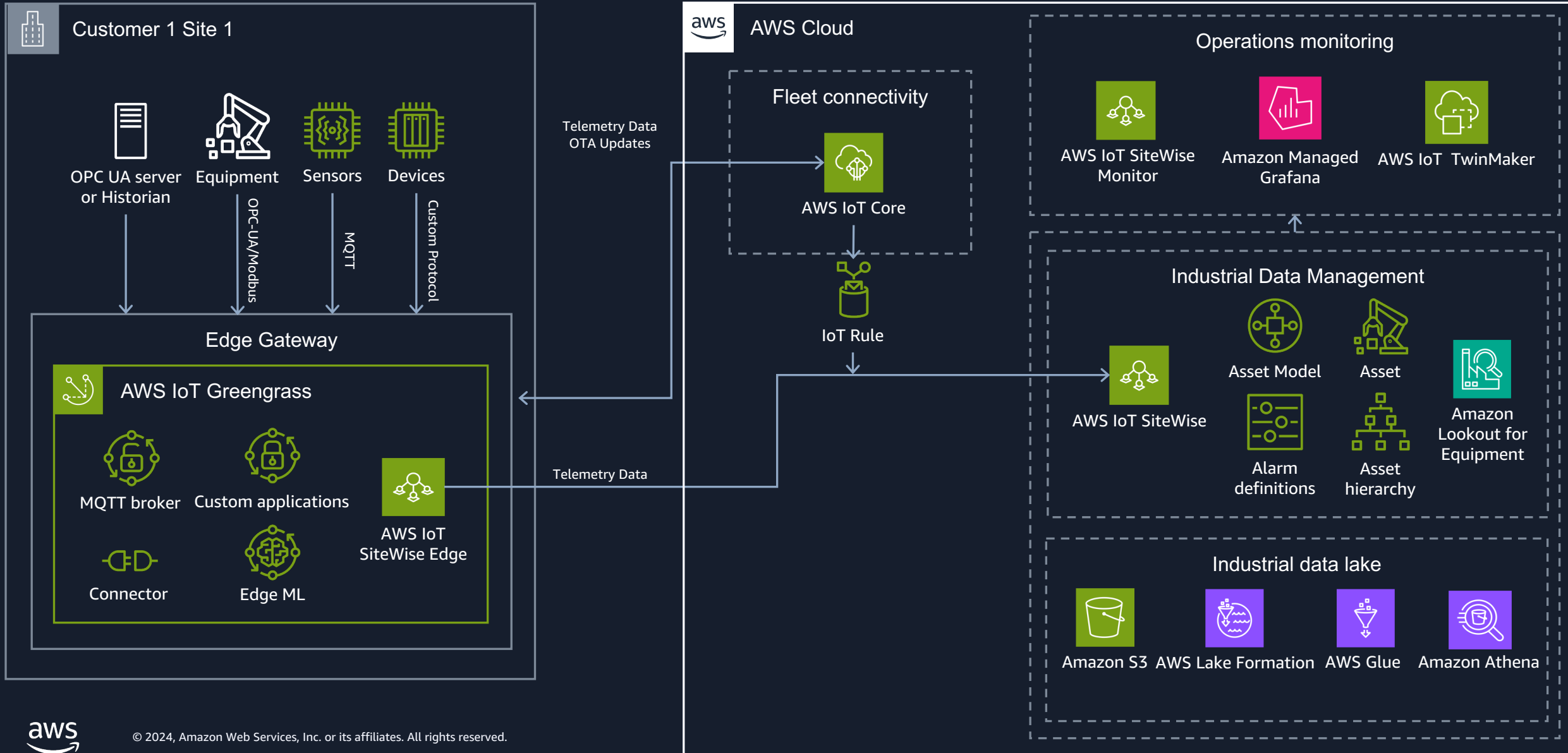
Create a fully managed web application for visualizing and interacting with operational data from devices and equipment connected to AWS IoT



# Industrial Architecture: Real time visibility

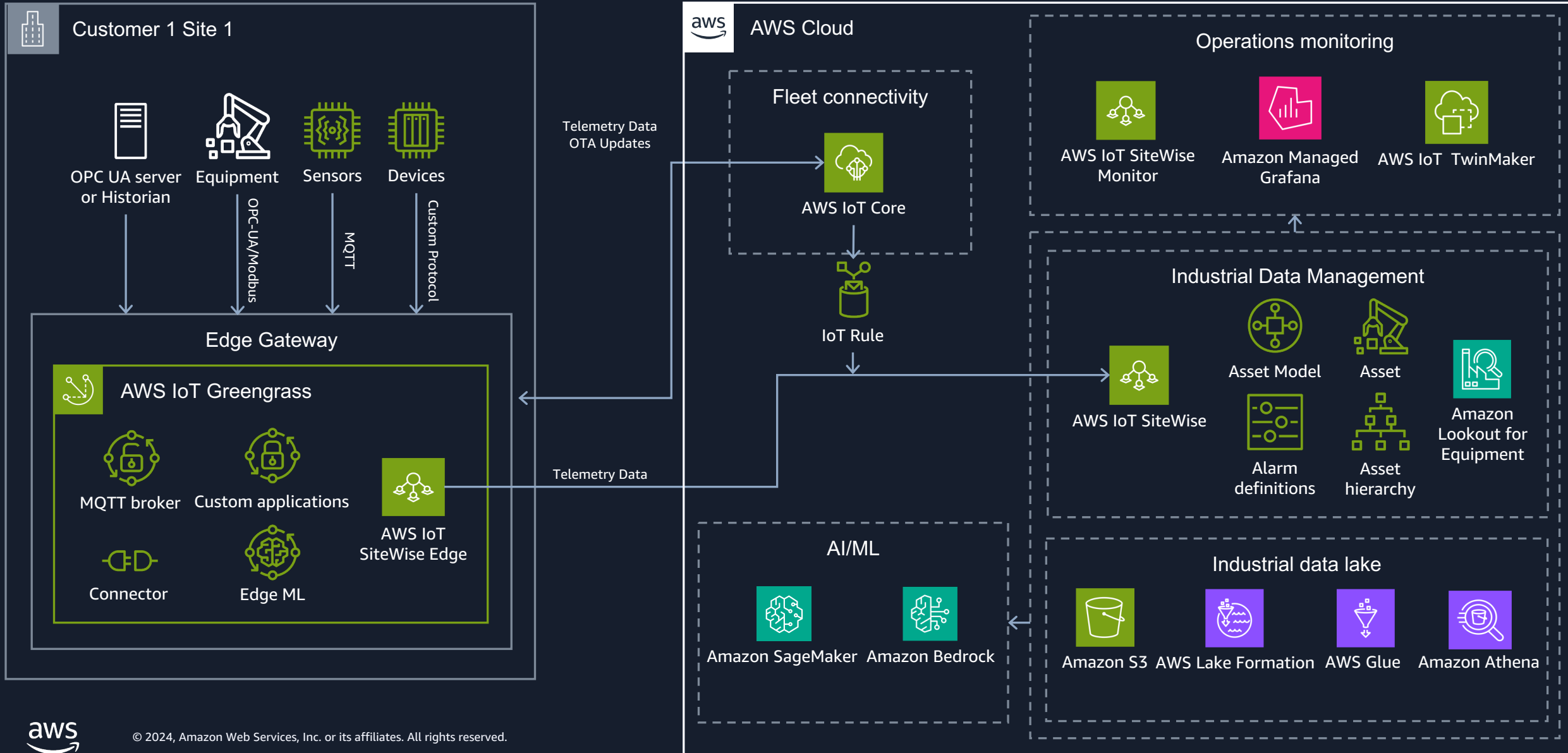


# Industrial Architecture: Real time visibility





# Industrial Architecture: Real time visibility







## 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!

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