

AWS IoT

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Securely connect billions of devices to AWS, so they can interact with applications and other devices.



AWS IoT is a managed cloud platform

Key Elements to an IoT Platform



Protocol support



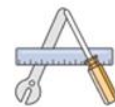
Scalability



Security



Integration and analytics

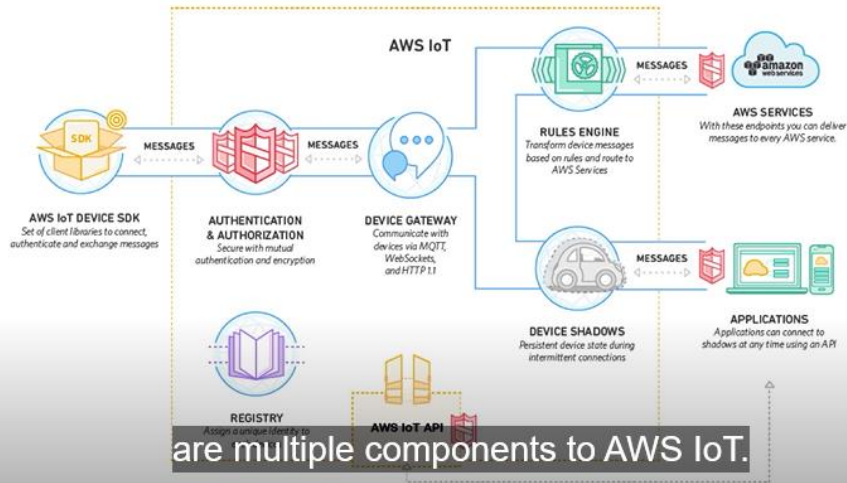


SDKs and tools

An IoT platform should provide protocol support

AWS IoT – Components Overview

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AWS IoT - Message Broker



Billions of devices can publish and subscribe to messages

Example: Connect a device using MQTT



Messages are transmitted and received using the MQTT protocol which minimizes the code footprint on the device and reduces network bandwidth requirements



AWS IoT enables devices to communicate with AWS services and each other

Sensor/temp/room1

When communicating with AWS IoT,

Play



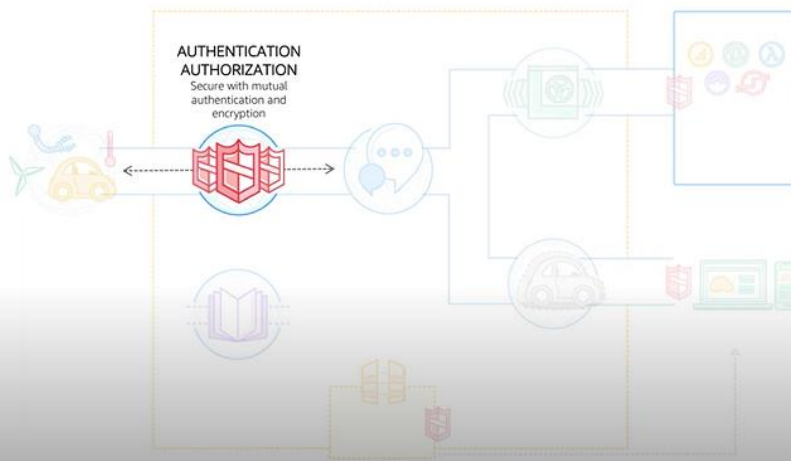
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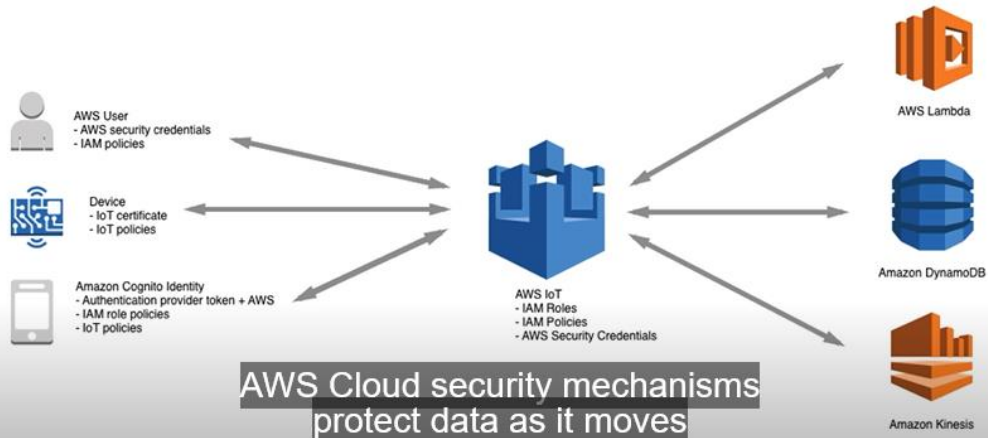
AWS IoT - Security

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Security and Identity

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Authentication and Authorization



- 📦 X.509 certificates
- 📦 IAM users, groups, and roles
- 📦 Amazon Cognito identities
- 📦 Federated identities
- 📦 AWS IoT policies
- 📦 IAM policies

AWS IoT supports four types

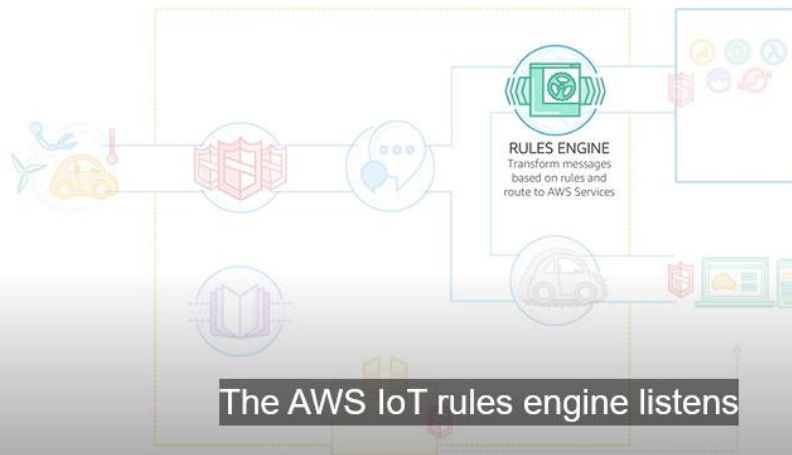


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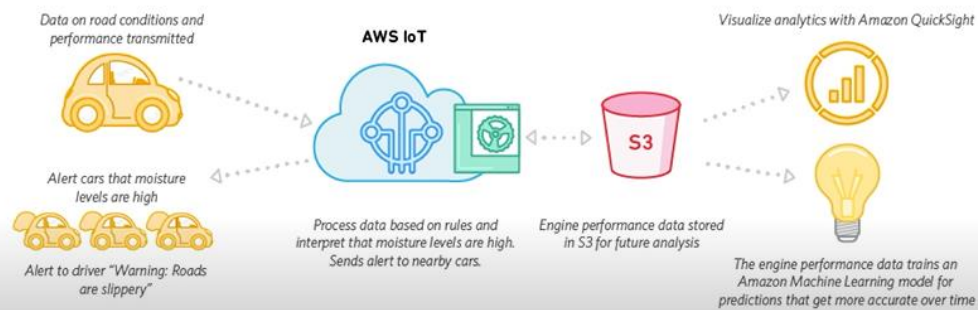
AWS IoT – Rules Engine



AWS IoT – Rules Engine

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Example: Improve driver safety with connected cars



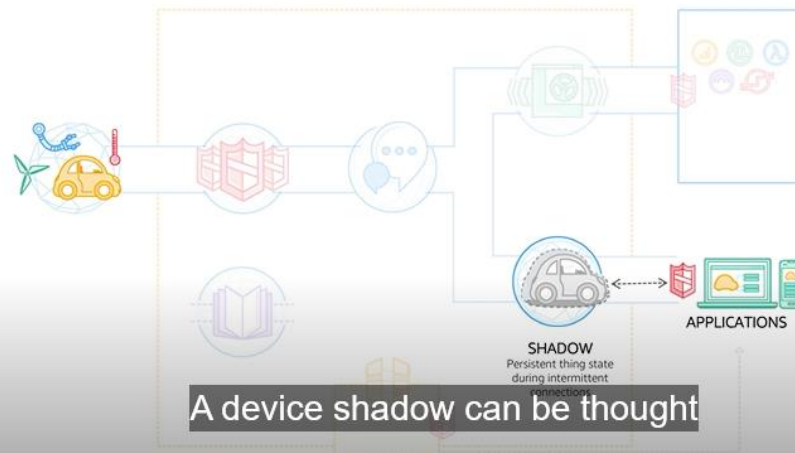
To see how a rules engine would work,



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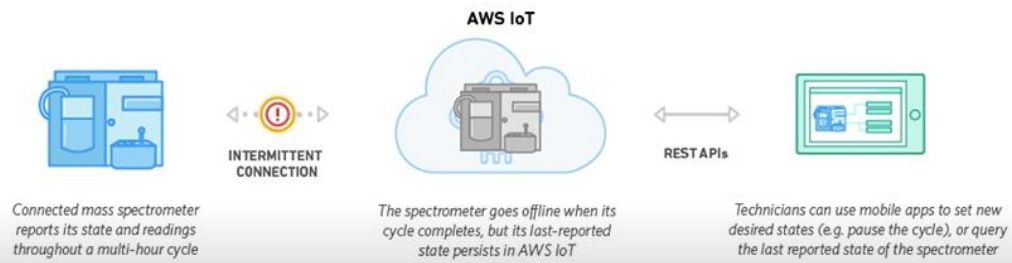
AWS IoT – Device Shadow



AWS IoT – Device Shadow



Example: Analyze chemicals in a sample with a mass spectrometer



Let's look at an example of a mass spectrometer.



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AWS IoT – Device Registry



of as a database of devices.

AWS IoT – Device Registry



Thing Type	Thing
Light Bulb	My Light Bulb

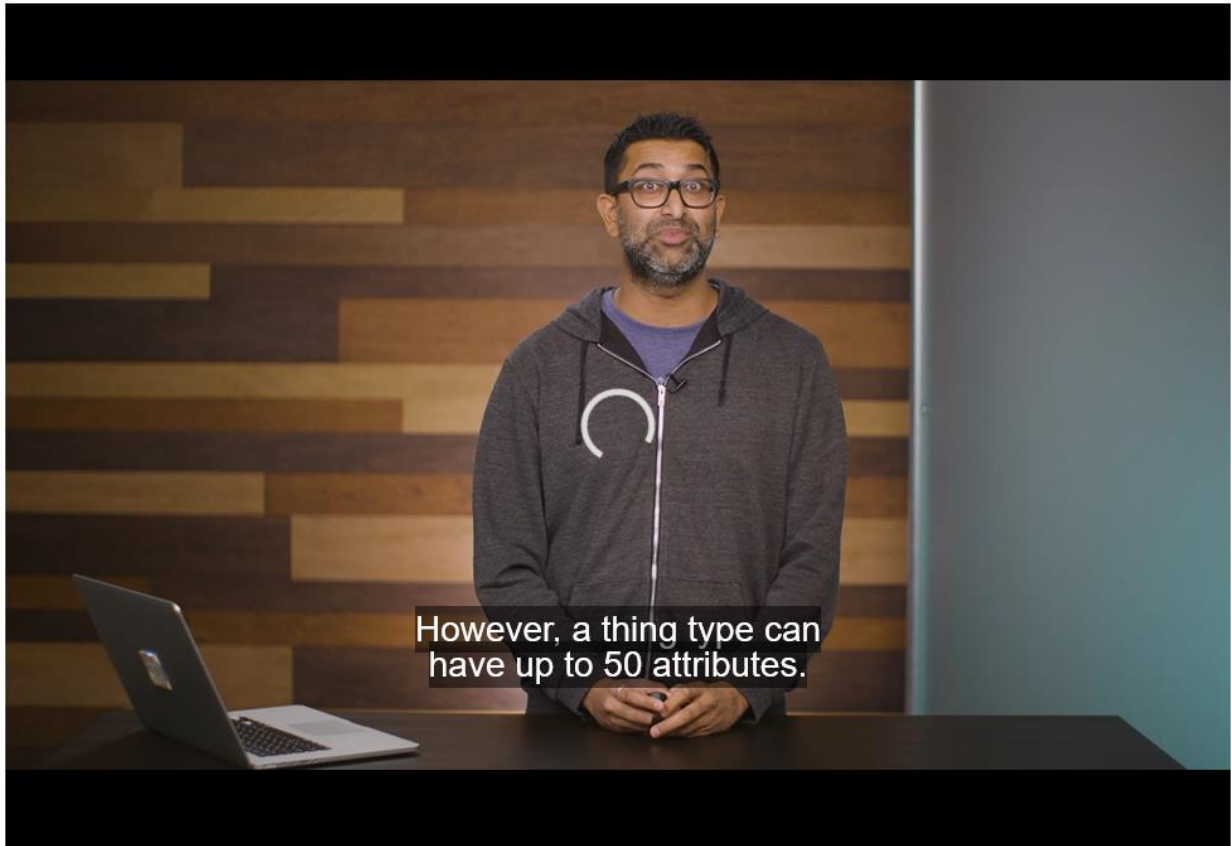
- Static attributes associated to Thing
 - Firmware version
 - Serial numbers
- Support and maintenance
 - Reference manual URL
 - Part # reference
 - Reference to external support system

Rewind 10 Seconds

I can have a thing type called Light Bulb.

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CC



AWS IoT – Device SDK



C-SDK
(Ideal for embedded OS)



JS-SDK
(Ideal for embedded Linux Platforms)



Arduino Library
(Arduino Yun)



Mobile SDK
(Android and iOS)

of C source files that can be
used in embedded applications



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AWS – Hyperscale Infrastructure



AWS Lambda
Run code in
response to events



Amazon DynamoDB
Predictable and scalable
NoSQL data store



Amazon Kinesis
Streaming analytics



Amazon API Gateway
Build, deploy, and manage
APIs



Amazon Redshift
Petabyte-scale
data warehouse



Amazon SNS
Mobile push
and notifications



Amazon Cognito
User identity and data
synchronization

...and more.

anyone to run your code.



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AWS IoT – Rapid Development

