

Akka Sensor Platform

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About Product

- Sensors to monitor information during the runtime
- Event-oriented, automatic job scheduler, 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

► Repository:

<https://github.com/fwqfwq/sensor-platform>

► Original Repository:

<https://github.com/JIMsZHOU/sensor-platform>

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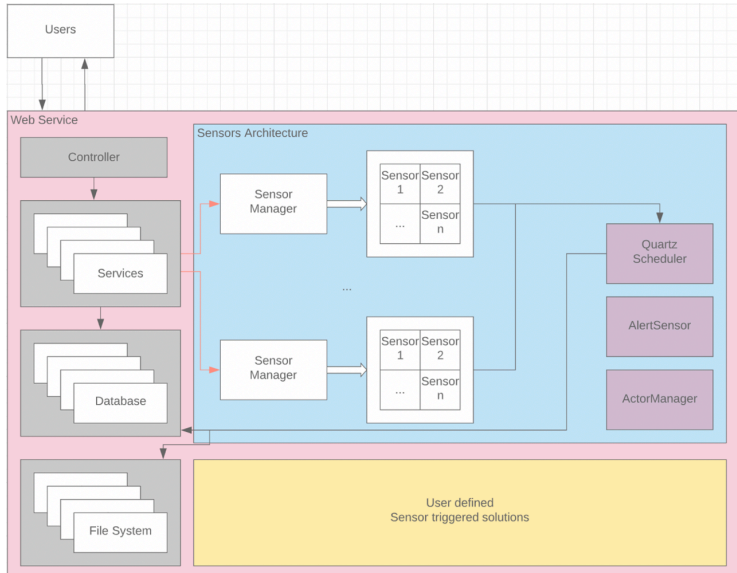
1. Structure
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Structure

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

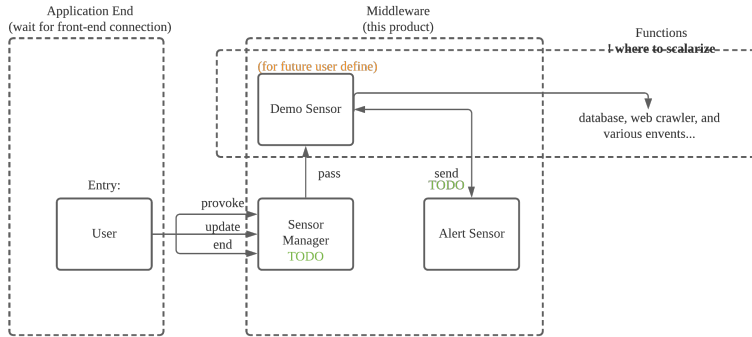
- ▶ Base: **Spring Boot**
Use Spring to build RESTful web services, with Controllers and Services .
- ▶ Main tool: **Akka**
Keep services concurrent, scalable, fault-tolerant and responsive in real-time, with JobManagers.
- ▶ Optimizer: **Quartz**
For a better performance in job scheduling.
- ▶ Endpoint: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

Structure



Workflow

Take a Demo Sensor for example.



Main Functions

1. Message sensor, listen specified information to specific task.
2. Crawler sensors, listen different signal to trigger different crawler processes.
3. Automated Order Dispatcher, define customized rules to send out orders.

Demo

Demo Sensor

Running Demo:

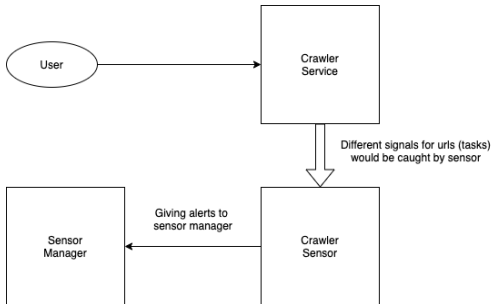
demo-controller Demo Controller	
GET	/ index
HEAD	/ index
POST	/ index
PUT	/ index
DELETE	/ index
OPTIONS	/ index
PATCH	/ index
GET	/start demoProcess
event-controller Event Controller	
POST	/event/add createEvent
GET	/event/delete/{eventId} deleteEvent
POST	/event/testToJson testToJson
POST	/event/update updateEvent
user-controller User Controller	
GET	/user/add-{userId} addUser
GET	/user/getAll getUsers
GET	/user/getById-{userId} getById
GET	/user/read-{userId} readUser
GET	/user/send/{userId}-{message} sendMessage

```
@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);
}
```

← → ↺ 🏠 ⓘ localhost:8080

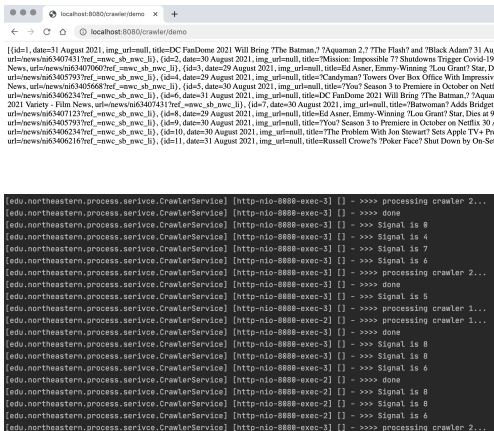
{"message":"Welcome to our REST services"}

Crawler Sensor



Crawler Sensor

Running:



The screenshot shows a web browser window at localhost:8080/crawler/demo displaying a list of 11 news items. Below the browser, a terminal window shows the log output of the crawler service, which is processing the items in parallel.

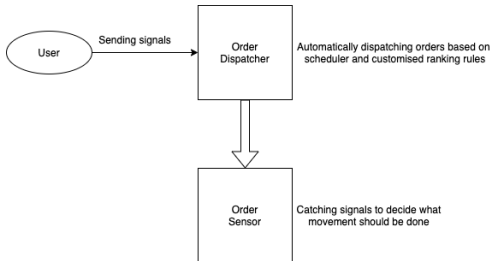
Browser Content:

```
{[id=1, date=31 August 2021, img_url=null, title=DC FunDome 2021 Will Bring 'The Batman,' 'Aquaman 2,' 'The Flash' and 'Black Adam? 31 Aug
url=news/n63407431?ref=_nwc_sb_nwc_li], [id=2, date=30 August 2021, img_url=null, title='Mission: Impossible 7? Shutdowns Trigger Covid-19
News, url=news/n63407060?ref=_nwc_sb_nwc_li], [id=3, date=29 August 2021, img_url=null, title=Ed Asner, Emmy-Winning 'Lion Grant' Star, Di
url=news/n63405793?ref=_nwc_sb_nwc_li], [id=4, date=29 August 2021, img_url=null, title='Candyman?' Towers Over Box Office With Impressive
News, url=news/n63405668?ref=_nwc_sb_nwc_li], [id=5, date=30 August 2021, img_url=null, title='You? Season 3 to Premiere in October on Netfl
url=news/n63406234?ref=_nwc_sb_nwc_li], [id=6, date=31 August 2021, img_url=null, title=DC FunDome 2021 Will Bring 'The Batman,' 'Aquaman 2,' 'The Flash' and 'Black Adam? 31 Aug
2021 Variety - Film News, url=news/n63407431?ref=_nwc_sb_nwc_li], [id=7, date=30 August 2021, img_url=null, title='Batwoman? Adds Bridget
url=news/n63407123?ref=_nwc_sb_nwc_li], [id=8, date=29 August 2021, img_url=null, title=Ed Asner, Emmy-Winning 'Lion Grant' Star, Dies at 9
url=news/n63405793?ref=_nwc_sb_nwc_li], [id=9, date=30 August 2021, img_url=null, title='You? Season 3 to Premiere in October on Netflix 30.8
url=news/n63406234?ref=_nwc_sb_nwc_li], [id=10, date=30 August 2021, img_url=null, title='The Problem With Jon Stewart? Sets Apple TV+ Pre
url=news/n63406216?ref=_nwc_sb_nwc_li], [id=11, date=31 August 2021, img_url=null, title=Russell Crowe's 'Poker Face? Shut Down by On-Set
```

Terminal Output:

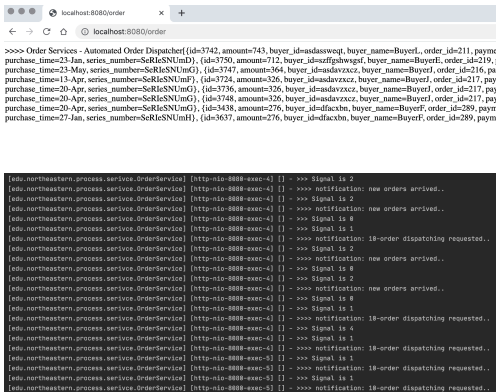
```
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> processing crawler 2...
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> done
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 8
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 4
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 7
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 6
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> processing crawler 2...
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> done
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 5
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> processing crawler 1...
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-2] [ - >>> processing crawler 1...
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> done
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 8
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 8
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> Signal is 6
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-2] [ - >>> done
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-2] [ - >>> Signal is 8
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-2] [ - >>> Signal is 8
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-2] [ - >>> Signal is 6
[edu.northeastern.process.service.CrawlerService] [http-nio-8080-exec-3] [ - >>> processing crawler 2...
```

Order Dispatcher Sensor



Order Dispatcher Sensor

Running:



The screenshot shows a web browser window with the address bar at 'localhost:8080/order'. Below the browser, a terminal window displays the following log output:

```
>>>> Order Services - Automated Order Dispatcher({id=3742, amount=743, buyer_id=asdaswegt, buyer_name=BuyerI, order_id=211, paym
purchase_time=23-Jan, series_number=SeRleSNUmG), {id=3750, amount=712, buyer_id=szfifghwsgsf, buyer_name=BuyerE, order_id=219,
purchase_time=23-May, series_number=SeRleSNUmG), {id=3747, amount=364, buyer_id=asdavzxcz, buyer_name=BuyerI, order_id=216, pa
purchase_time=13-Apr, series_number=SeRleSNUmF), {id=3724, amount=326, buyer_id=asdavzxcz, buyer_name=BuyerI, order_id=217, pay
purchase_time=20-Apr, series_number=SeRleSNUmG), {id=3736, amount=326, buyer_id=asdavzxcz, buyer_name=BuyerI, order_id=217, pay
purchase_time=20-Apr, series_number=SeRleSNUmG), {id=3748, amount=326, buyer_id=asdavzxcz, buyer_name=BuyerI, order_id=217, pay
purchase_time=20-Apr, series_number=SeRleSNUmG), {id=3438, amount=276, buyer_id=dfacxhn, buyer_name=BuyerF, order_id=289, paym
purchase_time=27-Jan, series_number=SeRleSNUmH), {id=3637, amount=276, buyer_id=dfacxhn, buyer_name=BuyerF, order_id=289, paym

[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 2
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: new orders arrived..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 2
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: new orders arrived..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 8
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 1
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: 10-order dispatching requested..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 2
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: new orders arrived..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 0
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 2
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: new orders arrived..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 8
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 1
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: 10-order dispatching requested..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 4
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>> Signal is 1
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-4] [] - >>>> notification: 10-order dispatching requested..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-5] [] - >>> Signal is 1
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-5] [] - >>>> notification: 10-order dispatching requested..
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-5] [] - >>> Signal is 1
[edu.northeastern.process.service.OrderService] [http-nio-8080-exec-5] [] - >>>> notification: 10-order dispatching requested..
```