Akka Sensor Platform

Concepts / Structure / Demo / Updates

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About Product

- Sensors to monitor information during the runtime
- Event-oriented, allow dynamically custom programmed and deployed
- Alert when meet the condition given by user

- Environments:
  - Java 8
  - Maven
  - Akka
  - Akka Quartz Scheduler
  - 1.0.snapshot
- Original Repository:
  `https://github.com/JIMsZHOU/sensor-platform`
- Updating Repository:
  `https://github.com/fwqfwq/sensor-platform`

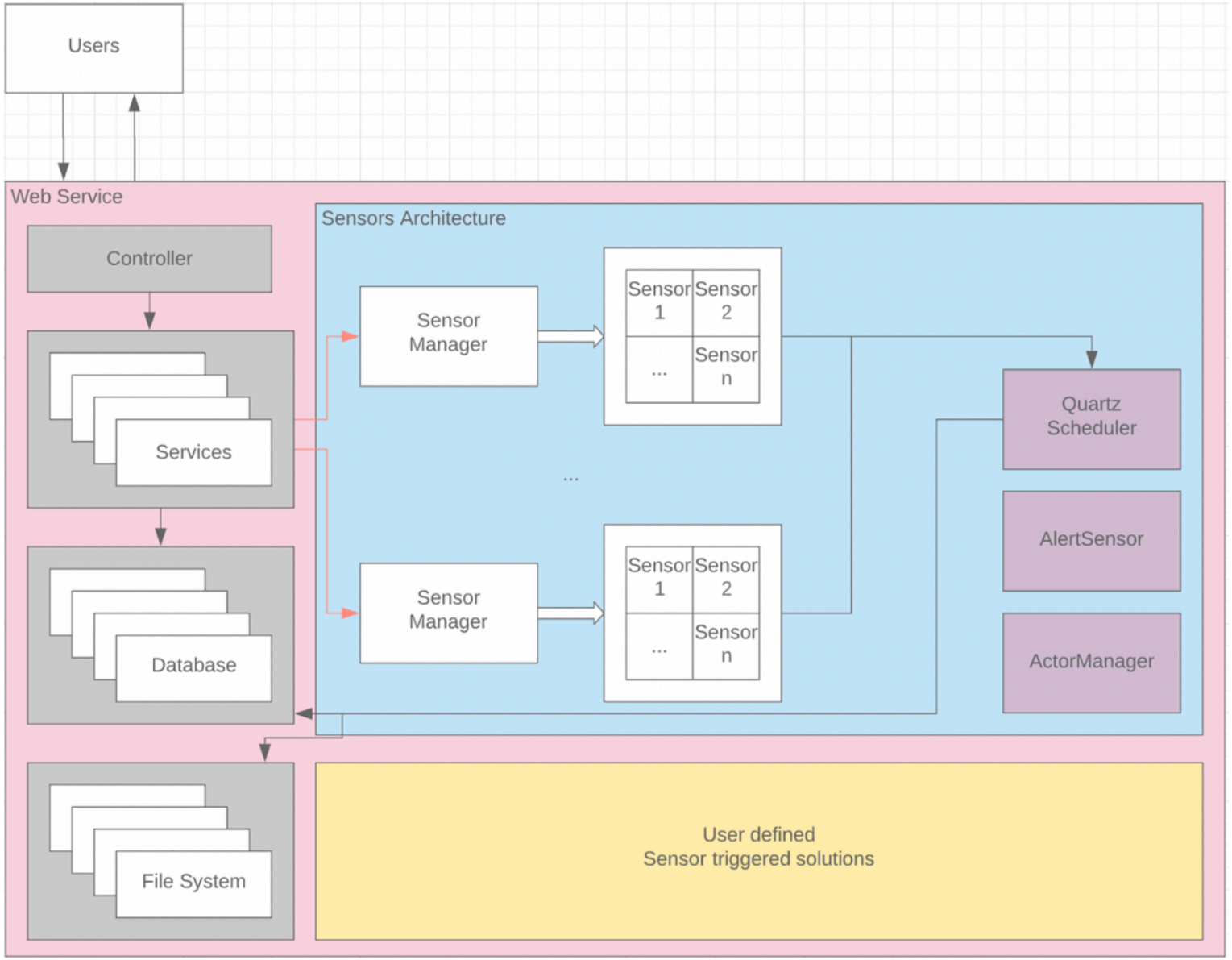
Contents

Structure

When user requests web services, the controller passes the requests and different types of sensors would be provoked to deal with specific jobs.

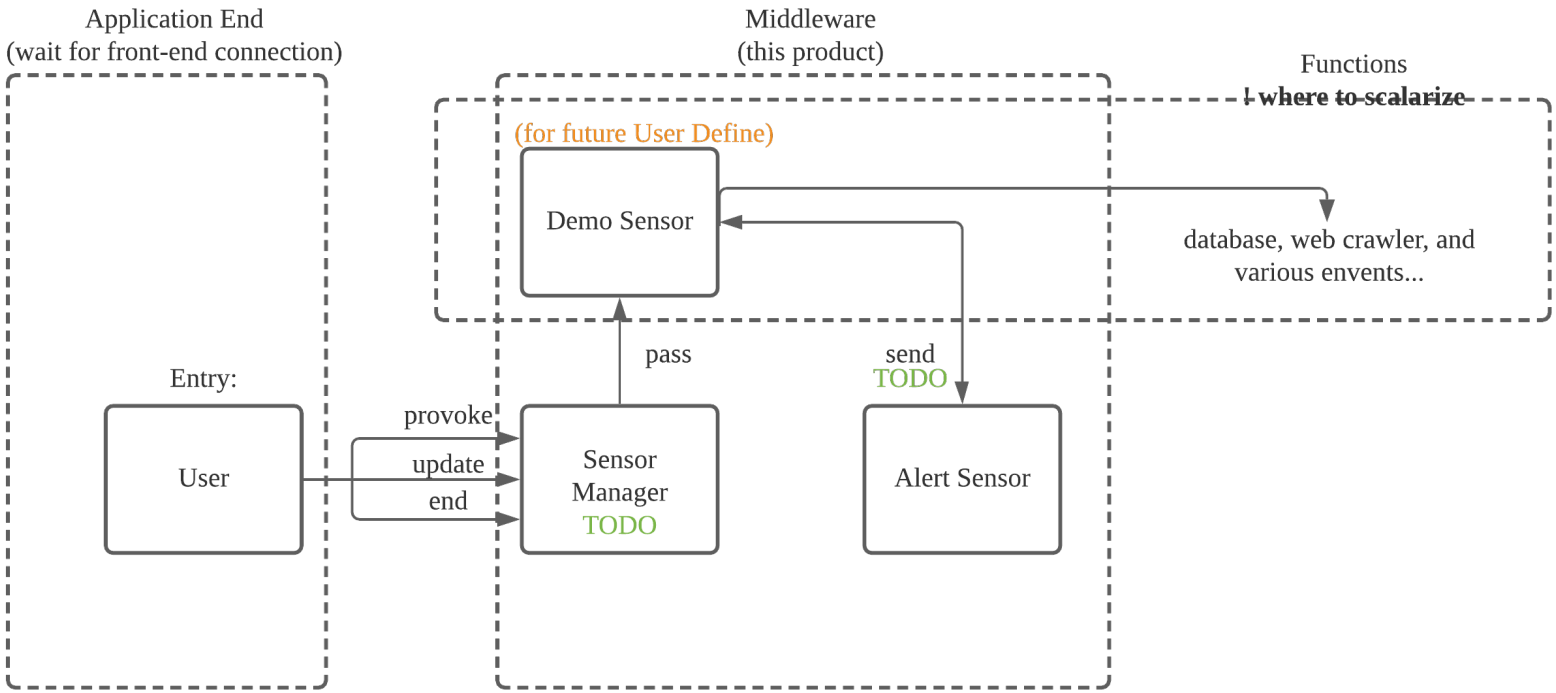
- Base: **Spring Boot**
  Use Spring to build RESTful web services, with Controllers and Services .
- Main tool: **Akka**
  Keep services concurrent, scalable, fault-tolerent and responsive in real-time, with JobManagers.
- Optimizer: **Quartz**
  For a better performance in job scheduling.
- Endpoint: **Swagger api**
- Future Deployment in cloud

Structure


Users
Web Service
Sensors Architecture
Controller
Services
Database
File System
Sensor Manager
Sensor Manager
Sensor 1
Sensor 2
...
Sensor n
Sensor 1
Sensor 2
...
Sensor n
Quartz Scheduler
AlertSensor
ActorManager
User defined
Sensor triggered solutions

Workflow

Take a Demo Sensor for example.



TODO Tasks

Functions being achieved:

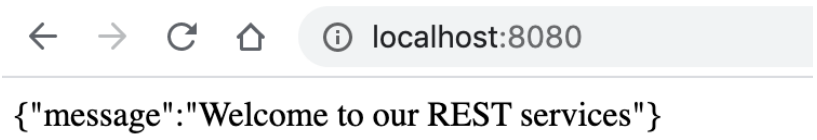
1. Connect sensors with the scheduling of Sensor Manager / Alert Manager. (single sensor use & multiple sensors use)
2. Create more various types of pre-defined event sensors.
3. Optimize sensors' process and lifecycle, set deadlines.

Demo / Updates

Demo Sensor

Running Demo:


```java
@RequestMapping(value = "/")
public ResponseEntity<String> index() {
    HttpHeaders httpHeaders = new HttpHeaders();
    httpHeaders.set("Content-Type", "application/json");
    String ans = "{\"message\":\"Welcome to our REST services\"}";
    return ResponseEntity.ok().body(ans);
}
```



Demo / Updates

Demo Sensor

TODO tasks scenario here:

- Modify the DemoService
- Crack the bottleneck issue in SensorManager (*SensorManager.java)

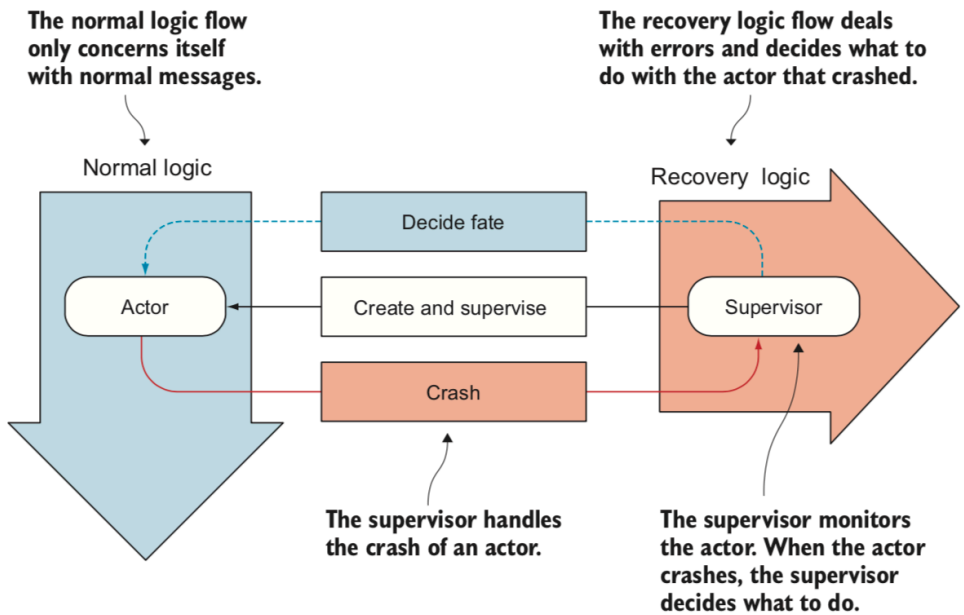


Figure: cr. Akka in Action

Demo Sensor - Updates

- SensorManager.java

Adding preStart() postStop() functions

Demos / Updates

Web Crawler Sensor

New Service added.

Updated:

```
+- process
  +- controller
  |  +- CrawlerController.java
  +- beans
  |  +- CrawlerEntity.java
  |  +- //CrawlerConfiguration.java
  |  +- //CrawlerEntity.java
  +- dao
  |  +- CrawlerRepo.java
  +- services
  |  +- CrawlerService.java
  |  +-
```

Ongoing...