Whether Monitoring with Rain Prediction

Using Arduino Esp8266
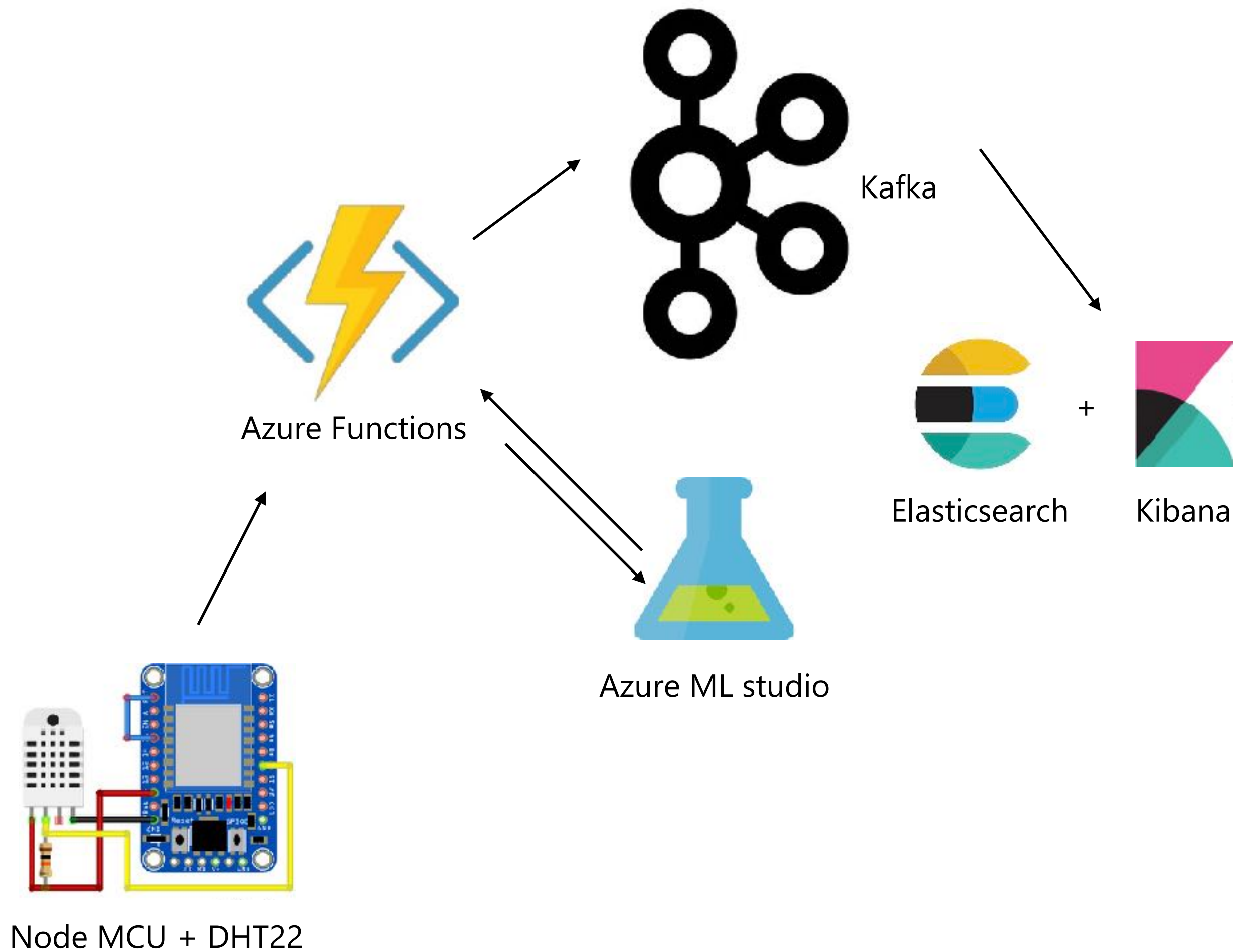
- Ayush Chauhan

heyAyushh/mIrpp

2. Contents

Kafka

Azure Functions

Elasticsearch + Kibana

Azure ML studio

Node MCU + DHT22

Requirements

- Azure functions core tools (for localhost)

- Kafka

- Kafka-connect Elasticsearch sink connector

- Elasticsearch, kibana

- ngrok

- Arduino NodeMCU + DHT22 Sensor

SETUP

Azure ml studio

- https://gallery.azure.ai/Experiment/Weather-prediction-model-1

- Go to the above link and click open in mlstudio

- Deploy as it as a web service

- Save the predictive service URL somewhere

Kafka

- Download Kafka

- Start a single broker (or many as you want ;p)

- Create a topic mlrpp

- Download kafka connect elastic search
  https://github.com/confluentinc/kafka-connect-elasticsearch

- Configure elastic search connector as ->

Azure functions

- Deploy a HTTP trigger function with the code here.

- Edit link to your kafka broker accordingly

- Edit link to your Azure predictive service

Elasticsearch + Kibana

- Open Dev Tools in Kibana Portal

- Run the following queries as described here.

INTEGRATION

Kafka

- Run the connector
  $Kafka/bin/connect-standalone $Kafkaconfig/connect-standalone.properties $Kafkaconfig/elasticsearch-connect.properties

Arduino

- Edit the Arduino code with Azure function url.

- Connect DHT22 sensor to D4 pin

- Upload the code

Elasticsearch + Kibana

- Build The Visualizations as described here.

- Build the Dashboard