



AWS
re:Invent

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Deep dive into what's new with AWS IoT in 2019

Gavin Adams

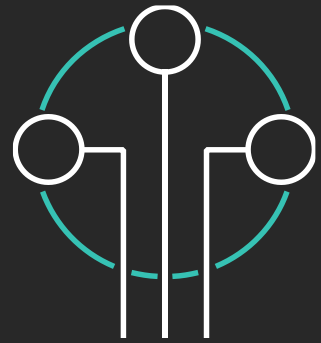
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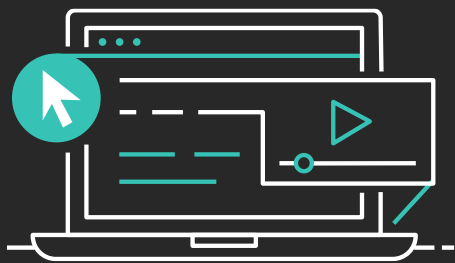
BDM – IoT Solutions
AWS

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Resources created by the experts at AWS to help you build IoT skills



Take the free digital curriculum, Internet of Things (IoT) Foundation Series, to build IoT skills and work through common scenarios



25+ additional free digital courses cover topics related to IoT, including:

- AWS IoT Core
- AWS IoT Greengrass
- AWS IoT Analytics
- AWS IoT Device Management
- AWS IoT Events

Visit the Learning Library at <https://aws.training>

Related breakouts

IOT338-R1 - Going from PoC to Production for IoT devices

IOT220-R - Building end-to-end solutions

IOT328-R1 - Field to cloud with AWS IoT

IOT336-R1 - Making homes smarter with AWS IoT

Agenda

- **New** AWS IoT **features** launched in 2019
- **Solutions** and architectures
- Questions and answers

AWS IoT service recap

Service status since 2018

- AWS IoT Things Graph now **generally** available
- AWS IoT Events now **generally** available
- AWS IoT SiteWise now in **public** preview

New AWS IoT features

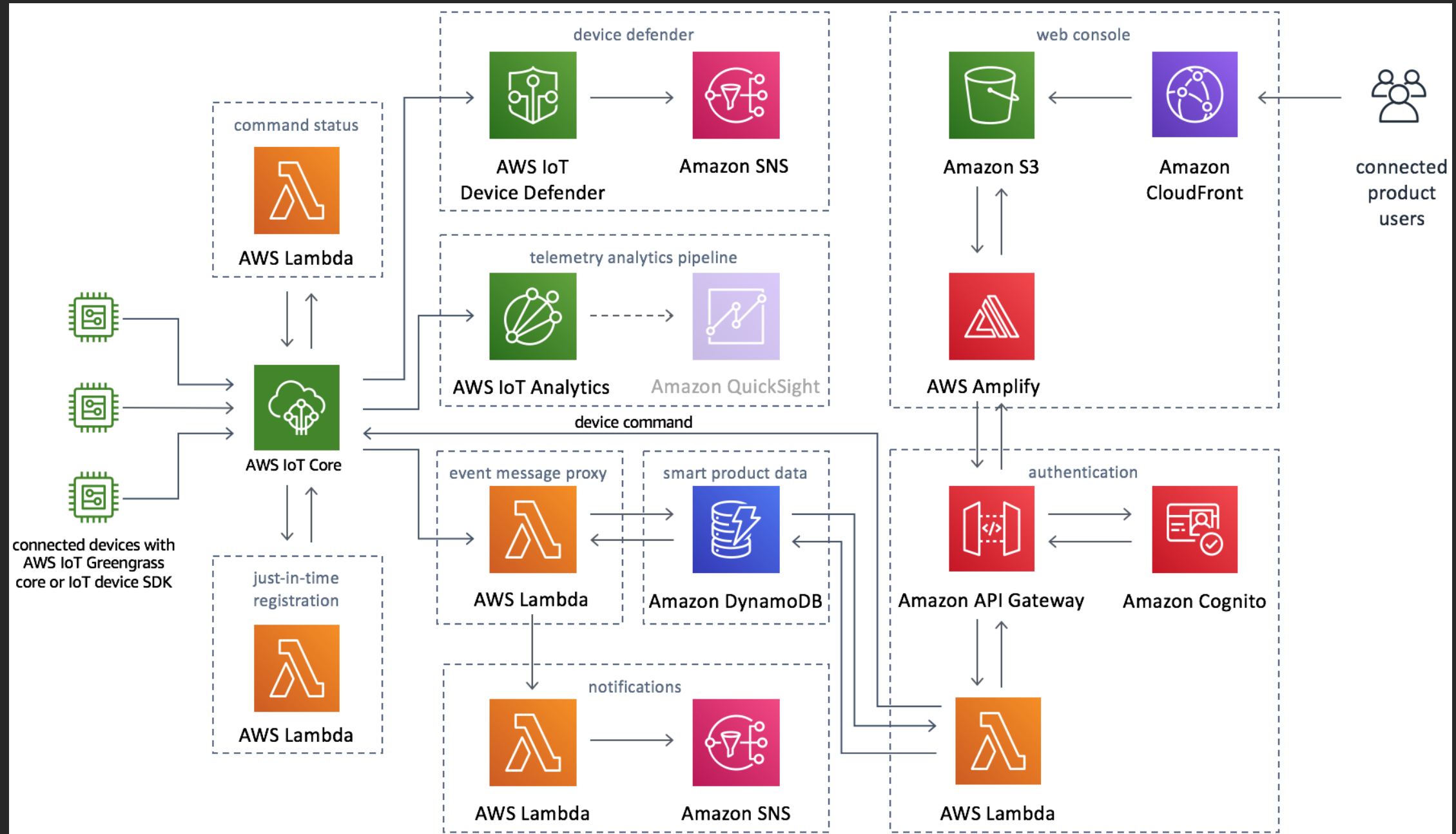
AWS IoT Core: New features

- Support for **Custom Authorizers** in AWS Mobile SDK for **iOS**
- Configurable quality of service (**QoS**) for **Republish Action**
- **Retrieve** data from **Amazon DynamoDB** using Rule SQL
- **Single step to set up devices** with digital identity and perform cloud-side and device-side configuration
- **Alexa Voice Service Integration** to stream voice to and from constrained devices **directly via AWS IoT Core**

AWS IoT Core: New features

- Bring your own domain names via Custom Domains (beta)
- Configurable Endpoints provide **multiple endpoints** to support old and new behaviors (beta)
- Enhanced Custom Authorizers with **callback support** to your own authentication and authorization code for MQTT connections and MQTT CONNECT **user name and password** (beta)
- New Rules Action delivers messages to HTTP endpoints

Smart product solution



AWS IoT Device Management: New features

- **Count** number of **devices** that match a given query
- **Secure Tunneling** to access, troubleshoot, and fix IoT devices that are behind a restrictive firewall

AWS IoT Device Defender: New features

- **Mitigation** actions
- **Audit** results

AWS IoT Analytics: New features

- **Single-step setup** of AWS IoT Analytics resources
- **Dataset** content delivery to **Amazon S3**

AWS IoT Events

- AWS Lambda, Amazon SQS, and Amazon Kinesis Data Firehose as **targets**
- **AWS CloudFormation** template **support** for detector and input resources

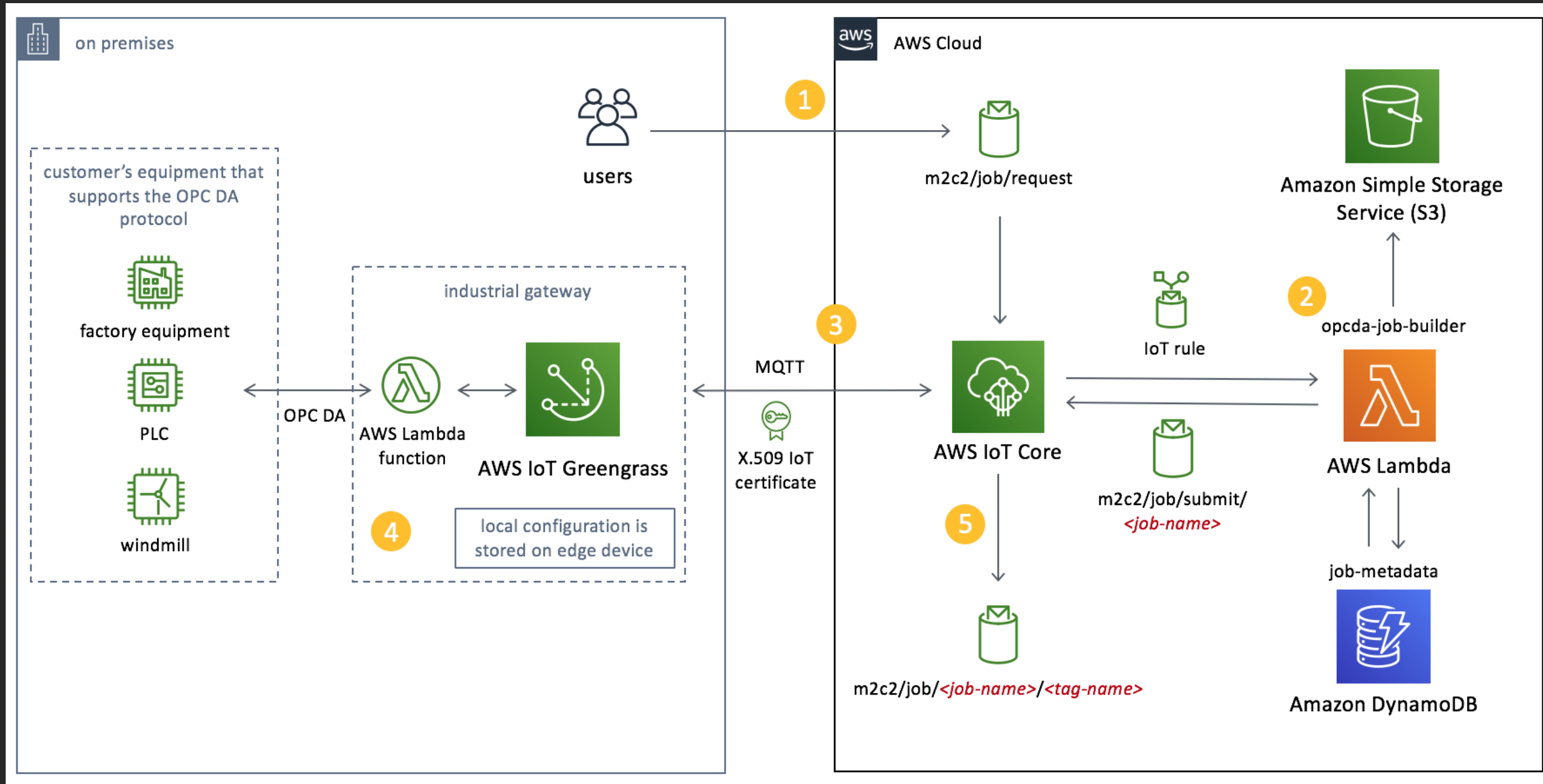
AWS IoT Things Graph

- Workflow **monitoring** with **Amazon CloudWatch**
- Cloud deployment

AWS IoT SiteWise

- Now in **public preview**
- AWS IoT SiteWise Monitor is a fully managed SaaS **web application**
 - **Visualize** and **interact** with devices and equipment connected to AWS IoT
 - **Gain insights** and **explore** equipment data
 - Configure **dashboards**
 - Set rule-based **alerts to monitor assets**

Machine to cloud connectivity framework



Amazon FreeRTOS: New features

- **Qualified** system on chips
 - Renesas RX65N, Cypress CYW94..., CYW95..., NXP i.MX-RT1060, NXP i.MX-RT1050, NXP Kinetis K64
- **RISC-V** support in FreeRTOS kernel
- Resource tagging for **OTA** and **customer configurations**
- **BLE** and new **MQTT** libraries are now **generally available**

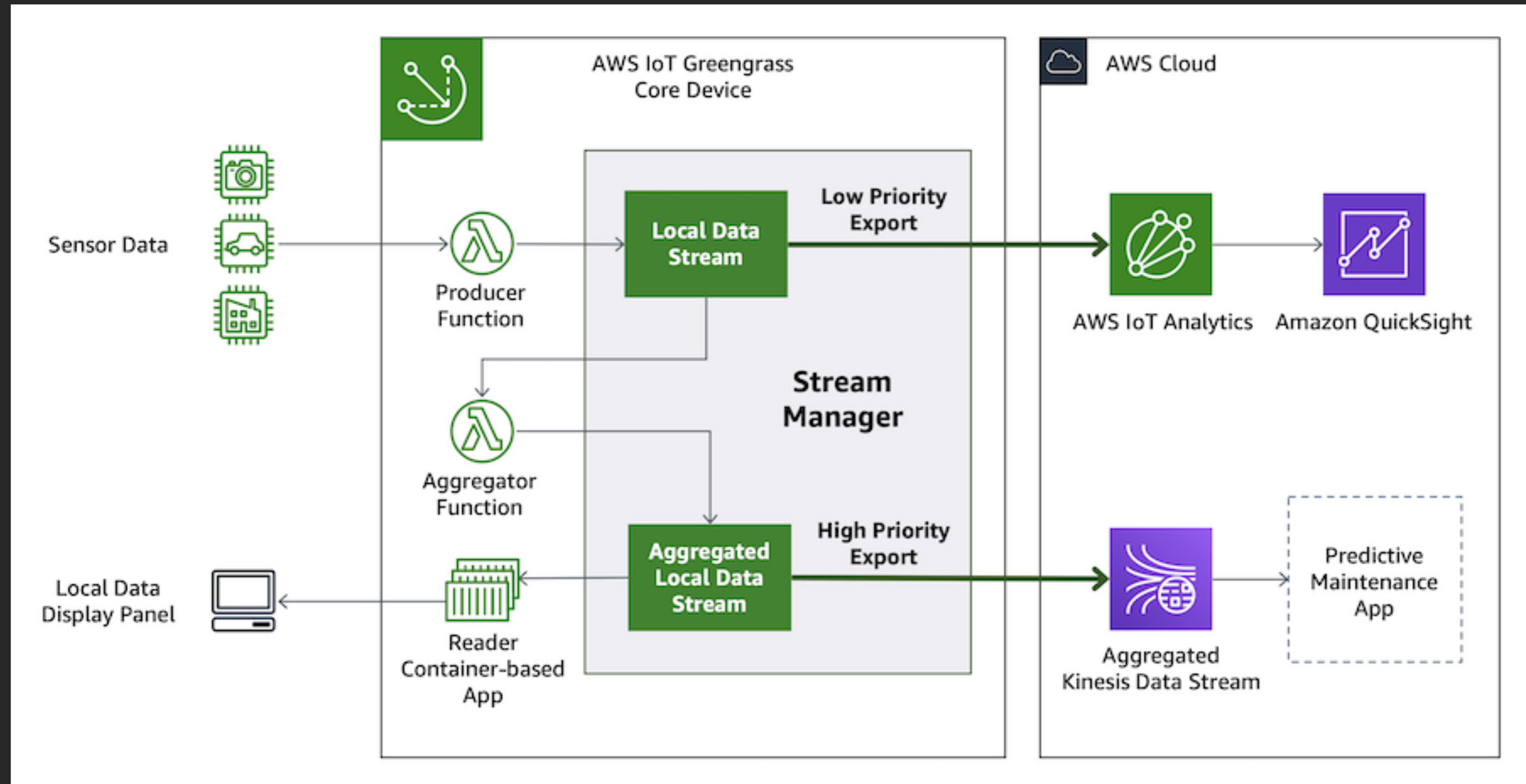
AWS IoT Greengrass: New features

- New **networking configuration options** – Port 8883/443 for MQTT and HTTPS, predictable MQTT clientId
- Integration with **Fleet Indexing**
- **Connectors**
 - AWS IoT Analytics
 - Machine Learning Object Detection
 - Machine Learning Feedback Connector
- AWS **CloudFormation support**
- Python 3.7, Node v8.10.0 **language support**
- **Elliptic-curve cryptography** between cores and attached IoT devices via HSI

AWS IoT Greengrass: New features (continued)

- **OpenWRT** support using Linux Kernel 3.17 or later (Armv7l, Armv8)
- ARMv6 (**32-bit**)
- Deployment **notifications** via Amazon EventBridge
- Stream Manager for AWS IoT Greengrass
 - Collect, process, and analyze streams
 - Manage lifecycle of data
 - Send streams to cloud or on-premises targets
- Deploy, run, and manage **containers in AWS IoT Greengrass-enabled devices** via the Docker Application Deployment Container

Stream Manager for AWS IoT Greengrass



Solutions and architectures

AWS IoT solutions repository

1. Connected Vehicle
2. IoT Device Simulator
3. Real-Time IoT Device Monitoring with Amazon Kinesis Data Analytics
4. Machine to Cloud Connectivity Framework
5. Smart Product Solution
6. AWS IoT Camera Connector
7. Extract, Transform, Load (ETL) with AWS IoT Greengrass
8. AWS IoT Greengrass Machine Learning Inference (MLI)

<https://aws.amazon.com/iot/solutions>

Q&A

Thank you!

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