

第 11 节

使用Skywalking对Petclinic微服务进行埋点

本课内容

- 如何使用Skywalking Agent?
- 构建Skywalking Agent Sidecar镜像
- 更新Petclinic微服务的k8s部署文件
- 发布经过Skywalking埋点后的Petclinic微服务



如何使用Skywalking Agent?



- 使用官方提供的基础镜像
- 自制带agent包的基础镜像
- sidecar模式挂载agent文件

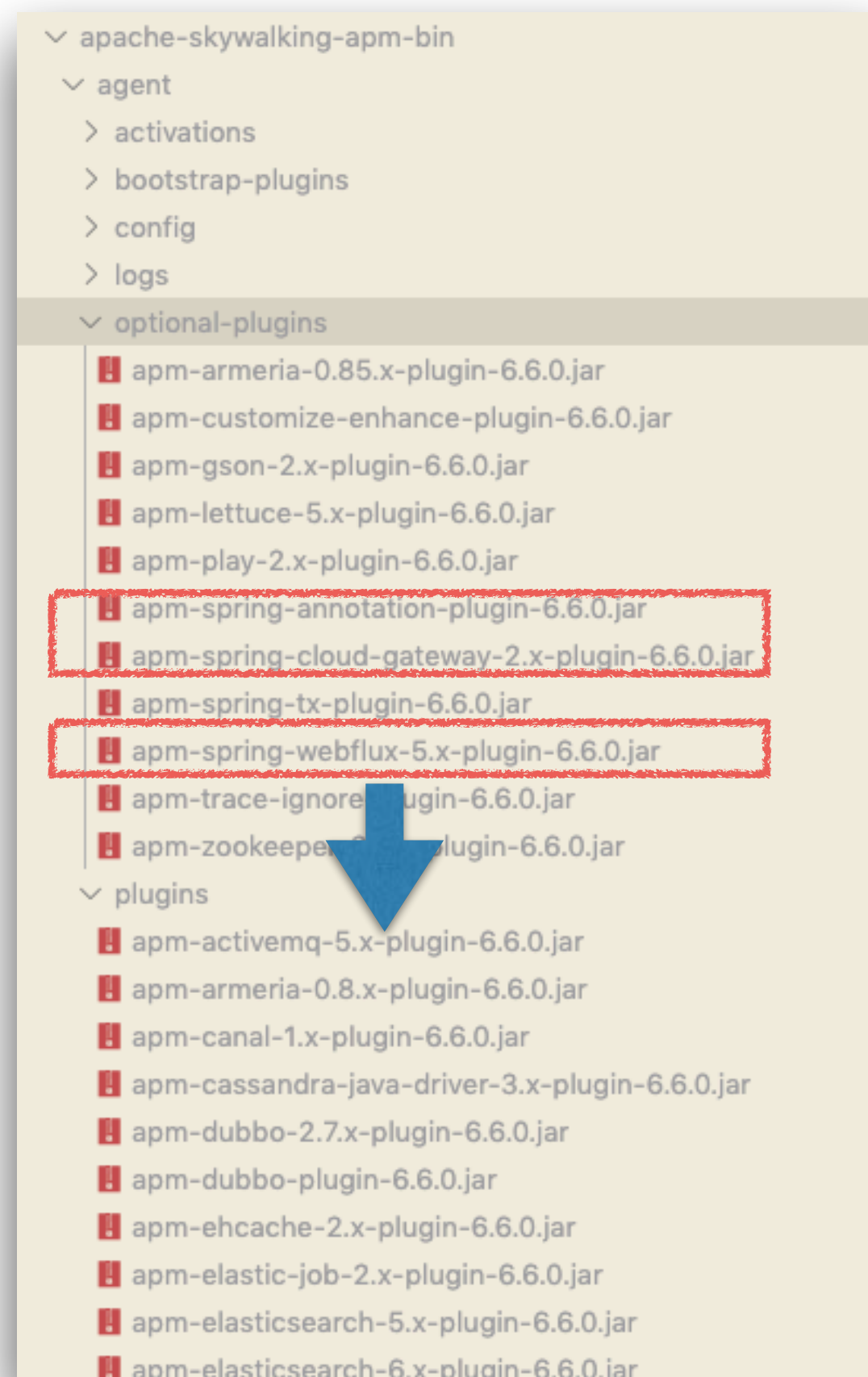
<https://skywalking.apache.org/zh/blog/2019-08-30-how-to-use-Skywalking-Agent.html>

<https://github.com/apache/skywalking/blob/6.x/docs/en/setup/service-agent/java-agent/README.md>

Skywalking Agent Sidecar Dockerfile

```
4 FROM busybox:latest
5
6 ENV LANG=C.UTF-8
7
8 RUN set -eux && mkdir -p /usr/skywalking/agent/
9
10 ADD apache-skywalking-apm-bin/agent/ /usr/skywalking/agent/
11
12 WORKDIR /
```

构建Skywalking Agent Sidecar镜像



<https://skywalking.apache.org/downloads/>

```
1. william@jskill: ~/csdn/k8s-msa-in-action/ch08/11 (zsh)
→ 11 git:(master) x minikube docker-env
export DOCKER_TLS_VERIFY="1"
export DOCKER_HOST="tcp://192.168.64.10:2376"
export DOCKER_CERT_PATH="/Users/william/.minikube/certs"
# Run this command to configure your shell:
# eval $(minikube docker-env)
→ 11 git:(master) x eval $(minikube docker-env)
→ 11 git:(master) x pwd
/Users/william/csdn/k8s-msa-in-action/ch08/11
→ 11 git:(master) x ls
Dockerfile                                apache-skywalking-apm-bin
apache-skywalking-apm-6.6.0.tar.gz
→ 11 git:(master) x docker build . -t spring2go/skywalking-agent-sidecar:6.6.0
Sending build context to Docker daemon 302.9MB
Step 1/5 : FROM busybox:latest
----> 6d5fcfe5ff17
Step 2/5 : ENV LANG=C.UTF-8
----> Using cache
----> e4ce5463719a
Step 3/5 : RUN set -eux && mkdir -p /usr/skywalking/agent/
----> Using cache
----> ea839dde7ff5
Step 4/5 : ADD apache-skywalking-apm-bin/agent/ /usr/skywalking/agent/
----> Using cache
----> 98fa6c55d8be
Step 5/5 : WORKDIR /
----> Using cache
----> be0c7744e4a5
Successfully built be0c7744e4a5
Successfully tagged spring2go/skywalking-agent-sidecar:6.6.0
→ 11 git:(master) x docker images
```


更新Petclinic微服务的k8s部署文件

```
14 spec:
15   initContainers:
16     - image: spring2go/skywalking-agent-sidecar:6.6.0
17       name: sw-agent-sidecar
18       imagePullPolicy: IfNotPresent
19       command: ["sh"]
20       args:
21         [
22           "-c",
23           "mkdir -p /skywalking/agent && cp -r /usr/skywalking/agent/* /skywalking/agent",
24         ]
25       volumeMounts:
26         - mountPath: /skywalking/agent
27           name: sw-agent
28   containers:
29     - name: customers
30       image: spring2go/spring-petclinic-customers-service:1.0.0.RELEASE
31       env:
32         - name: JAVA_OPTS
33           value: -javaagent:/usr/skywalking/agent/skywalking-agent.jar
34         - name: SW_AGENT_NAME
35           value: petclinic-customers
36         - name: SW_AGENT_COLLECTOR_BACKEND_SERVICES
37           value: oap.skywalking:11800 # FQDN: servicename.namespace.svc.cluster.local
38         - name: SERVER_PORT
39           value: "8080"
40       volumeMounts:
41         - mountPath: /usr/skywalking/agent
42           name: sw-agent
43   volumes:
44     - name: sw-agent
45       emptyDir: {}
```

发布Skywalking埋点后的Petclinic微服务

```
1. william@jskill: ~/mydev/github/spring2go/spring-petclinic-msa/k8s/local-skywalking (zsh)
→ local-skywalking git:(master) x pwd
/Users/william/mydev/github/spring2go/spring-petclinic-msa/k8s/local-skywalking
→ local-skywalking git:(master) x ls
customers-svc.yml  vets-svc.yml      web-app.yml
gateway-svc.yml   visits-svc.yml
→ local-skywalking git:(master) x kubectl apply -f .
deployment.apps/customers created
service/customers created
deployment.apps/gateway created
service/gateway created
deployment.apps/vets created
service/vets created
deployment.apps/visits created
service/visits created
deployment.apps/web created
service/web created
→ local-skywalking git:(master) x kubectl get all
NAME                                READY   STATUS    RESTARTS   AGE
pod/customers-6f9b49b5bb-c64bv      1/1     Running   0           10s
pod/gateway-69c875b46-vd1hr         1/1     Running   0           10s
pod/vets-574f8c8cf6-j46bc          1/1     Running   0           10s
pod/visits-b4589b886-j8wqv         0/1     Running   0           10s
pod/web-5f65fcff6d-dmkct           1/1     Running   0            9s

NAME                                TYPE               CLUSTER-IP      EXTERNAL-IP   PORT(S)          AGE
service/customers                   ClusterIP          10.96.185.107   <none>        8080/TCP         10s
service/gateway                     NodePort           10.96.10.32     <none>        8080:31080/TCP   10s
service/kubernetes                   ClusterIP          10.96.0.1       <none>        443/TCP          23d
service/vets                        ClusterIP          10.96.75.76     <none>        8080/TCP         10s
service/visits                      ClusterIP          10.96.118.135   <none>        8080/TCP         10s
service/web                         ClusterIP          10.96.229.67    <none>        8080/TCP         9s
```

校验埋点生效

```

1. kubectl exec -it customers-6f9b49b5bb-c64bv sh (kubectl)
→ local-skywalking git:(master) ✕ kubectl get po
NAME                                READY   STATUS    RESTARTS   AGE
customers-6f9b49b5bb-c64bv         1/1     Running   0           10m
gateway-69c875b46-vdlhr           1/1     Running   0           10m
vets-574f8c8cf6-j46bc             1/1     Running   0           10m
visits-b4589b886-j8wqv            1/1     Running   0           10m
web-5f65fcff6d-dmkct              1/1     Running   0           10m
→ local-skywalking git:(master) ✕ kubectl exec -it customers-6f9b49b5bb-c64bv sh
/ # ls
bin      etc      lib      mnt      proc     run      srv      tmp      var
dev      home    media    opt      root    /sbin    sys      usr

/ # ls usr/skywalking/agent/
activations      config              optional-plugins    skywalking-agent.jar
bootstrap-plugins  logs                plugins
/ #

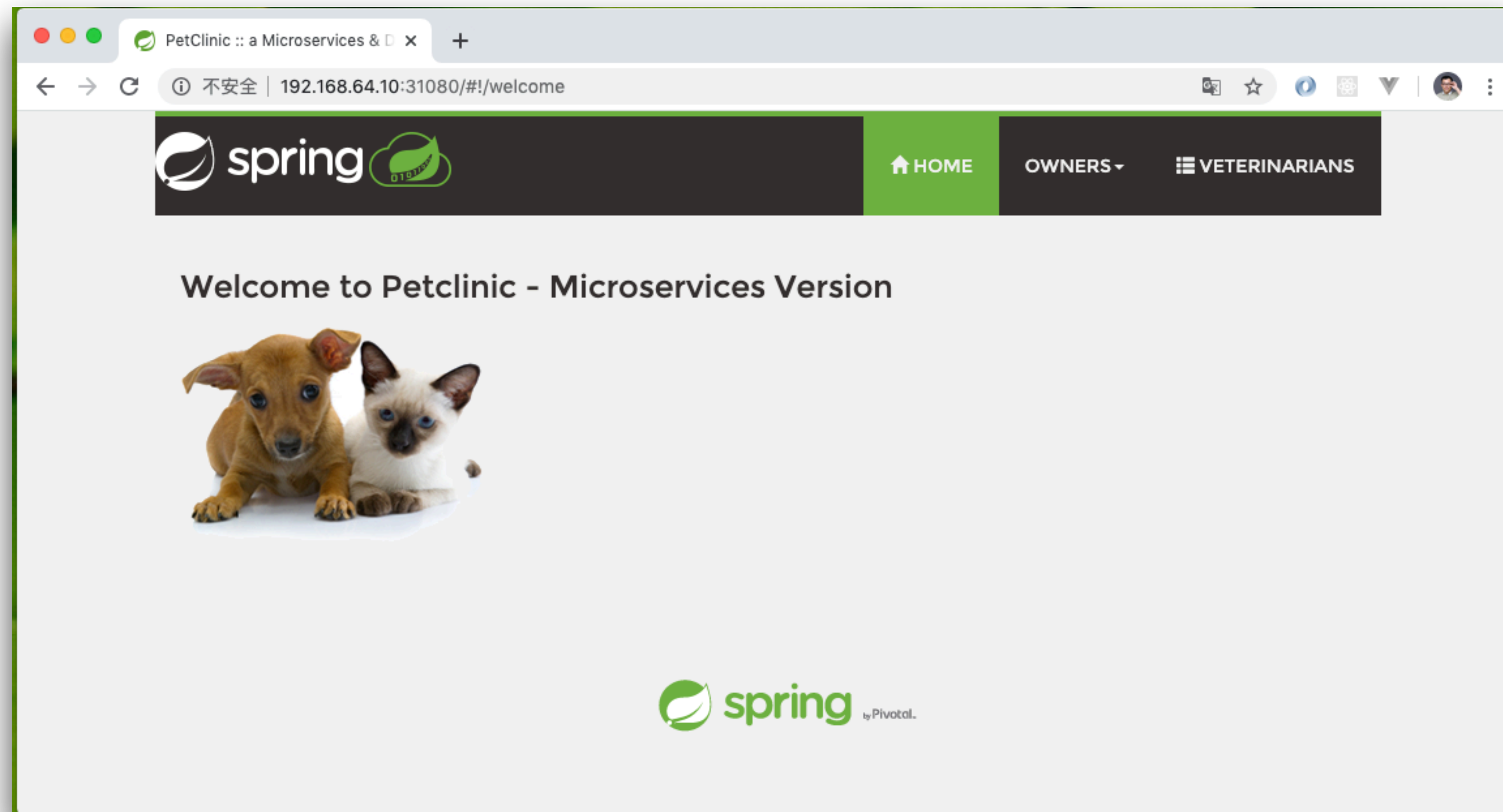
```

```

1. william@jskill: ~/mydcw/github/spring2go/spring-petclinic-msa/k8s/local-skywalking (zsh)
local-skywalking git:(master) x kubectl get po
NAME                                READY    STATUS    RESTARTS   AGE
customers-6f9b49b5bb-c64bv          1/1      Running   0           8m24s
gateway-69c875b46-vd1hr             1/1      Running   0           8m24s
vets-574f8c8cf6-j46bc              1/1      Running   0           8m24s
visits-b4589b886-j8wqv             1/1      Running   0           8m24s
web-5f65fcff6d-dmkct               1/1      Running   0           8m23s
local-skywalking git:(master) x kubectl logs customers-6f9b49b5bb-c64bv
DEBUG 2020-02-14 04:14:55:515 main AgentPackagePath : The beacon class location is jar:file:/usr/skywalking/agent/sk
ywalking-agent.jar!/org/apache/skywalking/apm/agent/core/boot/AgentPackagePath.class.
INFO 2020-02-14 04:14:55:522 main SnifferConfigInitializer : Config file found in /usr/skywalking/agent/config/agent
.config.

```


浏览器校验Petclinic微服务



本课小结



- Skywalking Agent容器埋点方式
 - 使用官方提供的基础镜像
 - 自己制作带Agent的基础镜像
 - Skywalking Agent Sidecar镜像
- Skywalking Agent Sidecar
 - initContainer复制agent到emptyDir，和主容器共享agent目录
 - env ~ JAVA_OPTS : -javaagent:/usr/skywalking/agent/skywalking-agent.jar
 - 跨名字空间访问服务: servicename.namespace