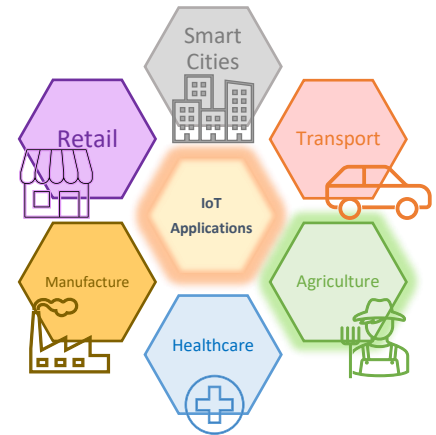


Abstract

The aim is to build a Soil-to-cloud IoT System for data collection, storage, and visualization from terrestrial sensors which sense and collect environmental parameters (Moisture and Temperature).

Introduction



What does "Soil to Cloud" mean?

It is a metaphor, meaning the gathered data from the soil will be uploaded to the cloud storage for visualization using the proposed IoT Hub system.

Motivation

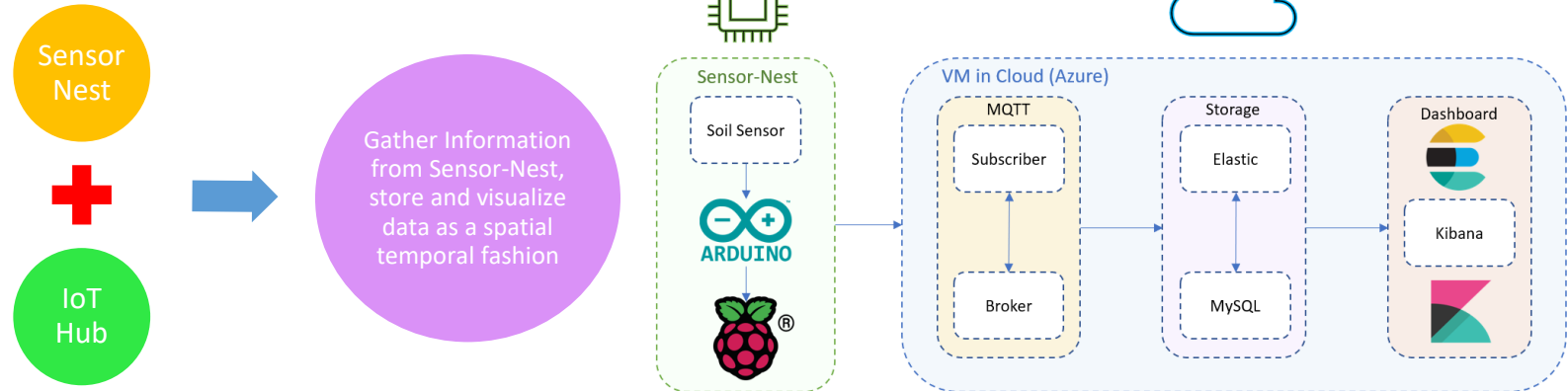
Expensive Cloud-Vendor Services

To build scalable IoT Fleets/Nests

To provide a no-cost framework for R&D

To provide flexible and robust networking, Storage and Visualization

System Model and Architecture



What is Sensor-Nest?

A waterproof box that includes Soil Sensor connection to the Arduino and Raspberry pi.

The soil Sensor itself is buried under the soil and only the connection wire goes to the Sensor-Nest

Wireless Technology : Wi-Fi

communication protocol: Asynchronous MQTT 3.1 between Publishers, Subscribers, and Brokers

Storage: 1- SQL(MySQL) → Having organized and well formatted data
2- Elasticsearch → Facilitates the usage of Kibana

Data Visualization

