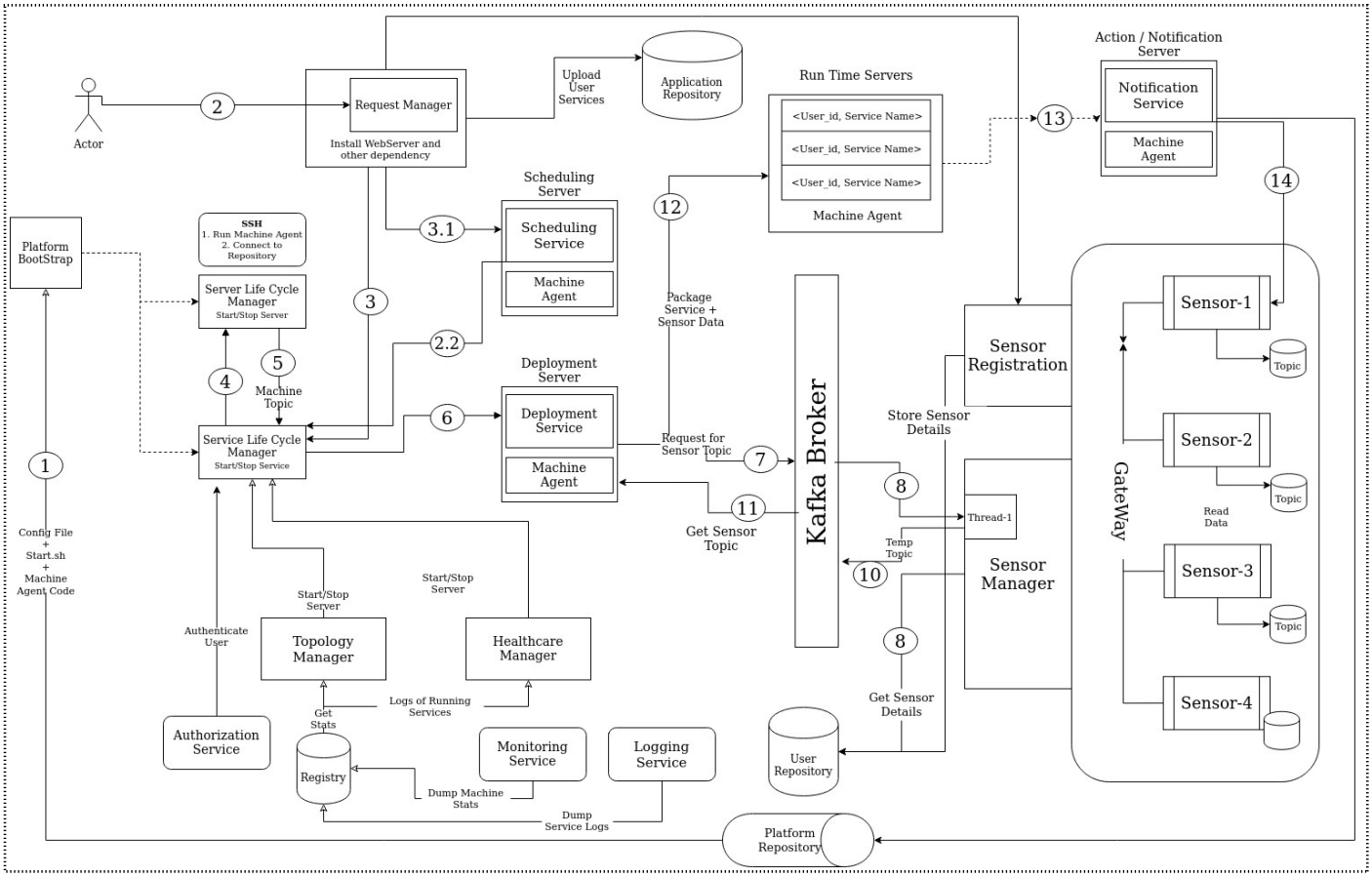
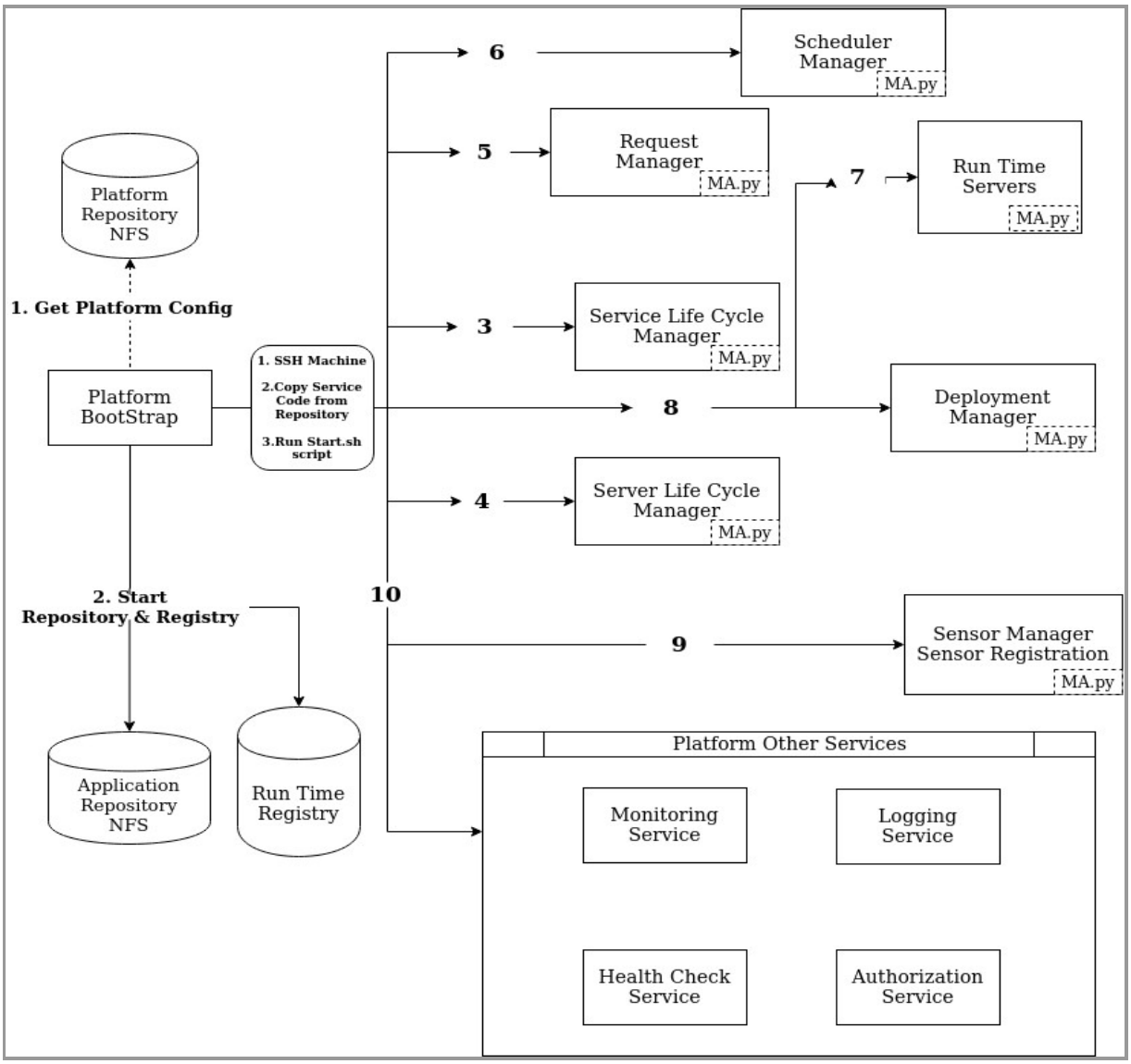
Internals of Application Server
Project Design
Group-1:

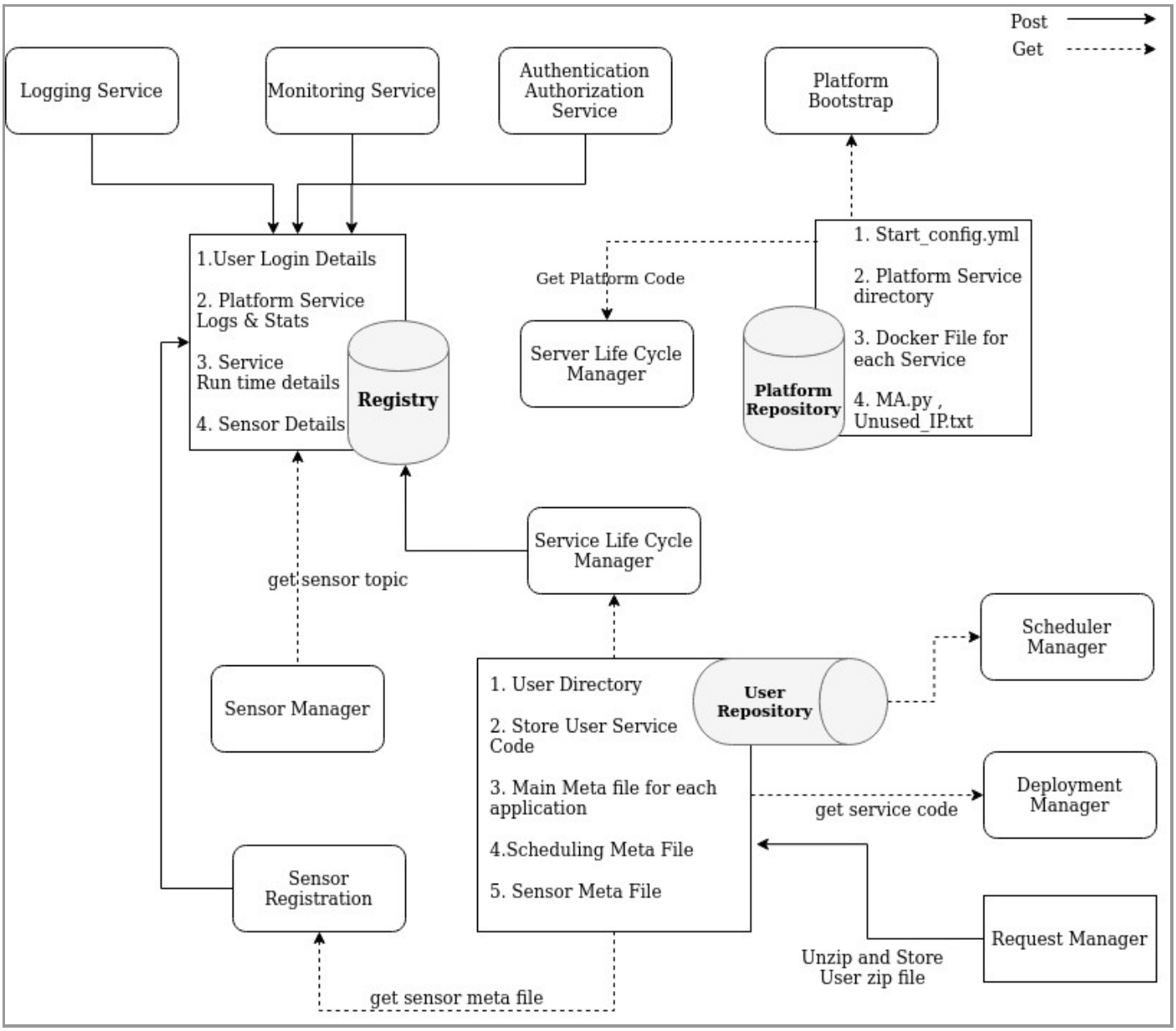
Big Picture



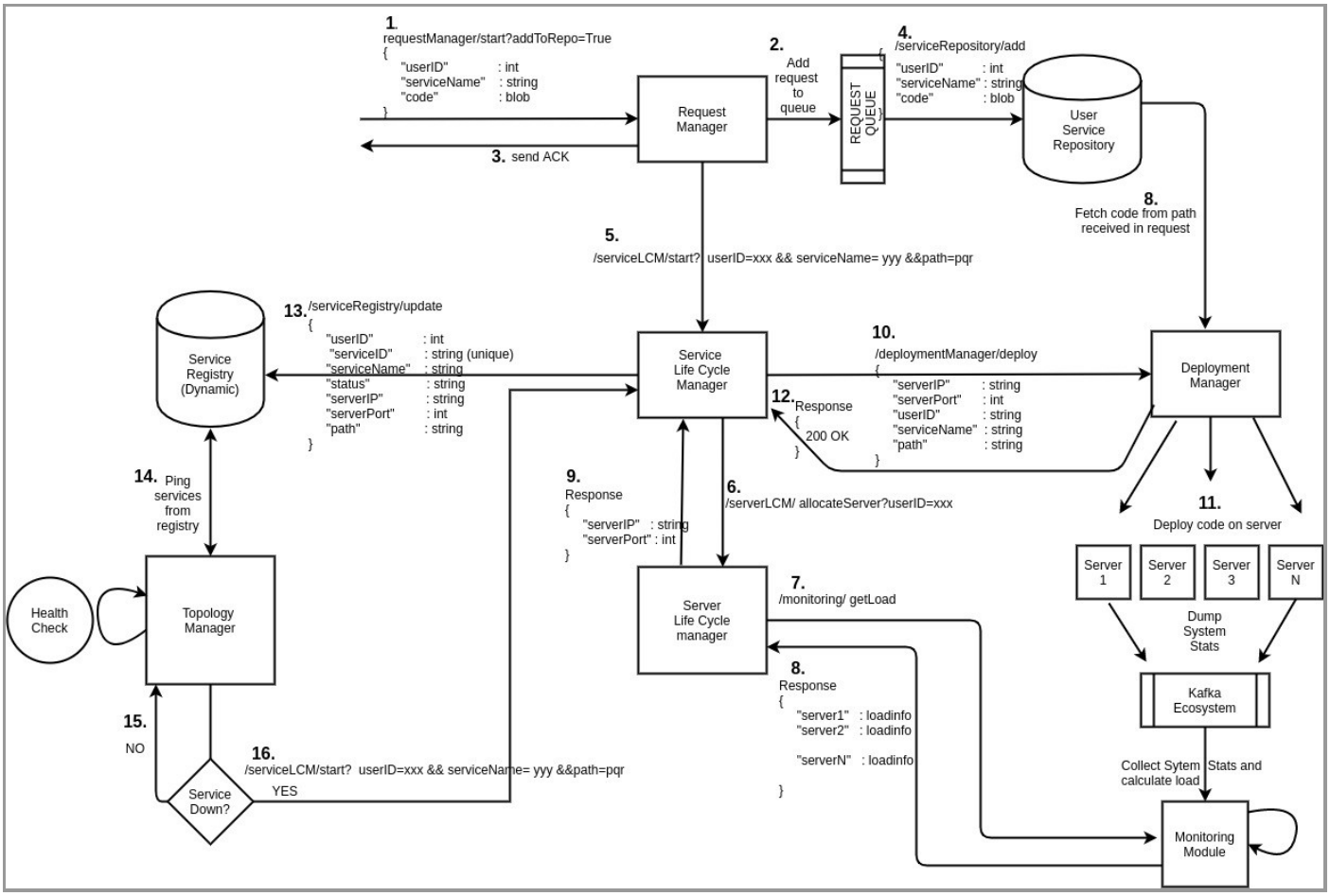
BootStrap Program

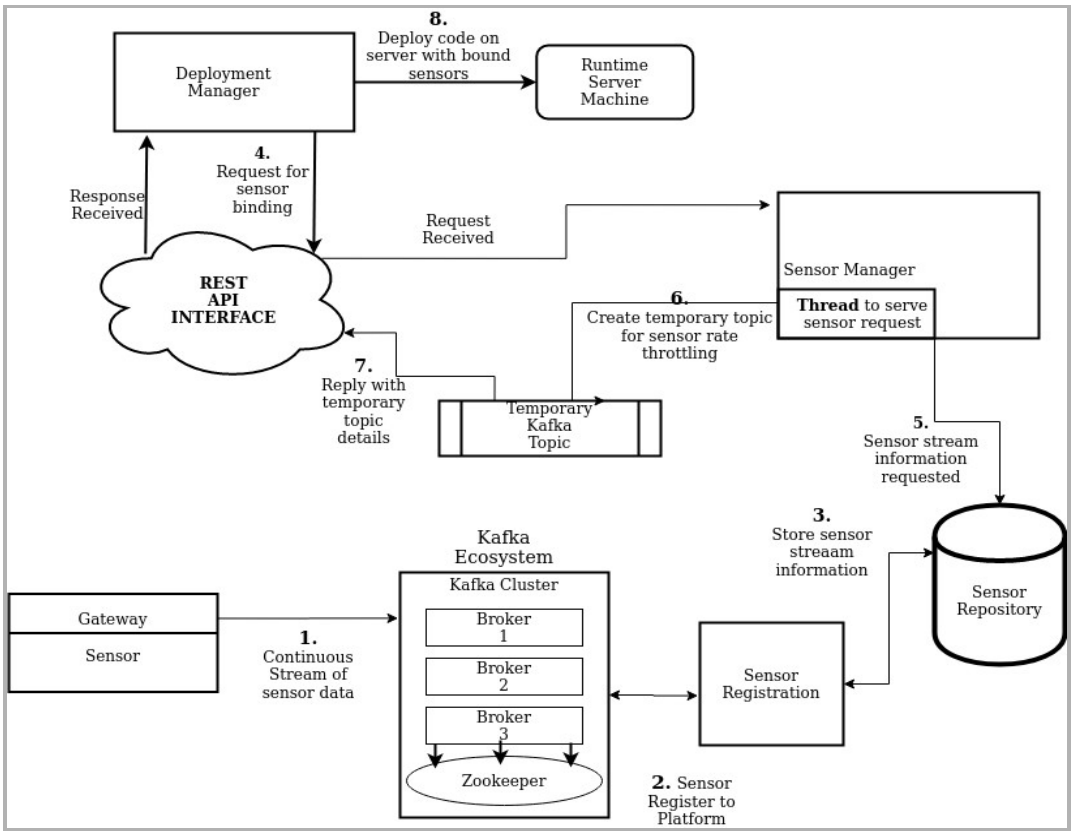


Repositry and Registry:

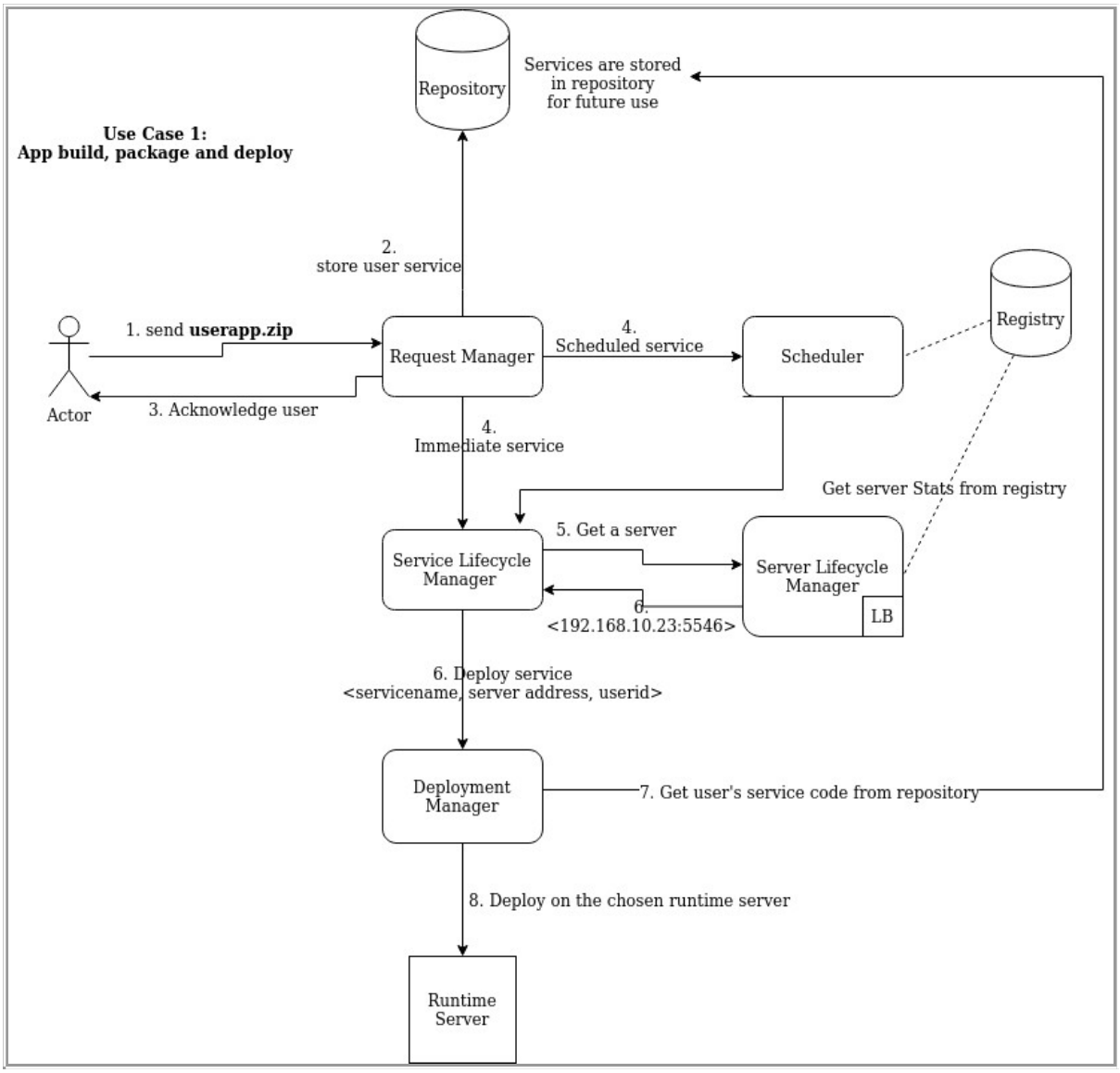


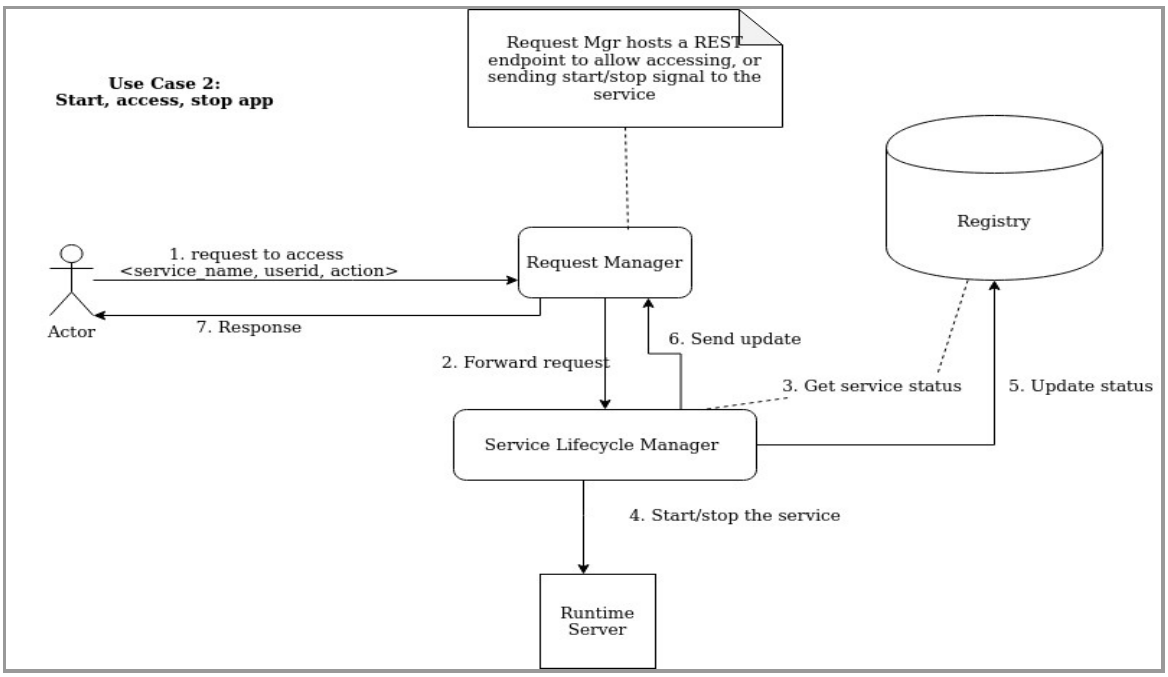
Communication Model





Application Model and Life Cycle:





Meta / Config Files

- User zip Directory Structure:

- Application1
  - Services
    - Service1
      - Code
        - Servicecode1.py
        - Servicecode2.py
      - Dependency
        - Ml_model_weights.pkl
        - File1.txt
  - Scheduling_info
    - Schedule1.xml
    - Schedule2.xml
  - Configuration_file.xml

Platform Code Directory:

- **inti.zip**
  - Config.yml
  - Machine Agent.py
  - Unused_IP.txt
  - Service Lifecycle/
  - Server LifeCycle/
  - Scheduler/
  - Deployment Server/
  - others/

Service Configuration File Format

```
<Services>
    <service>
        <name>service1</name>
        <filename>service1.py</filename>
        <priority>low</priority>

        <dependencies>
            <dependency>service2</dependency>
            <dependency>service3</dependency>
        </dependencies>
        <sensor_input>
            <input>
                <type>BY_ID</type>
                <id>12345</id>
            </input>
            <input>
                <type>BY_LAT_LON</type>
                <lat>1234.12</lat>
                <lon>24.213</lon>
                <floor>2</floor>
                <radius>12</radius>
                <count>ALL</count>
            </input>
        </sensor_input>
        <scheduling_info>
            <file_name>scheduling1.xml</file_name>
        </scheduling_info>
    </service>
</Services>
```

Platform Config File

```
BootStrap Config:

Machine IP

port

Host pswd

Services_to_run
    service Name: Server LCM
        root_dir : path of /serverLC
        docker_file: .dockerfile (container code for a particular service)
        startscript : .sh file (script to run docker file)
        params: json file

    service Name: Service LC M
        root_dir : path of /serverLC
        docker_file: .dockerfile
        startscript : .sh file
        params: json file
```

Scheduling File Format

```
<schedules>
    <schedule>
        <!-- Schedule 1 Info -->
    </schedule>
    <schedule>
        <!-- Schedule 2 Info -->
    </schedule>
</schedules>
```

Different Types Of schedules
SINGLE INSTANCE

```
<schedules>
    <schedule>
        <type>SINGLE_INSTANCE</type>
        <start_date>12-12-2020</start_date>
        <time>
            <start>10:00</start>
            <end>12:00</end>
        </time>
    </schedule>
</schedules>
```

DayWise

```
<schedule>
    <type>DAYWISE</type>
    <day>MONDAY</day>
    <time>
        <start>10:00</start>
        <end>12:00</end>
    </time>
</schedule>
```

Periodic

```
<schedule>
    <type>PERIODIC</type>
    <start_date>12-12-2020</start_date>
    <period>10</period>
    <time>
        <start>10:00</start>
        <end>12:00</end>
    </time>
</schedule>
```

Sensor Registration

```
<sensors>
    <sensor>
        <name>BTF-14</name>
        <gateway>ip:port</gateway>
        <sensor_id>SI12</sensor_id>
        <data_type>VECTOR</data_type>
        <size> 20 </size>
        <address>
            <area> iiit </area>
            <building_name>nilgiri</building_name>
            <room_no>D12</room_no>
        </address>
        <geo_location>
            <lat>1234.242</lat>
            <lon>854.21</lon>
            <floor_no>4</floor_no>
        </geo_location>
        <type>INPUT_OUTPUT</type>
    </sensor>
</sensors>
```

Deployment Manager To Sensor Manager

Format:

```
<sensors>
        <sensor>
            <!-- sensor 1 information -->
        </sensor>

        <sensor>
            <!-- sensor2  information -->
        </sensor>
</sensors>
```

BY ID:

```
    <sensor>
        <type>BY_ID</type>
        <id>12345</id>
        <rate>100</rate>

    </sensor>
```

BY_ADDRESS

```
<sensor>
    <type>BY_ADDRESS</type>
    <area>iiit</area>
    <building_name>nilgiri</id>
    <room_no> D12 </room_no>
    <name>TMP36</name>
    <count>ALL</count>
    <rate>100</rate>
```

BY Lat/Log:

```
   <sensor>
       <type>BY_LAT_LON</type>
       <lat>1234.12</lat>
       <lon>24.213</lon>
       <floor>2</floor>
       <radius>12</radius>
       <name>TMP36</name>
       <rate>100</rate>
       <count>ALL</count>
   </sensor>
```

Service Life Cycle to Deployment Manager

Start a user service

```
<service>
    <action>start</action>
    <user_id>group_1_user</user_id>
    <application>applicationname</application>
    <service_name>service1</service_name>
</service>
```

```
<service>
    <action>stop</action>
    <service_instance_id>axc12cas</service_instance_id>
</service>
```