Sensor Manager, Registry and Repository

Group 1, Team 3

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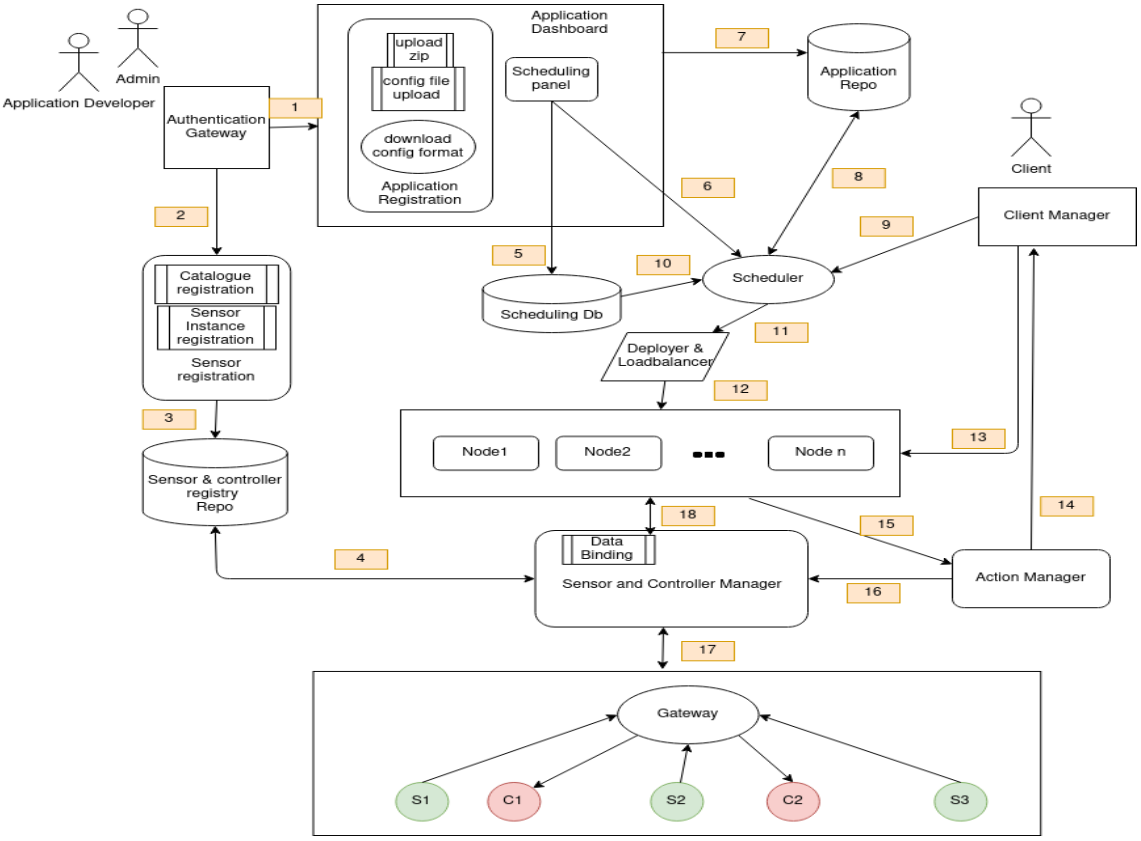
1 Sensor Manager

1.1 Introduction

1. This module is responsible for binding correct sensor data stream with corresponding algorithm.
2. Sensor Manager can add or remove sensors.
3. Will identify IoT devices from the sensor database based upon the parameters.

1.2 Block diagram



1.3 List of sub-systems and their responsibilities

1.3.1 Sensor Registration

1. Admin will upload a file containing information of sensor gateway and other sensor details.
2. Module will be responsible to parse the meta file provided by the admin containing sensor information.

```
{
    "user_id" : "apurva",
    "sensor_catalogue_config" :
    {
        "sensor_type_1" :{
            "sensor_name": "stitch_setting",
            "sensor_type_data_type": "int",
            "has_controller" : "yes"
        },

        "sensor_type_2" :{
            "sensor_name": "thread_remaining",
            "sensor_data_type": "int",
            "has_controller" : "yes"
        },

        "sensor_type_3" :{
            "sensor_name": "hook_rotation",
            "sensor_data_type": "int",
            "has_controller" : "yes"
        },

        "sensor_type_4" :{
            "sensor_name": "temperature_sensors",
            "sensor_data_type": "int",
            "has_controller" : "yes"
        },
    }
}
```

Listing 1: Sensor Type Registration Catalogue

1.3.2 Sensor Management

1. Validates if requested sensor details are available in system or not. If available, gets its details from the registry.
2. Sends the data to Algorithm for any analysis.

1.4 Interaction with other modules of the platform

- Sensor manager will be responsible for binding the data of the sensors to the deployed algorithm and send back responses as required by the application
- The sensor manager fetches the queries for data (to run the algorithm) an d sends at the desired rate and time.

2 Registry

2.1 Introduction

Registry will store run-time related information for the application (s) and the platform (and it modules)

2.2 Description of responsibilities

- It will store information like login details of the users
- It can store some metadata for the sensors
- Some metadata for scheduling requests
- Will store configuration files : Application code, scheduling
- It will also have the address of all nodes

2.3 Interactions with other modules of the platform

Registry will interact with Sensor Manager, Scheduler, host nodes and platform initializer.

3 Platform Repository

3.1 Introduction

Platform repository will store the files of the various modules of the platform

3.2 Interaction with other modules

It will interact with platform initializer, sensor manager and the authentication service (for storing details of registered users)

4 Application Repository

4.1 Introduction

Application Repository will store the files for all the applications deployed on the platform. It will store all the codes relevant to the deployed applications

4.2 Interaction with other modules

It will interact with platform initializer and the host nodes (on which the algorithm will be running)