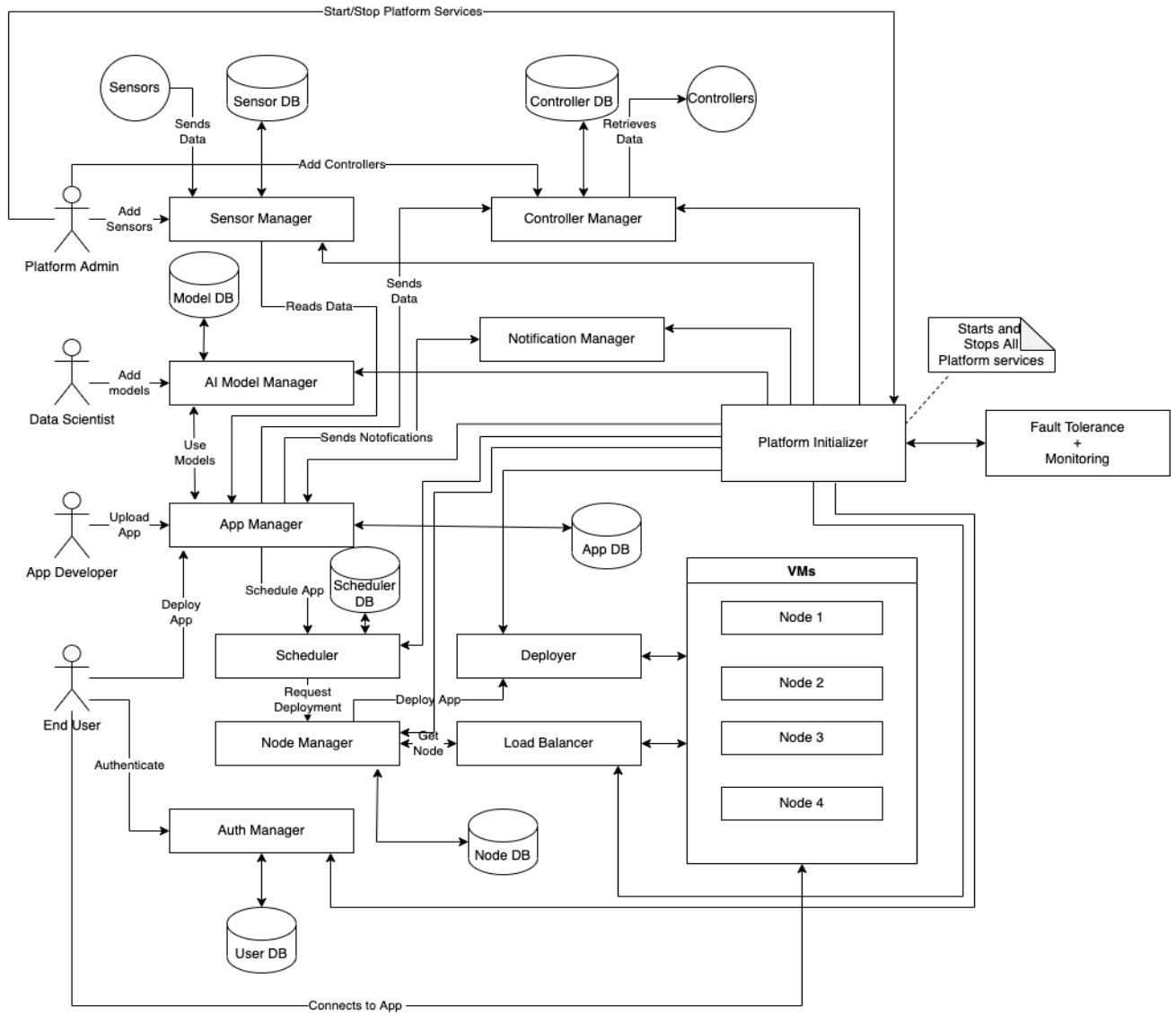# Internals of Application Servers

Design Diagrams
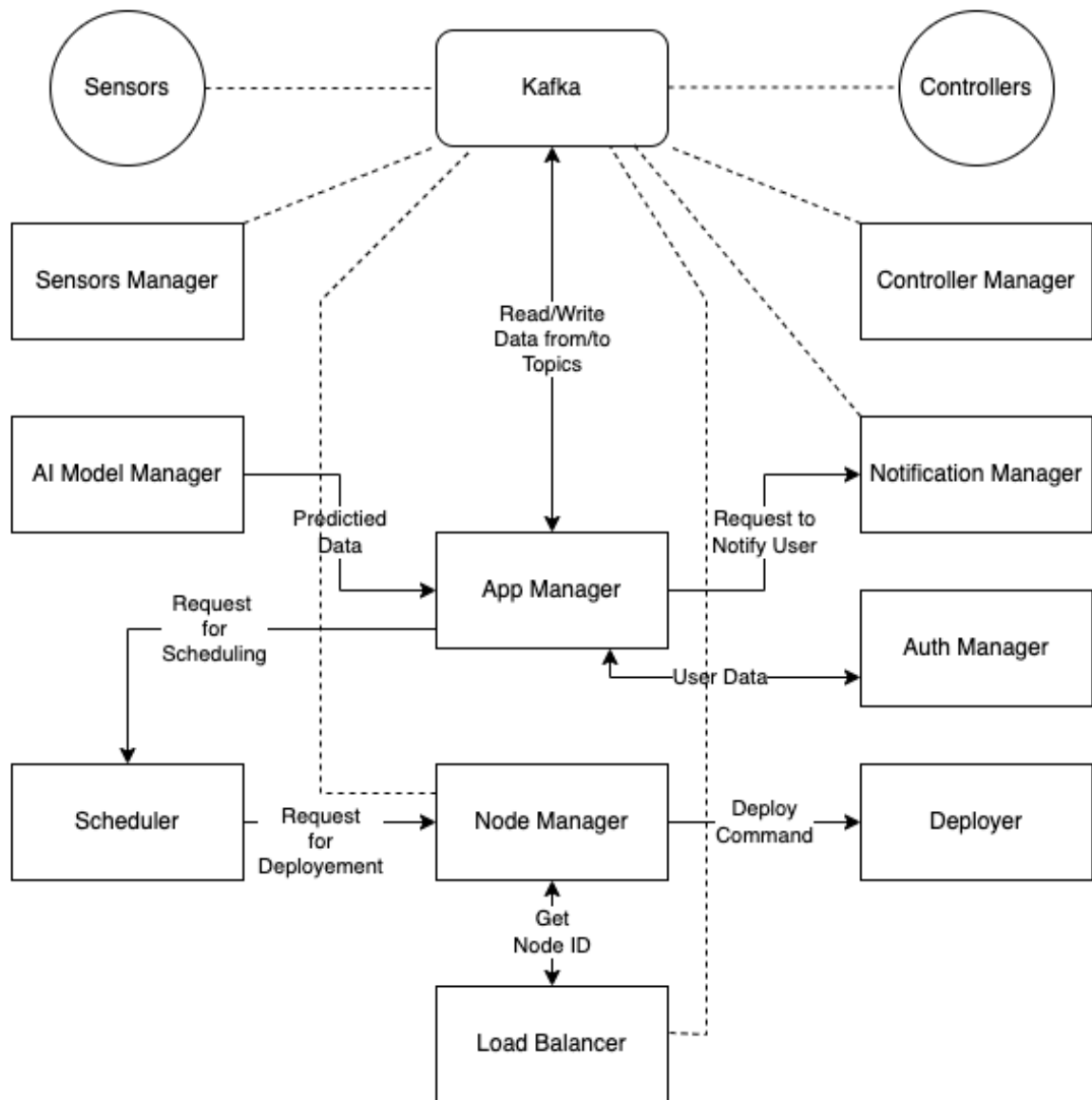
Group-6

Platform Name: MLOps Seva
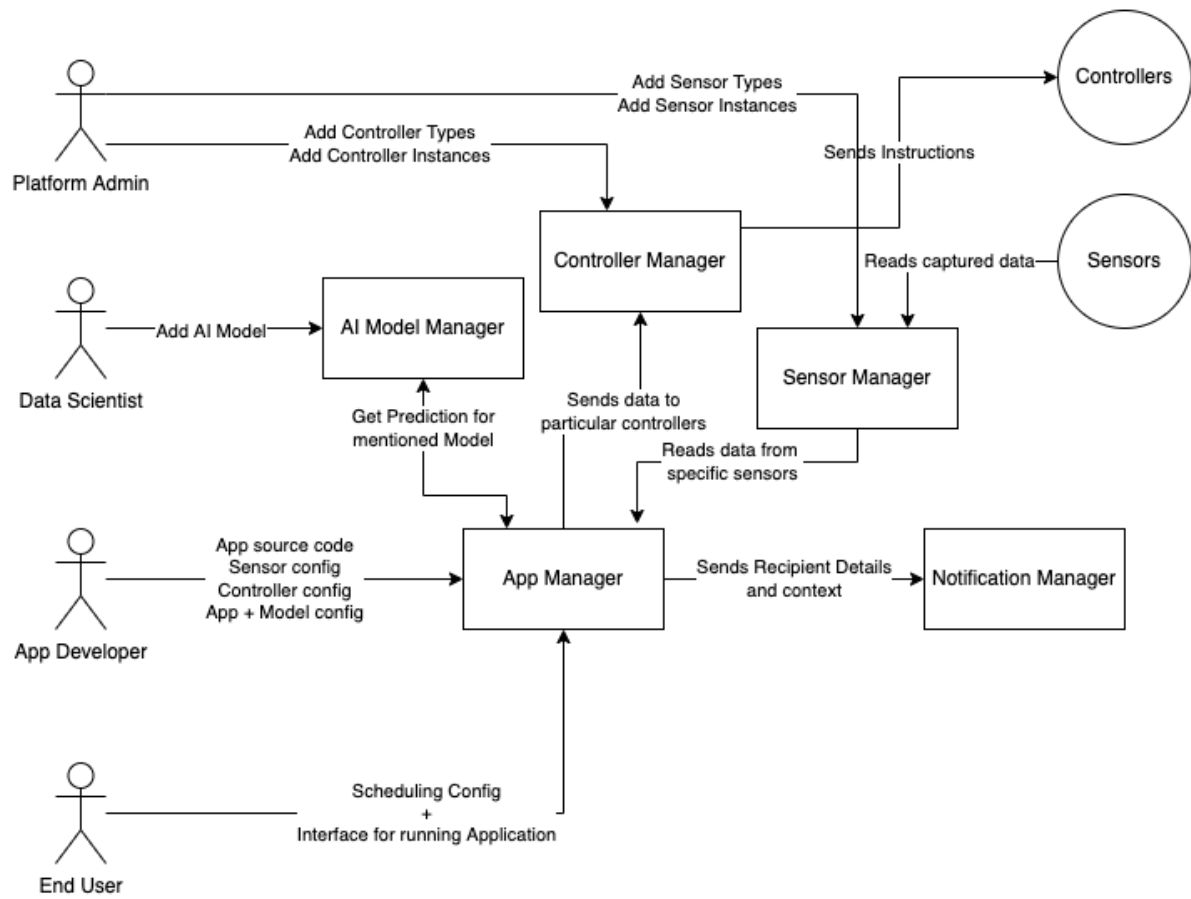
Server Architecture

Communication Model

Sensors — — Kafka — — Controllers

Sensors Manager

Controller Manager

AI Model Manager

Notification Manager

Read/Write Data from/to Topics

Predictied Data

App Manager

Request to Notify User

Auth Manager

Request for Scheduling

User Data

Scheduler

Node Manager

Request for Deployement

Deploy Command
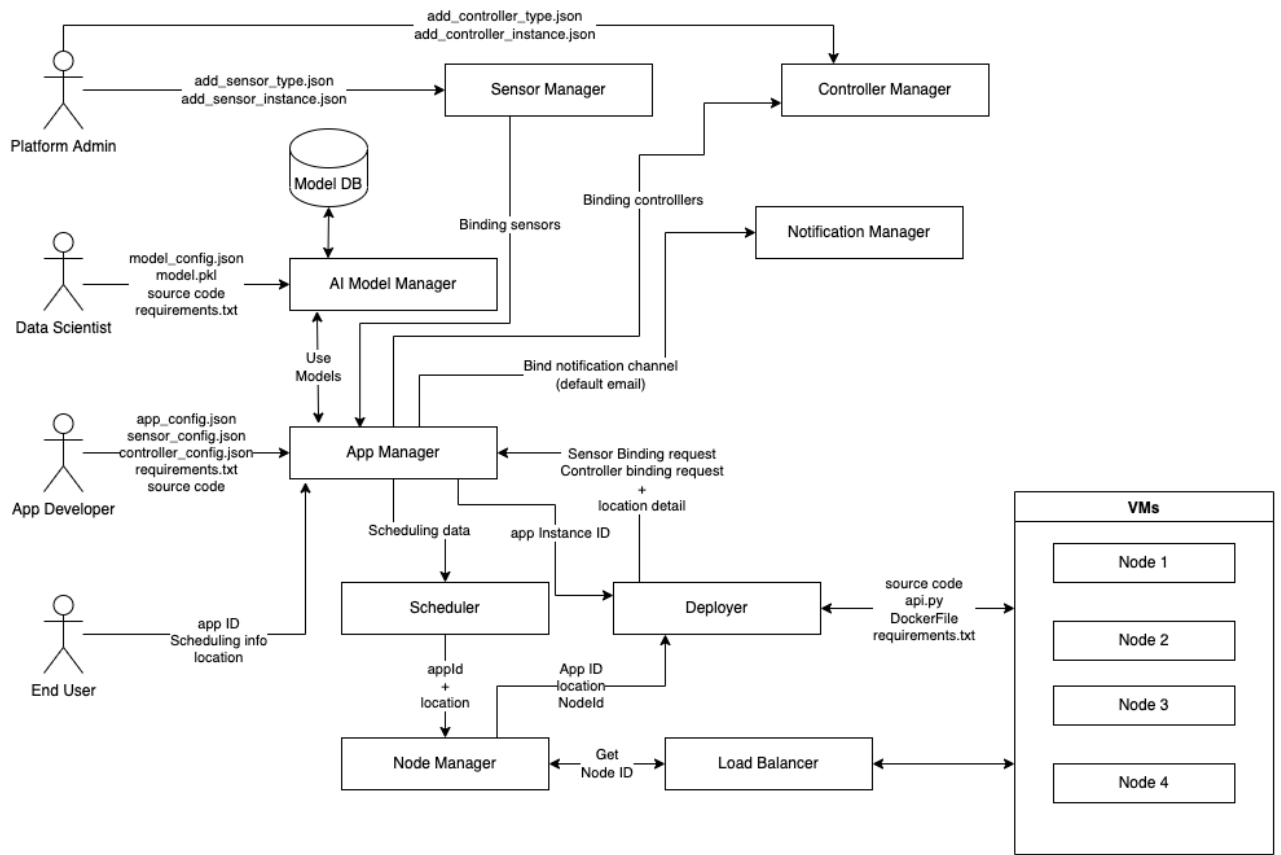
Deployer

Get Node ID

Load Balancer

Application Model

Artifacts Model

Contracts

- **add_controller_config.json**

```json
[
    {
        "controller_name": "controller_1",
        "controller_type": "light",
        "output_type": "json",
        "description": "This is a test controller",
        "method_type": "POST",
        "communication_type": "KAFKA"
    },
    {
        "controller_name":"controller_2",
        "controller_type": "sprinler",
        "output_type": "int",
        "description": "This is a test controller",
        "method_type": "POST",
        "communication_type": "KAFKA"
    },
    {
        "controller_name":"controller_3",
        "controller_type": "alarm",
        "output_type": "json",
        "description": "This is a test controller",
        "method_type": "POST",
        "communication_type": "KAFKA"
    }
]
```

- **add_controller_instance.json**

```json
[
    {
        "controller_instance_name": "controller_1",
        "controller_type": "sprinkler",
        "description": "Sprinkler controller",
        "location": "bakul",
        "ip_address": "0.0.0.0",
        "port": "8080"
    },
    {
        "controller_instance_name": "controller_2",
        "controller_type": "alarm",
        "description": "Alarm controller",
        "location": "bakul",
        "ip_address": "0.0.0.0",
        "port": "8080"
    },
    {
        "controller_instance_name": "controller_3",
        "controller_type": "fan",
        "description": "Fan controller",
        "location": "bakul",
        "ip_address": "0.0.0.0",
        "port": "8080"
    }
]
```

- **add_sensor_instance.json**

```json
[
    {
        "sensor_instance_name": "sensor_1",
        "sensor_type": "temperature",
        "description": "Temperature sensor",
        "location": "bakul",
        "ip_address": "0.0.0.0",
        "port": "8080"
    },
    {
        "sensor_instance_name": "sensor_2",
        "sensor_type": "light",
        "description": "Light sensor",
        "location": "bakul",
        "ip_address": "0.0.0.0",
        "port": "8080"
    },
    {
        "sensor_instance_name": "sensor_3",
        "sensor_type": "smoke_detector",
        "description": "Smoke sensor",
        "location": "bakul",
        "ip_address": "0.0.0.0",
        "port": "8080"
    }
]
```

- **add_sensor_type.json**

```json
[
    {
        "sensor_name": "sensor_1",
        "sensor_type": "temperature",
        "output_type": "json",
        "description": "This is a test sensor",
        "method_type": "GET",
        "communication_type": "KAFKA"
    },
    {
        "sensor_name": "sensor_2",
        "sensor_type": "camera",
        "output_type": "json",
        "description": "This is a test sensor",
        "method_type": "GET",
        "communication_type": "KAFKA"
    },
    {
        "sensor_name": "sensor_3",
        "sensor_type": "smoke_detector",
        "output_type": "json",
        "description": "This is a test sensor",
        "method_type": "GET",
        "communication_type": "KAFKA"
    }
]
```

- **app_config.json**

```json
{
    "app_name": "class_monitoring",
    "app_author": "Someone",
    "model_list": [
        {
            "model_name": "face_detection",
            "sensor_type": "camera"
        },
        {
            "model_name": "face_recognition",
            "sensor_type": "camera"
        },
        {
            "model_name": "fire_detection",
            "sensor_type": "smoke_detector"
        },
        {
            "model_name": "motion_detection",
            "sensor_type": "camera"
        },
        {
            "model_name": "sentiment_detection",
            "sensor_type": "camera"
        }
    ]
}
```

- **controller_config.json**

```json
[
    {
        "controller_name": "controller_1",
        "controller_type": "light",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "controller_name": "controller_2",
        "controller_type": "light",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "controller_name": "controller_3",
        "controller_type": "camera",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "controller_name": "controller_4",
        "controller_type": "camera",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "controller_name": "controller_5",
        "controller_type": "camera",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "controller_name": "controller_6",
        "controller_type": "temperature",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "controller_name": "controller_7",
        "controller_type": "temperature",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    }
]
```

- **model_config.json**

```json
[
    {
        "model_name": "face_detection",
        "model_author": "Sidd",
        "model_input_type": "image",
        "sensor_type": "camera",
        "model_output_type": "image",
        "controller_type": [],
        "model_description": ""
    },
    {
        "model_name": "face_recognition",
        "model_author": "Sidd",
        "model_input_type": "image",
        "sensor_type": "camera",
        "model_output_type": "image",
        "controller_type": [],
        "model_description": ""
    },
    {
        "model_name": "motion_detection",
        "model_author": "Sidd",
        "model_input_type": "image",
        "sensor_type": "camera",
        "model_output_type": "image",
        "controller_type": ["indicator"],
        "model_description": ""
    },
    {
        "model_name": "fire_detection",
        "model_author": "Sidd",
        "model_input_type": "int",
        "sensor_type": "smoke_detector",
        "model_output_type": "int",
        "controller_type": ["sprinkler", "alarm"],
        "model_description": ""
    }
]
```

- **sensor_config.json**

```json
[
    {
        "sensor_name": "sensor_1",
        "sensor_type": "light",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "sensor_name": "sensor_2",
        "sensor_type": "light",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "sensor_name": "sensor_3",
        "sensor_type": "camera",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "sensor_name": "sensor_4",
        "sensor_type": "camera",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "sensor_name": "sensor_5",
        "sensor_type": "camera",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "sensor_name": "sensor_6",
        "sensor_type": "temperature",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    },
    {
        "sensor_name": "sensor_7",
        "sensor_type": "temperature",
        "keys": "APiyqwerty.eyAZXNjHjhgXjhgscwjs1"
    }
]
```