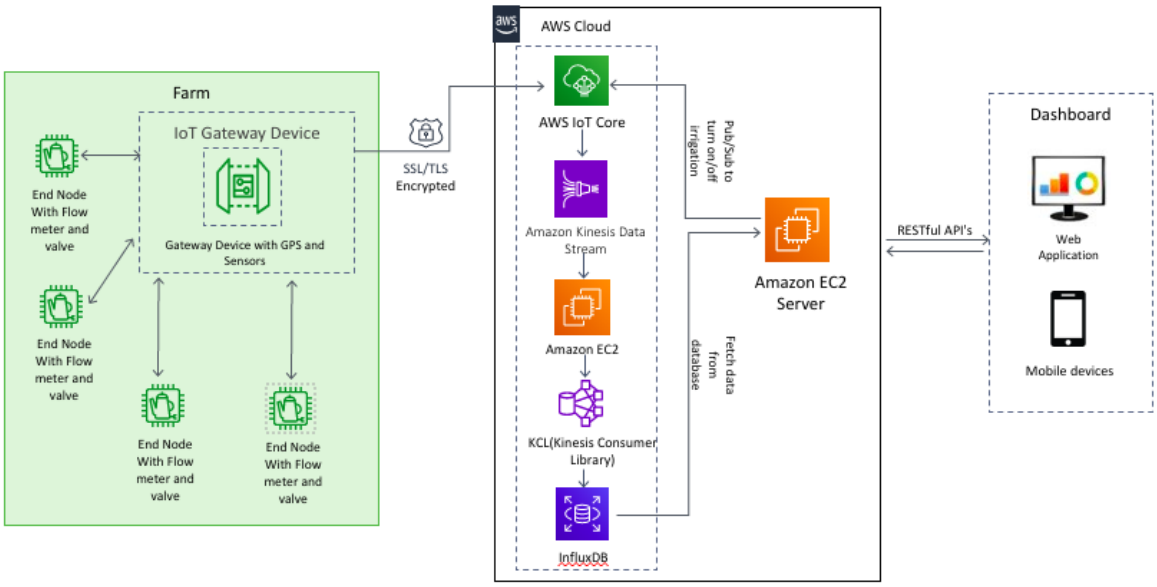
Project Design Phase-I
Solution Architecture

Date	15 October 2022
Team ID	PNT2022TMID14459
Project Name	SmartFarmer - IoT Enabled Smart Farming Application
Maximum Marks	4 Marks

Solution Architecture:



In traditional outdoor large-area farming, there has been a revolution in using key technologies such as communications networks and networked sensors to monitor crop conditions and the environment. Agricultural sensors enable farmers to access real-time data from remote measurement tools that report on soil moisture, temperature and pH.

- In Smart farming, end node with various sensors are deployed in farm which are connected to the IoT Gateway Device.This gateway has inbuilt GPS and 4G capability.Sensors can measure insolation (the amount of sun over a given area), rainfall, wind speed, air temperature and humidity etc.
- Data which is collected at Gateway is then send to through MQTT protocol over the internet to AWS IoT Core for collection, storeing, and analyzing device data.
- Then this data will be stream through Amazon Kinesis Data Streams (KDS) which is a massively scalable and durable real-time data streaming service.The data collected is available in milliseconds to enable real-time analytics use cases such as real-time dashboards.

- Data will be store in Infulx DB which is fast, high-availability storage and retrieval of time series data in fields such as operations monitoring, application metrics, Internet of Things sensor data, and real-time analytics.
- This data can be use for further analysis and turning to automated equipment of smart farming. Using technology, they can plant, water, maintain and harvest crops with the highest efficiency, which helps to improve the use of land, resources and time.