Getting Started with AWS IoT

Lec 7

01/05

A grill manufacturer released a mobile companion application for its grills. With this application, they can automatically send updates to the grills for things like security updates and user experience updates.

What is the virtual representation of the physical grill called?

⊗   Device

⊗   AWS IoT thing group

✓   AWS IoT thing

⊗   OTA update

A solutions architect at a manufacturing plant needs Internet of Things (IoT) sensors to detect when machines require service so that the manufacturer can repair the machines before they break down.

What is this proactive identification and resolution of potential problems called?

⊗   Core services

✓   Predictive maintenance

⊗   Device Shadow service

⊗   Device registry

An Internet of Things (IoT) architect is overseeing the installation of new IoT sensors that will detect machine changes on a manufacturing production line.

Which type of device are these new sensors?

⊗   Device gateway

⊗   Mobile device

⊗   Tablet device

✓   Embedded device

An Internet of Things (IoT) architect is preparing to install new sensors on their company's manufacturing equipment. These sensors will obtain important data about the state of the machinery.

Which type of AWS IoT use case is the manufacturing corporation preparing to install?

⊗   Automotive

⊗   Consumer

⊗   Commercial

✓   Industrial

A vehicle manufacturing company provisions new cars with the necessary software during manufacturing and then activates the software when the car is purchased.

What would the company use to activate the software on the newly purchased vehicles?

ⓧ   Actuators

ⓧ   Message broker

✓   Over-the-air (OTA) updates

ⓧ   Rules

LECTURE 8

Securely Connecting AWS IoT Devices to the Cloud

Which of the following components of AWS Internet of Things (IoT) Core serves as the secure entry point for IoT devices connecting to the AWS Cloud?

- ⊗ Security and identity

- ⊗ Device registry

- ✓ Device gateway

- ⊗ Message broker

What are the key areas where security is applied to Internet of Things (IoT) systems? (Select TWO.)

- ☑ AWS IoT certificates and policies

- ☒ Authentication policies

- ☑ AWS Identity and Access Management (IAM) roles and policies

- ☒ Device certificates

- ☒ Security policies and permissions

Which of the following options completes this statement?

AWS IoT policies are JSON documents that contain a set of:

✓ permissions

✕ attributes

✕ certificates

✕ metadata

Which of the following are MQTT policy actions? (Select THREE.)

☑ Subscribe

☑ Connect

☒ Shadow

☑ Publish

☒ Message

What is the method used to store descriptive information about an AWS Internet of Things (IoT) thing, such as its serial number or manufacturer?

⊗ Thing names

✓ Thing attributes

⊗ Thing types

⊗ Thing groups

In the process of provisioning a device, what security credential does AWS Internet of Things (IoT) Core create for authentication of the device?

⊗   SDK

⊗   AWS IoT policy

✓   X.509 certificate

⊗   IAM role

⊗   IAM policy

In addition to maintaining a list of devices and their attributes, the device registry can also publish event messages when things change.

What are some of the events communicated? (Select THREE.)

[×] authorization

[✓] creation

[×] migration

[✓] update

[✓] deletion

[×] modify

Which of the following are keys found in an AWS Internet of Things (IoT) policy statement? (Select THREE.)

- [✓] Action

- [✗] Allow

- [✗] Create

- [✓] Effect

- [✓] Resource

- [✗] Deny

Internet of Things (IoT) devices and clients need to communicate with each other and with the AWS IoT services.

What is the lightweight, publish-subscribe communication protocol commonly used for this purpose?

- ⊗ iot:Publish

- ✓ **MQTT**

- ⊗ iot:Receive

- ⊗ X.509

Handling AWS IoT Device Data and States

What format is most frequently used within the MQTT protocol to carry messages?

⊗ XML

⊗ YAML

⊗ HTML

✓ JSON

What is a good analogy to describe the structure of a topic name?

- ⊘ A namespace hierarchy

- ⊗ A trail of directions for messages

- ⊗ A set of side-by-side boxes

- ⊗ An address in IoT Core for the messages

Which of the following topics is a valid topic?

⊗ sensor\temperature\truck_1\main_freezer

⊗ sensor-temperature-truck_1-main_freezer

✓ sensor/temperature/truck_1/main_freezer

⊗ sensor/temperature/truck 1/main_freezer

Which topic wildcard matches any string in the level
that contains the character?

| ✓ | + |

| ✕ | * |

| ✕ | & |

| ✕ | # |

A rule has at a minimum:

⊗ A name, a query statement, and at least one tag

⊗ A name, a description, and at least one action to take

✓ A name, a query statement, and at least one action to take

⊗ A name, a description, and at least one tag

To receive the message from the following topics:

- sensor/temperature/truck_1

- sensor/humidity/truck_1

What topic filter should you use?

| ✓ | sensor/+/truck_1 |

| ✕ | sensor/#/truck_1 |

| ✕ | sensor/truck_1/* |

| ✕ | sensor//truck_1 |

What is a good comparison to illustrate the role of the Message Broker?

(×)   A set of IAM policies

(✓)   An information desk

(×)   A warehouse for messages

(×)   An offline copy of a device in a JSON document

LECTURE 9

Managing AWS IoT Devices at Scale

Which service is used to define a set of remote operations that can be sent to and run on one or more devices connected to AWS IoT?

⊗   AWS IoT Logs

⊗   AWS IoT Device Management

⊗   Amazon CloudWatch

✓   AWS IoT Jobs

Which of the four functional pillars of device management includes the provisioning stage of bringing devices online and ensuring they are ready to use?

⊗ Monitor

⊗ Organize

✓ Onboard

⊗ Update

Which provisioning option is best for provisioning devices when they connect to AWS IoT for the first time?

Ⓧ   Single Device Provisioning

✓   Just-in-Time Provisioning (JITP)

Ⓧ   AWS IoT Thing groups

Ⓧ   Bulk Provisioning

Which continuous provisioning option is a good choice when deploying numerous devices that are similar in their functions and attributes?

🗙   Thing Groups

🗙   Single Device Provisioning

✓   Just-in-Time Provisioning (JITP)

🗙   Just-in-Time Registration

Which service collects and processes raw data from AWS IoT Broker logs into readable, near real-time metrics?

⊗   AWS IoT Logs

⊗   AWS IoT Thing Groups

⊗   AWS IoT Jobs

✓   Amazon CloudWatch