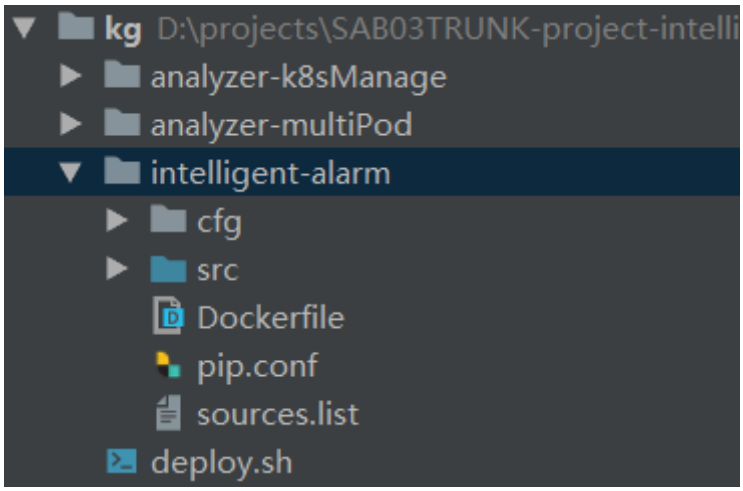
SA打包流程

以智能告警为例

Docker镜像创建

Dockerfile 是一个用来构建镜像的文本文件，文本内容包含了一条条构建镜像所需的指令和说明。

1. 在自己的项目路径下编写Dockerfile:

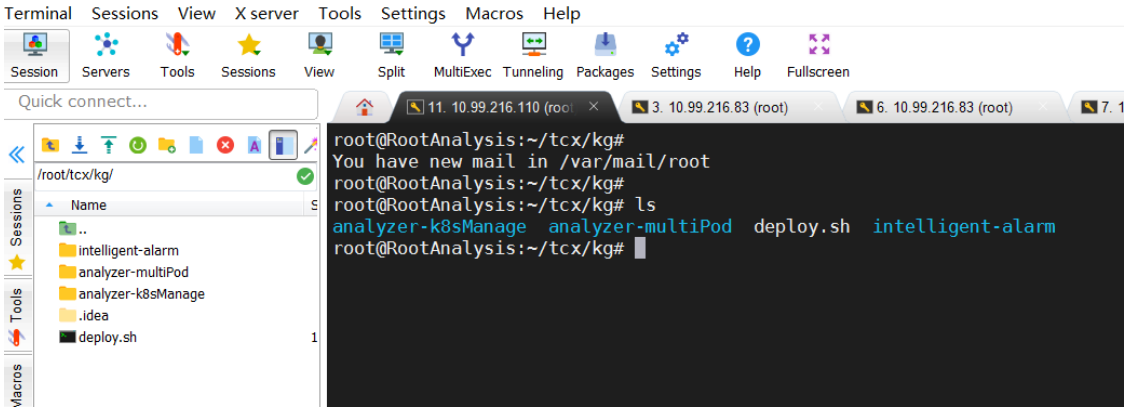


Dockerfile示例：

```
FROM ubuntu:16.04

RUN mkdir /root/.config\
    && mkdir /root/src\
    && mkdir /root/cfg

COPY pip.conf /root/.config/pip/
COPY sources.list /etc/apt/
COPY cfg /root/cfg
COPY src /root/src


RUN apt-get autoclean\
    && apt-get update\
    && apt-get install -y --no-install-recommends\
    build-essential \
    vim\
    python3-dev\
    python3-pip

RUN pip3 install  --upgrade pip
RUN pip3 install  --upgrade wheel
RUN pip3 --no-cache-dir install "setuptools<50.0.0" --upgrade

ENV PYTHONIOENCODING utf-8
ENV LANG C.UTF-8

RUN apt-get install tzdata -y
```

```
RUN cp /usr/share/zoneinfo/Asia/Shanghai /etc/localtime && echo
'Asia/Shanghai'>/etc/timezone

EXPOSE 6688

WORKDIR /root/src
RUN pip3 install -r requirements.txt
```

2. 上传最新的项目代码到镜像打包环境（`10.99.216.110`）

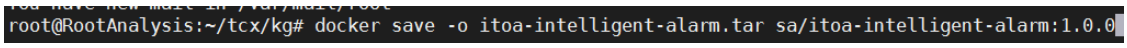


3. 执行镜像构建脚本

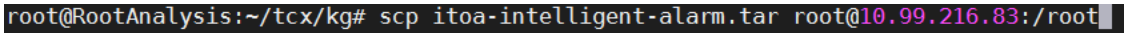
该脚本中的镜像构建命令如下：

```
docker build  --no-cache -t sa/itoa-intelligent-alarm:1.0.0 .
```

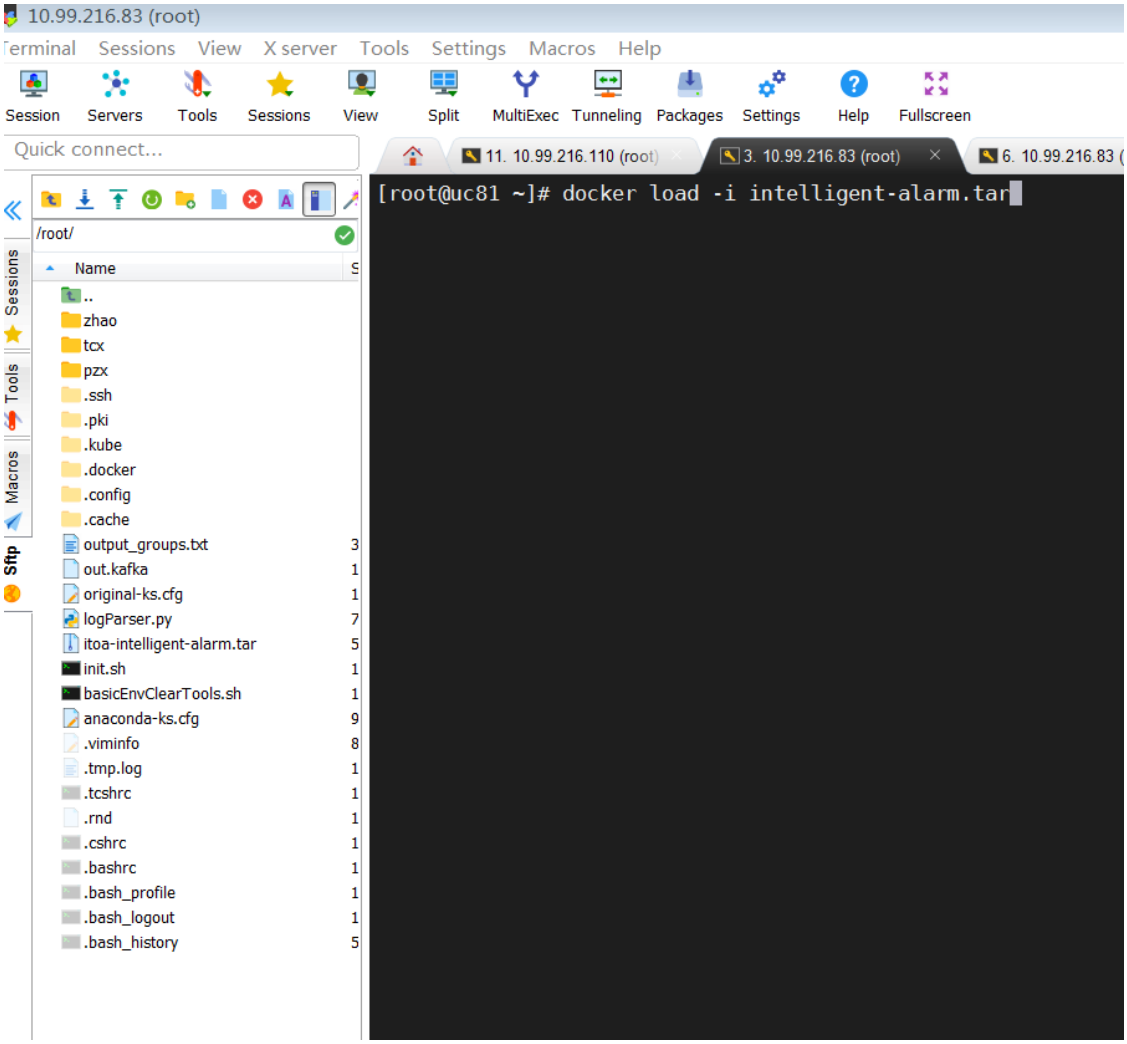
4. 构建完毕后保存镜像文件



5. 上传镜像文件包至SA环境（`10.99.216.83`）



6. 在SA服务器（`10.99.216.83`）上加载镜像

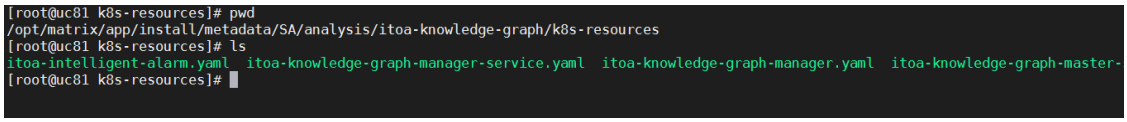


Pod部署

Pod代表部署的一个单位：Kubernetes中单个应用的实例，它可能由单个容器或多个容器共享组成的资源。

1. 编写pod的yaml配置

   Pod的yaml配置文件所在路径：



   在SA代码中的路径：

   `health/package/itoa-3.0/metadata/analysis/itoa-knowledge-graph/k8s-resources/itoa-intelligent-alarm.yaml`

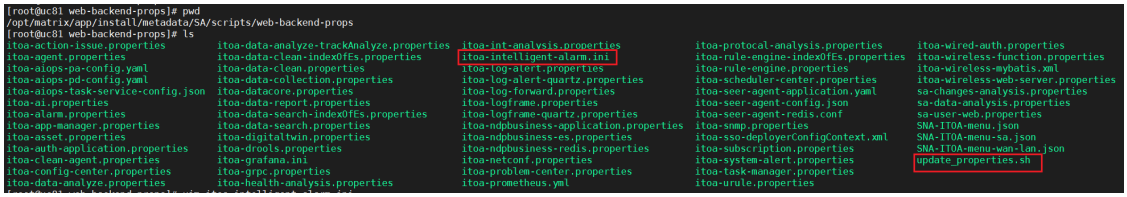
   yaml配置文件示例（`itoa-intelligent-alarm.yaml`，各参数详解可参考https://www.cnblogs.com/bigberg/p/9203619.html）：

```
apiVersion: extensions/v1beta1
  kind: Deployment
  metadata:
   name: itoa-intelligent-alarm
   namespace: sa
 labels:
   app: intelligent-alarm
  spec:
   replicas: 1
```

```yaml
    selector:
    matchLabels:
      app: intelligent-alarm
    template:
    metadata:
      labels:
        app: intelligent-alarm
    spec:
      nodeSelector:
        seeranalyzer-label: seeranalyzer-label
      containers:
        - name: intelligent-alarm
          command: ["sh","/root/src/start.sh"]
          image: sa/itoa-intelligent-alarm:1.0.0
          imagePullPolicy: IfNotPresent
          resources:
            limits:
              cpu: "5"
            requests:
              cpu: "1"
              # hostPort: 5555
          volumeMounts:
            - name: app-prop-v
              mountPath: /root/cfg/intelligent-alarm.ini
              subPath: re
      volumes:
        - name: log
          emptyDir: {}
        - name: log-diag
          hostPath:
            path: /var/log/matrix-diag/SA
        - name: app-prop-v
          configMap:
            name: web-backend-props #已经创建的configMap的名称
            items:
              - key: itoa-intelligent-alarm.ini
                path: re
```

2. 配置文件

其中，configmap存储程序运行所需的外部文件，文件格式没有限制，SA环境上对应的路径：



新增配置文件`itoa-intelligent-alarm.ini`，内容:

```
[DEFAULT]
timeslot = 60
timeout = 300
group_overlap = 10
low_prior_filter = True
flapping_filter = True
kafka.consumer.servers = itoa-kafka-service1:6667
kafka.consumer.group.id = intelligent-alarm
kafka.consumer.topic = security
url = http://itoa-health-analysis:8080/healthAnalysis/alarmToUCenter/send
```

在SA项目代码中的路径为

`health/package/itoa-3.0/metadata/scripts/web-backend-props/itoa-intelligent-alarm.ini`

对于新增的配置文件，需执行目录下的`update_properties.sh`来使之生效，更新k8s的configmap

```
[root@uc81 web-backend-props]# sh update_properties.sh
```

3. 根据yaml配置创建pod

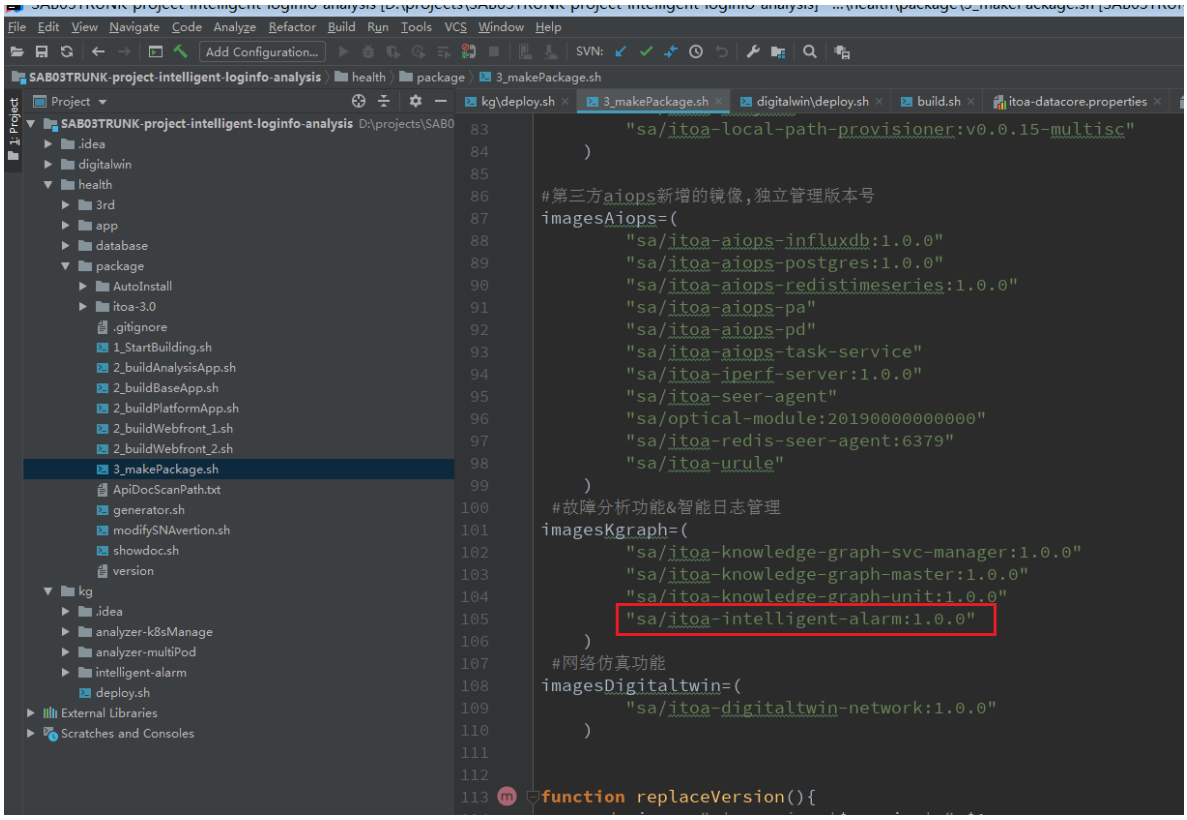
   进入yaml文件所在路径，执行如下命令创建pod

```
[root@uc81 k8s-resources]# pwd
/opt/matrix/app/install/metadata/SA/analysis/itoa-knowledge-graph/k8s-resources
[root@uc81 k8s-resources]# kubectl create -f itoa-intelligent-alarm.yaml
```

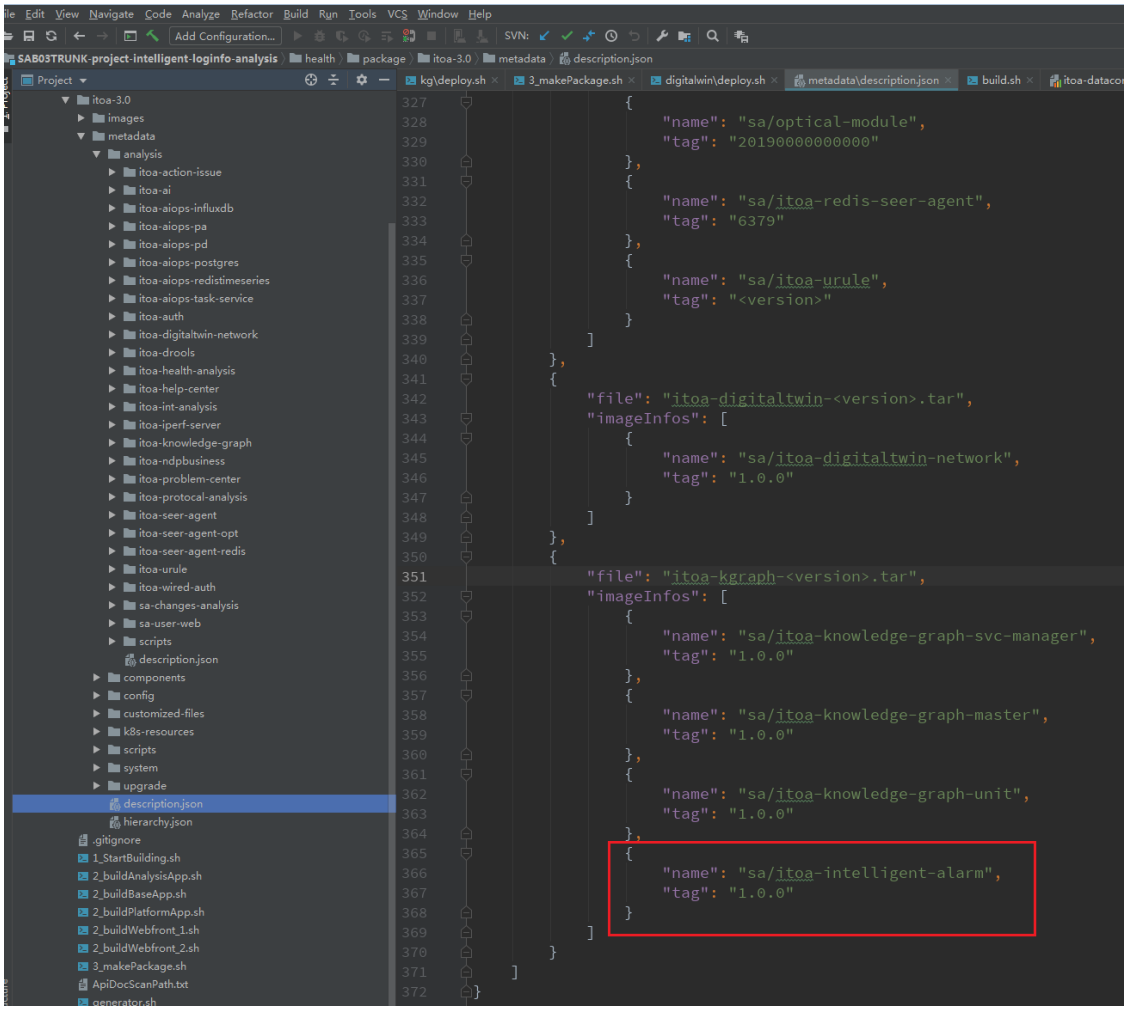
   至此可以完成pod的创建，运行项目代码

以上是手动部署pod的流程，想要实现jekins构建时在代码中自动打包部署，还需要更新相应的构建脚本

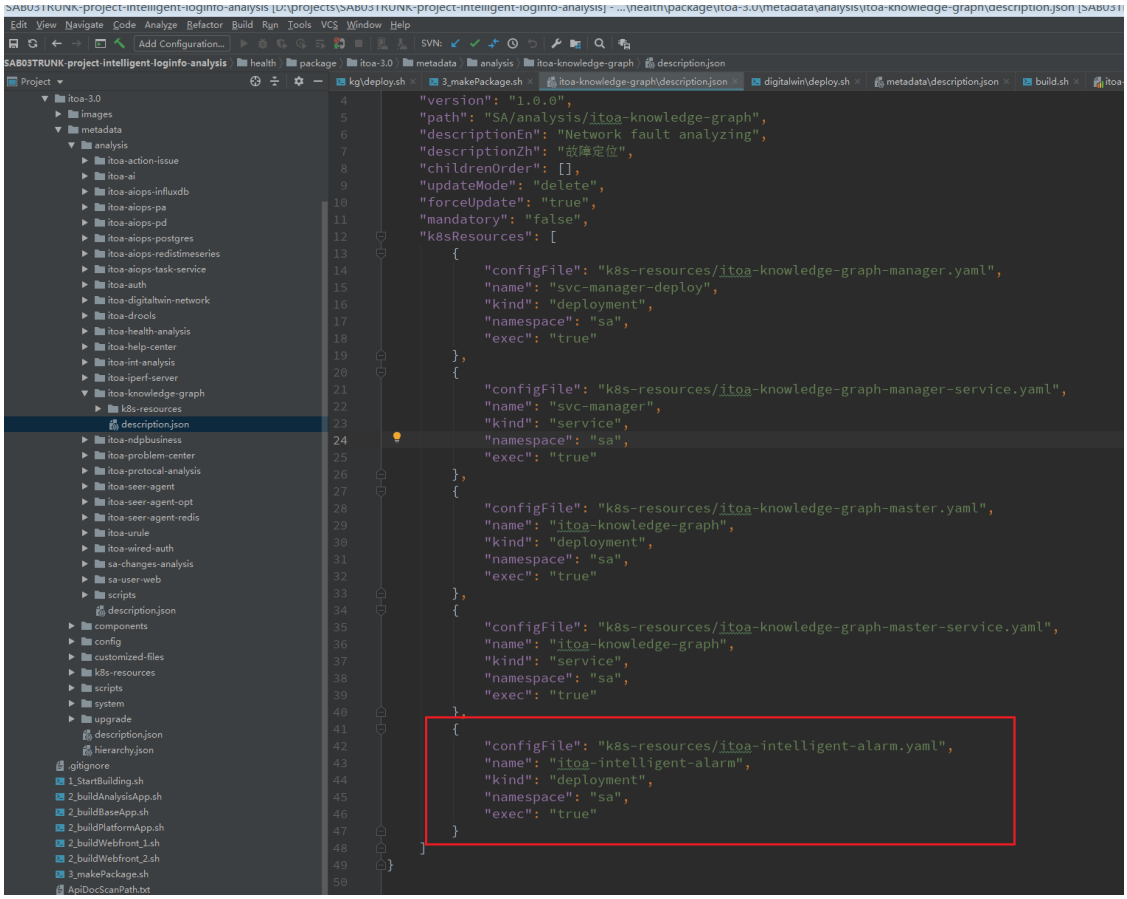
1. `health/package/3_makePackage.sh`



2. `health/package/itoa-3.0/metadata/description.json`

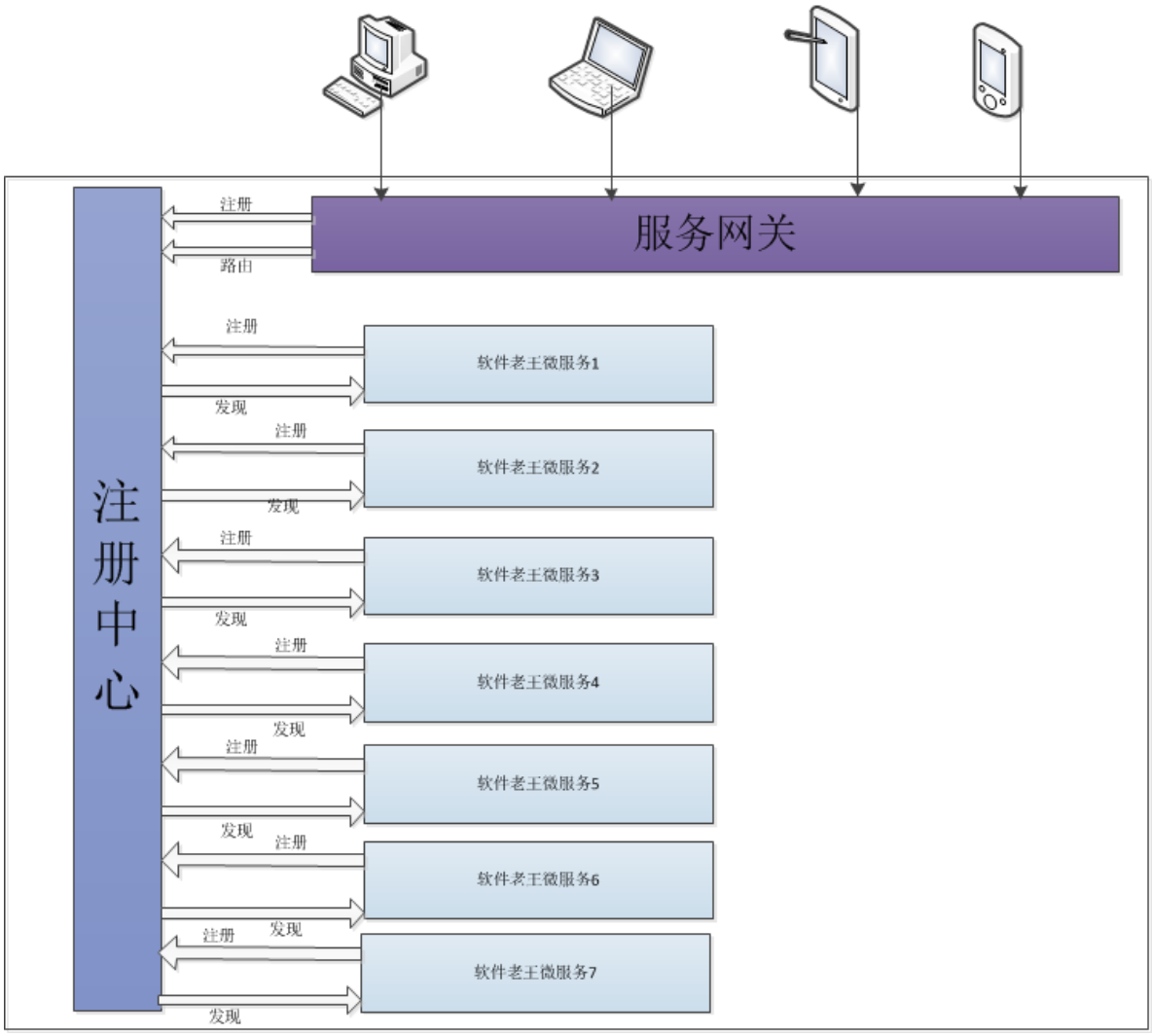


3. `health/package/itoa-3.0/metadata/analysis/itoa-knowledge-graph/description.json`



拓展：增加网关

（智能告警目前不涉及对外接口，因此以分支站点模块举例）



（一）所有应用或者服务要想对外提供服务（包括网关），必须首先到注册中心进行注册。

（二）所有访问通过服务网关进行访问，然后由服务网关路由到对应服务中心进行交互访问。

以SA上的JAVA代码数据采集SiteAnalysis模块举例：

1. 在eureka注册中心注册自己模块的服务：

   SA代码路径`health/package/itoa-3.0/metadata/scripts/web-backend-props/itoa-site-analysis.properties`

   ```
   spring.application.name=SiteAnalysis

   eureka.client.service-url.defaultZone=http://itoa-eureka:8080/eureka
   eureka.instance.prefer-ip-address=true
   eureka.client.healthcheck.enable=true
   #eureka.instance.instanceId=${spring.application.name}:Maiintn
   eureka.instance.hostname=itoa-site-analysis
   ```

2. 在zuul网关配置中增加相应路由:

   SA代码路径`health/package/itoa-3.0/metadata/scripts/web-backend-props/itoa-datacore.properties`

```
#ZUUL SiteAnalysis
zuul.SiteAnalysis.path=/SiteAnalysis/**
zuul.routes.SiteAnalysis.stripPrefix=false
zuul.routes.SiteAnalysis.serviceId=SiteAnalysis
```

至此，便可以在外部调用SA上自己开发的SiteAnalysis模块相关接口

添加子页签

在应用分析下面添加子页签：

metadata\scripts\register-ucenter\menu\sdwan\sa_sdwan.json——sdwan页签配置文件

```
{
  "id": "wan.analysis.health.application.applicationanalysis",
  "url":
"/app/itoa/#/healthAnalysis/appStreamAnalysis/siteAppPerformance/applicationPerf
ormance",
  "nameEn": "Application Group Flow Analysis",
  "nameZh": "应用流分析",
  "priority": 11,
  "appName": "ucenter-analyzer",
  "parentId": "wan.analysis.health.application",
  "productName": "AD-WAN"
},
```

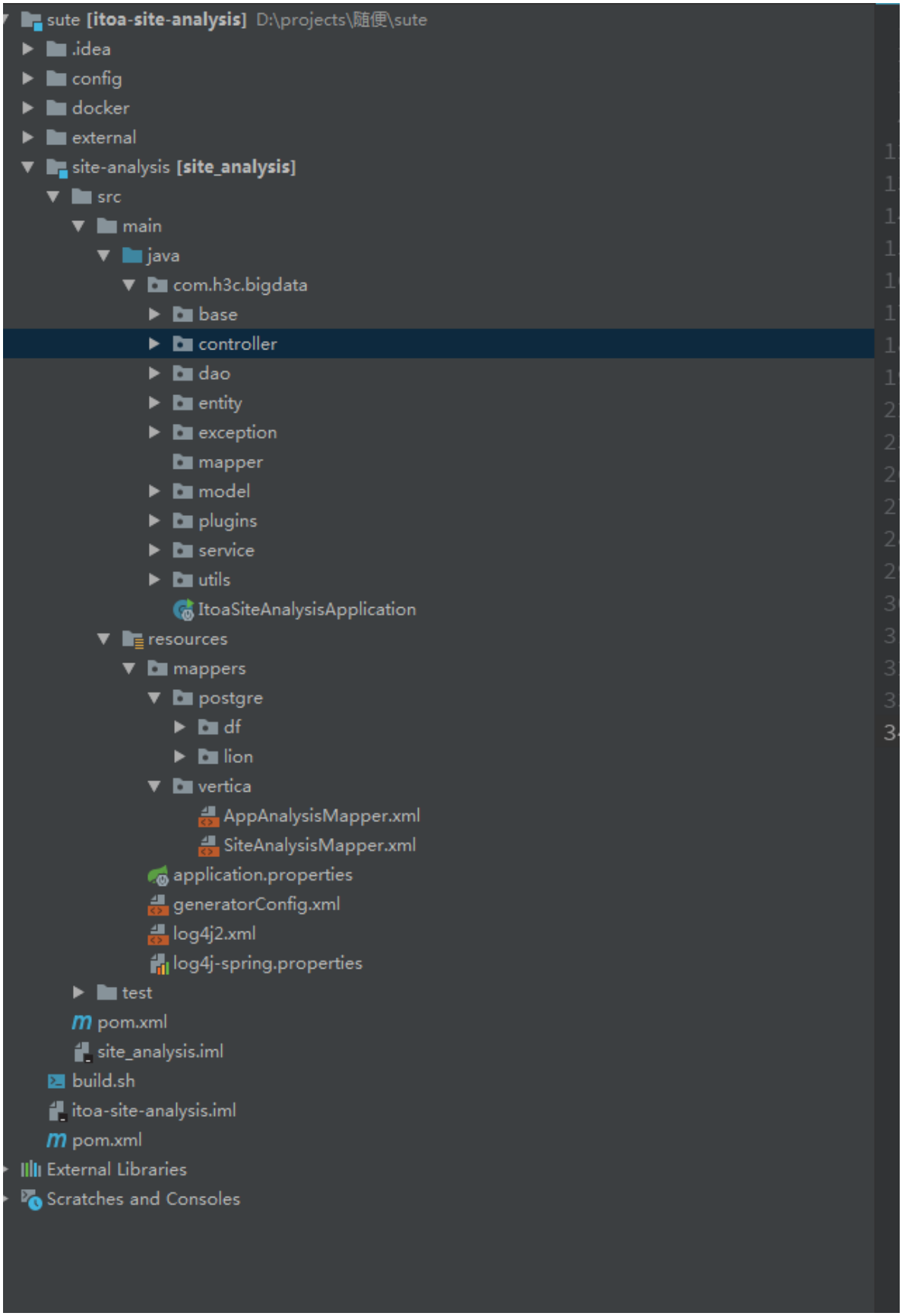
metadata/scripts/register-ucenter/menu/sdwan/single_sdwan.json——单机版sdwan页签配置文件

```
{
  "id": "singleWan.analysis.health.application.applicationanalysis",
  "url":
"/app/itoa/#/healthAnalysis/appStreamAnalysis/siteAppPerformance/applicationPerf
ormance",
  "nameEn": "Application Group Flow Analysis",
  "nameZh": "应用流分析",
  "priority": 11,
  "appName": "sa-sdwan",
  "parentId": "singleWan.analysis.health.application",
  "productName": "SA-WAN"
}
```

metadata/scripts/register-ucenter/menu/universe/universe_sdwan.json —— 全域场景页签配置文件

```
{
  "id": "ucenter.analysis.health.application.applicationanalysis",
  "url":
"/app/itoa/#/healthAnalysis/appStreamAnalysis/siteAppPerformance/applicationPerf
ormance",
  "nameEn": "Application Group Flow Analysis",
  "nameZh": "应用流分析",
  "priority": 51,
  "appName": "ucenter-analyzer",
  "parentId": "ucenter.analysis.health.application",
  "productName": "UCenter",
  "menuType": "universe"
},
```

Spring目录结构



bigdata：

base: 基础公共类

controller:视图层，对外提供接口，提供接口路径，接收前端参数。——1

service: controller接收参数之后，调用service接口，进行运算或者逻辑处理。——2

dao: service需要查数据库是，提供数据库接口. ——3

entity / model : 自定义实体类

exception ： 自定义异常

plugins : 插件，例如数据库的启动类，在spring启动时，会扫描并自动注入，完成连接。

utils: 公共工具类

resources：配置文件 ，包括xml，properties等

application.properties : spring项目配置文件

log4j2.* :日志配置文件，包含日志输出类型，文件位置等

mapper: sql语句。

test：测试用例