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Question:

Read the attached PDF and then browse through the Internet and find Contemporary Distributed IOT Platforms that support the following points -

- The platform should be able to handle data at a large scale and can also be scalable when required.
- It should provide the facility to store the sensor data in databases/warehouses.
- It should be able to provide micro-services to use custom sensor data and also establish new sensor. Also management of sensors and the services should be done through the platform.
- Visualization of these sensors/sensor data can also be done through this platform.

List any 3 such platforms in the given below format -

- Name and its URL
- A brief overview of its working
- Architecture diagram(s) or Flowchart(s)
- List of Sample applications/ platforms it supports today
- According to you, how does it fulfill the above points? why do we need it?

Also List any other 3 such platforms with just their name and URL.

List:

1. Amazon Web Services(AWS) IOT
2. Google Cloud IOT
3. Microsoft Azure IOT

1:

NAME:

AMAZON WEB SERVICES(AWS) IOT

LINK

: https://aws.amazon.com/iot/

BRIEF OVERVIEW:

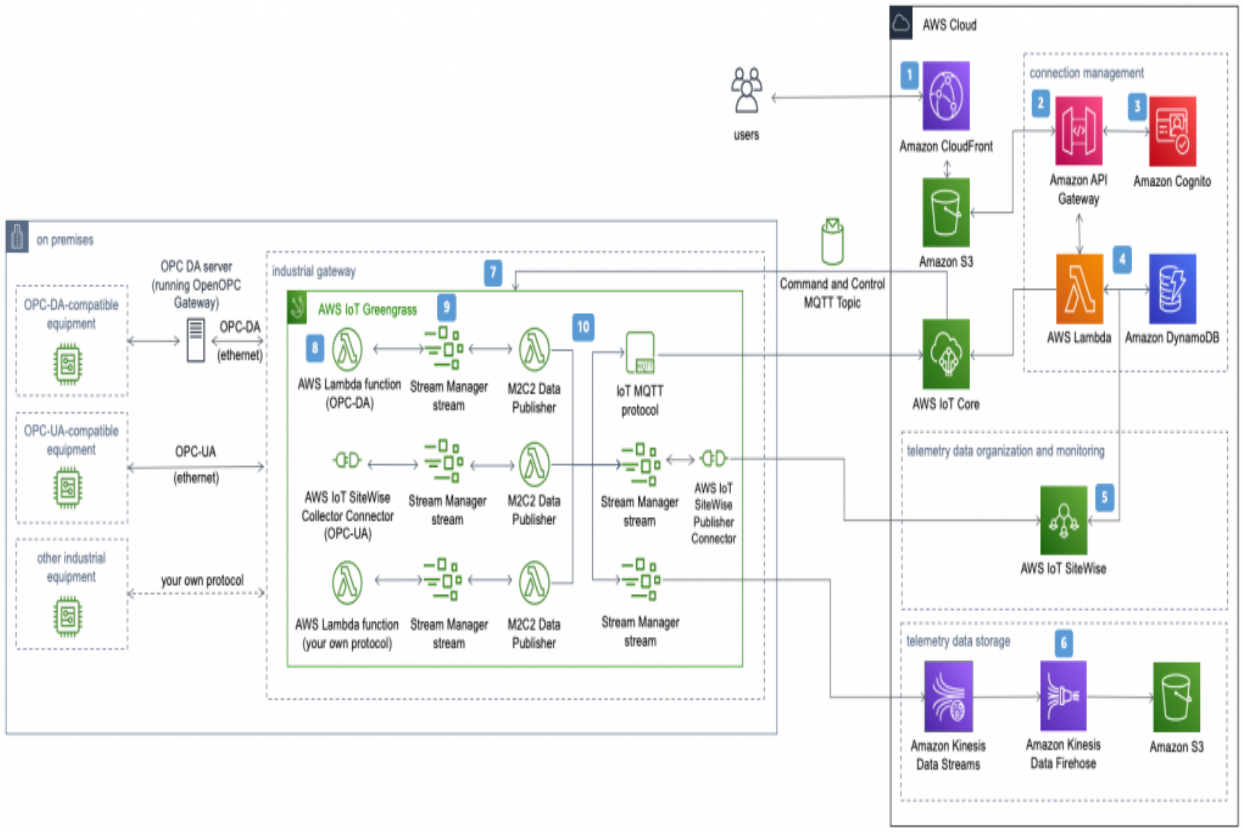
1.AWS web services iot provides secure data storage and management for iot devices
2. It's highly scalable.
3. It visualizes that data through services such as amazon kinesis, amazon quicksight, amazon s3.
4.it provides security for iot devices.
5. It has 4 key component:

- AWS IOT ANALYTICS:
  It analyze iot device data at scale
- AWS IOT CORE:
  A platform which is used as communication medium between iot devices and aws services. Its secure and scalable.

- AWS IOT GREENGRASS
  Using this software iot devices performs local computation and communication even when disconnected with cloud

- AWS IOT DEVICE MANAGEMENT
  It’s monitors and managed iot data

Architecture diagram(s):



List of Sample applications/ platforms it supports today:

- Healthcare
- Industrial iot
- Automotive industry
- Agriculture
- Retail
- etc

According to you, how does it fulfill the above points? why do we need it?

A. It has securely scalable infrastructure for data storage .itit handles large amount of data.
B. For storing and managing data amazon dynamoDB ,amazon redshift, amazon s3
C. for create micro services for iot data , it provides amazon kinesis,amazon sagemaker .
D. For visualization it uses amazon quick sight , amazon cloudwatch etc

2.

NAME:

GOOGLE CLOUD IOT:

Link: https://cloud.google.com/iot

BRIEF OVERVIEW:

1. It provides scalable infrastructure for different iot data
2. Its secure platform for iot devices

3. Key component:
    - Iot core:

      A platform which is used as communication medium between iot devices and cloud services. Its secure and scalable.

    - Cloud dataflow

      For iot data analyzation , this is a data processing system.

    - Cloud iot edge

      Using this software iot devices performs local computation and communication even when disconnected with cloud.

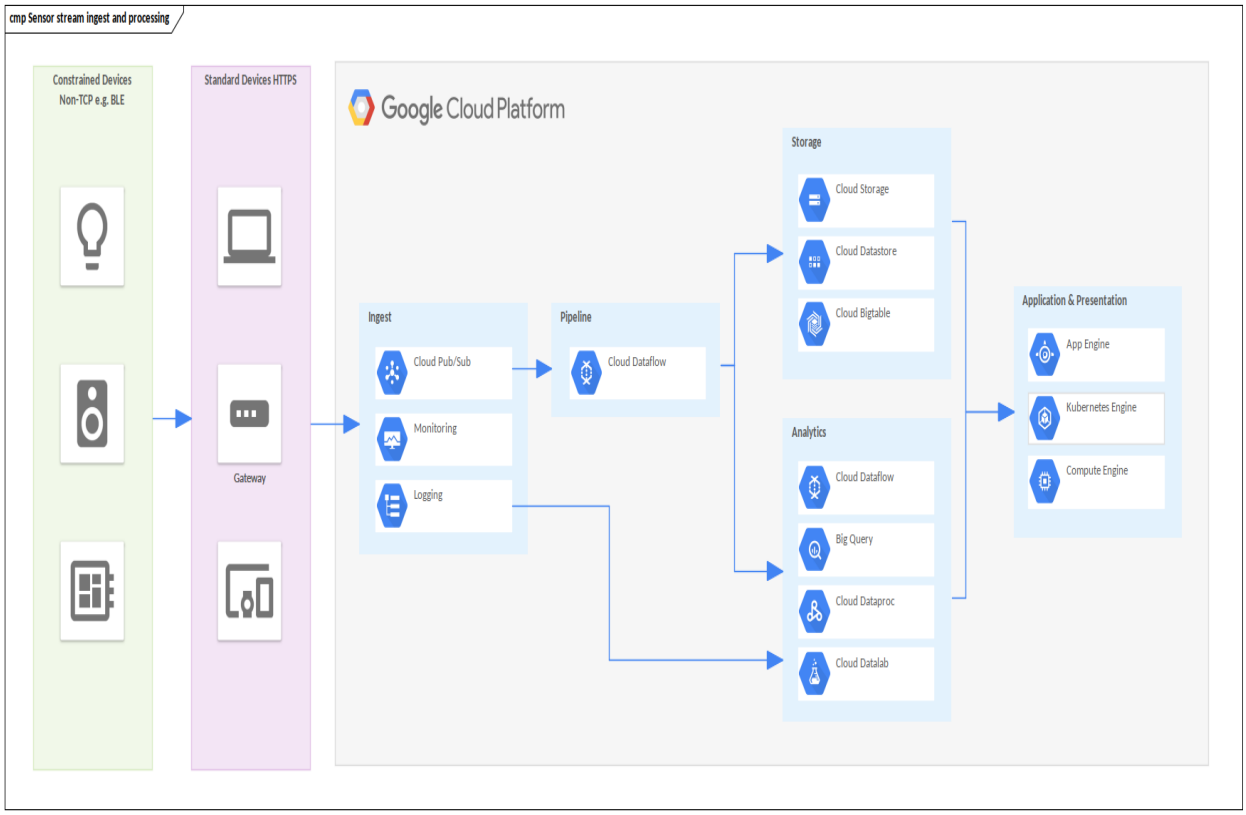
    - Cloud bigQuery

      Data warehousing system for cost-effective fast analyzation.

    - Cloud pub

      A Messaging services for real time and secre data ingestion

Architecture diagram(s):



List of Sample applications/ platforms it supports today:

- Smart cities traffic handling and environment handling
- Healthcare and agriculture
- Retail and automotive services
- Smart energy storage system

According to you, how does it fulfill the above points? why do we need it?

A. It handles large scale data , provides scalability and reliability.fully managed service collecting, processing and managing data
B. For storing sensor data google cloud iot works with google bigquery. It provides fast ,cost effective service.
C. Google cloud iot provides microservices and also provides API'S
D. For visualization it uses different cloud services like data studio.

3.

NAME:

MICROSOFT AZURE IOT

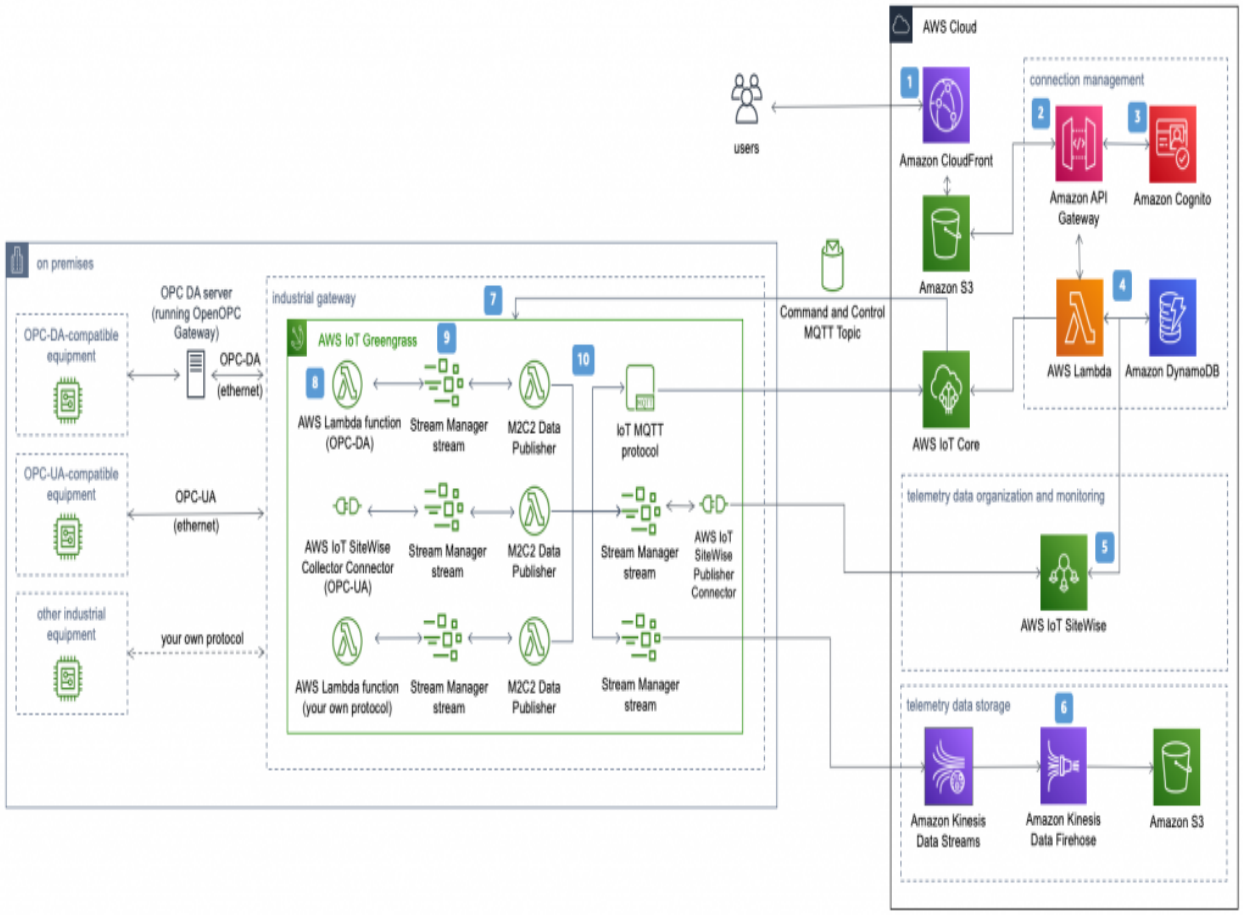
Link:

https://azure.microsoft.com/en-us/services/iot-hub/

BRIEF OVERVIEW:

1. Its provide scalable and secure infrastructure for iot data.
2. It includes other cloud services like azure machine learning ,azure stream analytics etc
3. Its provide apis and microservices
4. It support different protocol like http, mqtt, amqp
5. Its support security features like device identity , access management etc
6. It provides complete solution for iot data management

Architecture diagram(s):



List of Sample applications/ platforms it supports today:

- Smart building
- Healthcare iot and retail iot
- Connected cars
- Smart energy
- agriculture

According to you, how does it fulfill the above points? why do we need it?

A. It connecting monitoring and managing data.and gives high scalabilityit provides a complete solution for iot data management
B. It integrate with other management service like azure machine learning azure stream analytics etc
C. The platform provide microservice and api for device level management
D. For visualization it provides tools . and making it easier