
CKA-考前辅导

讲师：老段 RHCE/RHCA/COA/CKA

老段工作室
www.rhce.cc
1. 考试注册
老段工作室
www.rhce.cc

考试注册

注册地址

<https://www.cncf.io/certification/cka/>

跳转到

<https://identity.linuxfoundation.org/>

THE LINUX FOUNDATION

Log in with Facebook
Log in with Google
Log in with GitHub
Log in with OpenStack

Or

I already have a Linux Foundation ID
I need to create a Linux Foundation ID

Username

Password

Log in

[Request new password](#)

About Linux Foundation ID

Linux Foundation ID is a free account that identifies you and securely provides access to web sites of The Linux Foundation, our projects, and our service providers.

[Terms of Use](#) [Privacy Policy](#)

Copyright © 2018 The Linux Foundation

openstack.

Welcome to OpenStackId!

496741861@qq.com

☐ Remember me

Sign in **Cancel**

[Forgot password?](#)

[Register for an OpenStack ID](#)

[Verify OpenStack ID](#)

Certified Kubernetes Administrator (CKA) Program

The **Certified Kubernetes Administrator (CKA)** program was created by the Cloud Native Computing Foundation (CNCF) in collaboration with The Linux Foundation, to help develop the Kubernetes ecosystem. As one of the highest quality open source projects, Kubernetes use is exploding.

The Cloud Native Computing Foundation is committed to growing the community of Kubernetes Administrators, thereby allowing continued growth across the broad set of companies and organizations that are using Kubernetes. Certification is a key step in that process, allowing certified administrators to quickly establish their credibility and value in the job market, and also allowing companies to more quickly hire high-quality teams to support their growth.

Cost: \$300 | Online Exam

REGISTER FOR THE EXAM

TEAM FOR THE EXAM



<https://identity.linuxfoundation.org/checkout/472184>

Backups and Migrations Installation and Configuration Cluster Administration kubernetetes/CHAN



Items in this order

Product	Price	Quantity	Total
Certified Kubernetes Administrator	\$300.00	1	\$300.00
Order total			\$300.00

Coupons

Add coupon

By applying a coupon code, you agree that (a) we may share your information with the organization sponsoring the coupon code and (b) the sponsoring organization may contact you and use your information pursuant to its applicable privacy policy. Information on the organization sponsoring this coupon code is available [here](#).

Billing information

Addresses on file
Xinxin Road Dongnanjun
You may select a pre-existing address on file.

Full name *
chaofei duan

Company

Country *
China

Address 1 *
Xinxin Road Dongnanjun

Address 2

Payment

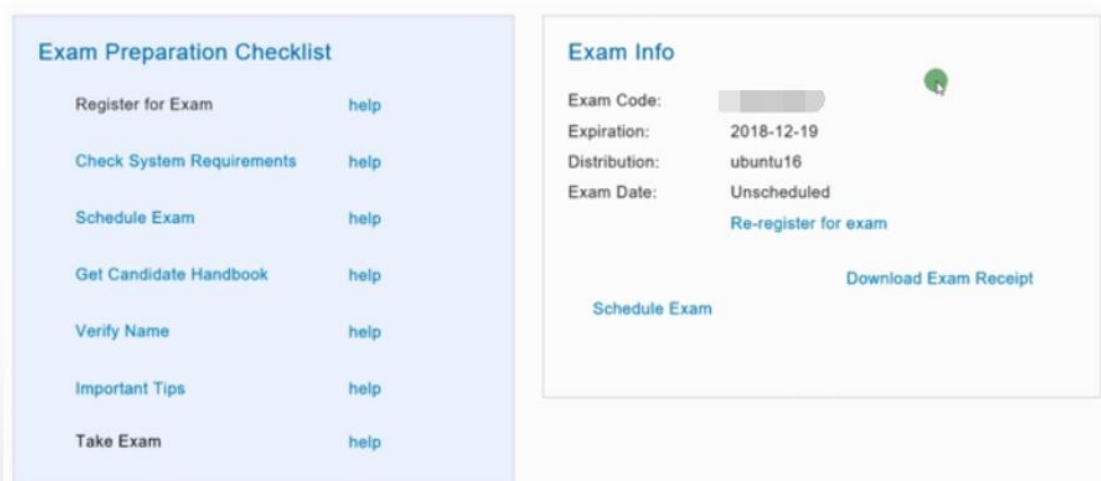
Please enter your payment information below.

Card owner
chaofei duan

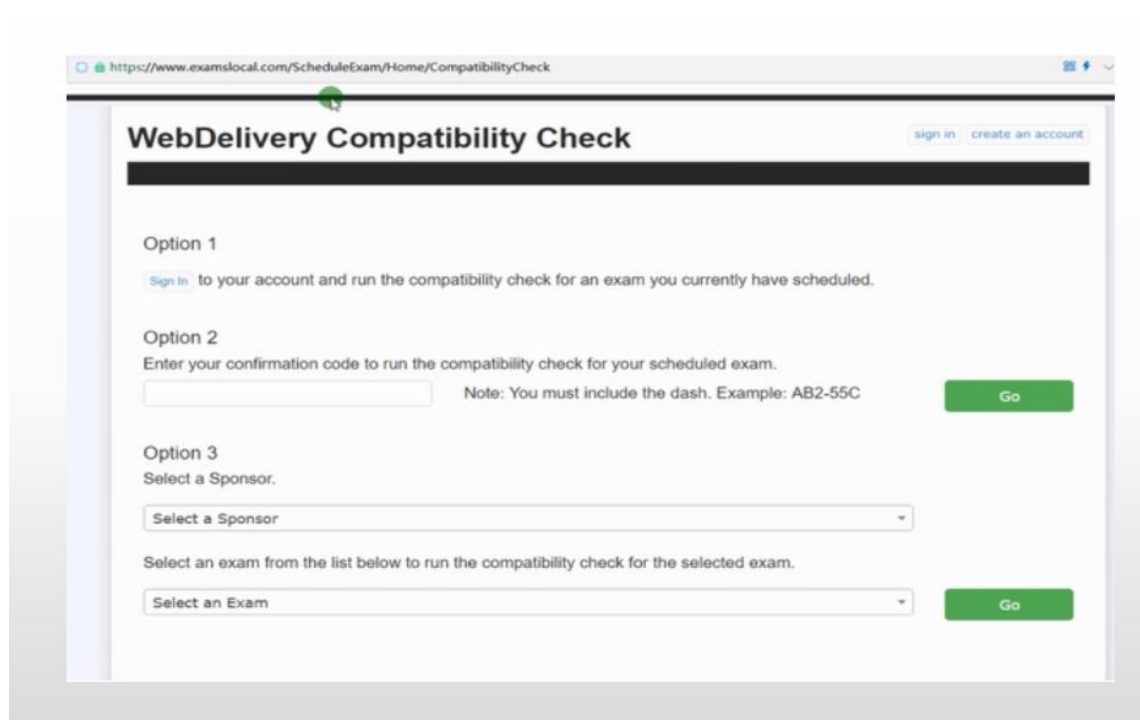
Card number

Expiration

Security code
3 or 4 digit code on back of card



上图左侧的 "Check System Requirements" 是用来检测考试用的机器是否满足考试条件的，点击它，会打开一个新的页面：












Step 1: Install the Innovative Exams Google Chrome Extension when prompted or install by clicking below:

[Install Extension](#)

or manually install the extension [HERE](#).


Step 2: Verify the following minimum requirements

Component	Minimum Requirement	Status	Action Required
 Operating System	<ul style="list-style-type: none">Windows XP, Vista, 7, 8Mac OS X and aboveLinuxChrome OS	✓	
 Web Browser	Current version of Google Chrome or Chromium.	✓	
 Browser Settings	Your browser must accept 3rd party cookies for the duration of the exam ONLY.		Please ensure that your browser accepts 3rd party cookies for the duration of the exam ONLY. To change your settings visit: chrome://settings/content and unblock 3rd party cookies.
 Webcam/Microphone	<ul style="list-style-type: none">Minimum VGA 640 x 480 resolutionEnabled built in or external microphone	✓	
 Google Chrome Extension	Install Innovative Exams Google Chrome Extension	✓	
 Ports	TCP: port 80 and 443	⚙️	
 Bandwidth	Minimum 500Kbps download and 256Kbps upload Recommended 5Mbps or higher download and upload	✓	Minimum and Recommended bandwidth may differ depending on your exam. Please refer to your exam confirmation e-mail for any such differences.
 Hardware Requirements	<ul style="list-style-type: none">1GB RAM & 2GHz dual core processorMinimum 1280 x 800 resolution		Please ensure that you meet the minimum hardware requirements, listed to the left, before launching your exam at scheduled time.
 Testing Environment	<ul style="list-style-type: none">Room must be quiet, private and well lit. Public spaces such as coffee shops, stores, etc. are not allowed.Desk must clear of all notes and electronics.Examinee should reside in the center of the camera frameNo bright lights or windows behind the examinee		Please ensure that you meet the testing environment requirements, listed to the left, before launching your exam at scheduled time.

Exam Preparation Checklist

[Register for Exam](#) [help](#)
[Check System Requirements](#) [help](#)
[Schedule Exam](#) [help](#)
[Get Candidate Handbook](#) [help](#)
[Verify Name](#) [help](#)
[Important Tip](#) [help](#)
[Take Exam](#) [help](#)

Exam Info

Exam Code: 
Expiration: 2018-12-19
Distribution: ubuntu16
Exam Date: Unscheduled
[Re-register for exam](#)
[Schedule Exam](#) [Download Exam Receipt](#)

在此处可以看到已经注册了的考试，点击"Schedule Exam"：

<http://www.examslocal.com/>

[Schedule an Exam](#) | [My Exams](#) | [My Account](#) | [Support](#) | [Compatibility Tool](#) | [Exam FAQs](#)

Schedule an Exam

You are signed in as 496741861@qq.com · [sign off](#)

Search Sponsor and Exam

[Eligible Exams](#)

Exam Name	Sponsor	Exam Code
Certified OpenStack Administrator	Linux Foundation	COA-SUSE

Search Here or click [here](#) if you have an Invitation Code.

[Next](#)

psi

Schedule an Exam | My Exams | My Account | Support | Compatibility Tool | Exam FAQs

You are signed in as 498741861@qq.com sign off

Schedule an Exam

Select Desired Date and Time

Sponsor & Exam [change](#)

Linux Foundation - Certified OpenStack Administrator
Exam Code: COA-SUSE
[Handbook Link](#)
Exam Duration: 150 mins
Language: English

*From: 12/28/2017 9:00 pm

*Time Zone: (UTC+08:00) Beijing, Chongqing, Hong Kong, U.S.A.

Current Selected Time: 8:12 AM

[Next](#)

依次选择要选择的日期、时间和时区，选择Next:

Schedule an Exam

Select a Test Site and Time

Sponsor & Exam [change](#)

Linux Foundation - Certified OpenStack Administrator
Exam Code: COA-SUSE
[Handbook Link](#)
Exam Duration: 150 mins
Language: English

Search Date & Time [change](#)

Time: (UTC+08:00) Beijing, Chongqing, Hong Kong, U.S.A.
Date: 12/28/2017
Time: 9:00 pm

Date: December 2017 January 2018

Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su
28	29	30	31	1	2	3	4	5	6

Time: 8:00 pm - 10:30 pm 8:15 pm - 10:45 pm 8:30 pm - 11:00 pm 8:45 pm - 11:15 pm

再次更精确的选择，比如是晚上8:00开始，还是8:15开始等等，选好之后跳转到：

Schedule an Exam

You are signed in as 498741861@qq.com sign off

Sponsor & Exam [change](#)

Linux Foundation - Certified OpenStack Administrator
Exam Code: COA-SUSE
[Handbook Link](#)
Exam Duration: 150 mins
Language: English

Selected Time Slot [change](#)

Linux Foundation Web Delivery.
Date: 12/28/2017
Time Slot: 9:00 pm to 11:30 pm

[Reservation](#)

Please confirm the Sponsor and Exam Information to the left is correct to complete the scheduling process for your exam.

Cancellation and Refund Policy
If you need to cancel or reschedule your exam, please use the cancellation options found at: https://www.examslocal.com/candidates_email_us_at_examsupport@psionline.com, or call +1-888-504-9178, +1-702-904-7342 for additional support.
To receive a full refund you may cancel or reschedule the examination 24 hours prior to the scheduled time.
If you do not cancel the exam within 24 hours of your scheduled appointment, you will be charged the full original fee and you will not be issued a refund. In addition your appointment will be marked as a "no show".
If you do not arrive on time to the appointment and you do not start your exam within 10 minutes of your scheduled start time, the system will automatically mark you as a No Show and you will not be able to receive a refund for your appointment.

[Confirm Reservation](#)

点击"Confirm Reservation",然后跳转到：

<https://www.examslocal.com/ScheduleExam/Payment/DisplayConfirmation/reservationId=95b8d61d-79ed-4579-938c-8150ab89f513>

Exam info

Linux Foundation
Certified OpenStack Administrator
COA-SUSE - English

12/28/2017
9:00 PM - 11:30 PM - China Standard Time

Confirmation Code

2. 考题讲解

1. Set configuration context \$ kubectl config use-context k8s
Monitor the logs of Pod foobar and Extract log lines corresponding to error *unable-to-access-website* Write them to /opt/KULM00201/foobar

答案

```
kubectl logs pod | grep 'unable-to-access-website' > /opt/KULM00201/foobar
```

2. Set configuration context \$ kubectl config use-context k8s
List all PVs sorted by **name**, saving the full kubectl output to /opt/KUCC0010/my_volumes . Use kubectl s own functionality for sorting the output, and do not manipulate it any further.

答案:

```
kubect get pv --all-namespaces --sort-by={.metadata.name} > /opt/KUCC0010/my_volumes
```

3. Set configuration context \$ kubectl config use-context k8s
Ensure a single instance of Pod nginx is running on each node of the kubernetes cluster where nginx also represents the image name which has to be used. Do not override any taints currently in place.
Use **Daemon sets** to complete this task and use ds.kusc00201 as Daemonset name.

答案:

```
apiVersion: extensions/v1beta1
kind: DaemonSet
metadata:
  name: busybox
spec:
  template:
    metadata:
      labels:
        app: busybox
    spec:
      containers:
        - name: nginx
          image: nginx
```

4. Set configuration context \$ kubectl config use-context k8s
Perform the following tasks
Add an init container to lumpy-koala (Which has been defined in spec file /opt/kucc00100/pod-spec-KUCC00100.yaml)
The init container should create an empty file named /workdir/calm.txt
If /workdir/calm.txt is not detected, the Pod should exit
Once the spec file has been updated with the init container definition, the Pod should be created.

答案:

```
initContainers:
- name: init-poda
  image: busybox
  command: ['sh', '-c', 'touch /workdir/calm.txt']
volumeMounts:
- name: workdir
  mountPath: "/workdir"
```

5. Set configuration context \$ `kubect1 config use-context k8s`

Create a pod named `kucc4` with a single container for each of the following images running inside (there may be between 1 and 4 images specified): `nginx + redis + memcached + consul`

答案

```
apiVersion: v1
kind: Pod
metadata:
  name: kucc4
  labels:
    role: myrole
spec:
  containers:
    - name: web1
      image: nginx
  containers:
    - name: web2
      image: redis
....
```

6. Set configuration context \$ `kubect1 config use-context k8s`

Schedule a Pod as follows:

Name: `nginx-kusc00101`

Image: `nginx`

Node selector: `disk=ssd`

答案:

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-kusc00101
  labels:
    role: myrole
spec:
  nodeSelector:
    disk: ssd
  containers:
    - name: web
      image: nginx
      ports:
        - name: web
          containerPort: 80
          protocol: TCP
```

7. Set configuration context \$ kubectl config use-context k8s
Create a deployment as follows
Name: nginx-app
Using container nginx with version 1.11.9-alpine
The deployment should contain 3 replicas
Next, deploy the app with new version 1.12.0-alpine by performing a rolling update and record that update.
Finally, rollback that update to the previous version 1.11.9-alpine

答案:

```
kubectl run nginx-app --image='nginx:1.11.9-alpine' --replicas=3  
  
kubectl set image deployment/nginx-app nginx-app='nginx:1.12.0-alpine' --record=true  
  
kubectl rollout undo deployment/nginx-app
```

8. Set configuration context \$ kubectl config use-context k8s
Create and configure the service front-end-service so it's accessible through NodePort / ClusterIP and routes to the existing pod named front-end

答案:

```
kubectl expose pod front-end --name=front-end-service --type="NodePort" --port=80
```

9. Set configuration context \$ kubectl config use-context k8s
Create a Pod as follows:
Name: jenkins
Using image: jenkins
In a new Kubernetes namespace named *website-frontend*

答案

```
apiVersion: v1  
kind: Pod  
metadata:  
  name: jenkins  
  labels:  
    role: myrole1  
spec:  
  containers:  
    - name: jenkins  
      image: jenkins  
  
kubectl create ns website-frontend  
kubectl apply -f aa.yaml -n website-frontend
```

10. Set configuration context \$ kubectl config use-context k8s
Create a deployment spec file that will:
Launch 7 replicas of the redis image with the label: app_env_stage=dev
Deployment name: kual00201
Save a copy of this spec file to /opt/KUAL00201/deploy_spec.yaml (or .json)
When you are done, clean up (delete) any new k8s API objects that you produced during this task

答案

```
kubectl run kual00201 --image=redis --replicas=7 --dry-run -o yaml > /opt/KUAL00201/deploy_spec.yaml
```

11. Set configuration context \$ kubectl config use-context k8s
Create a file /opt/KUCC00302/kucc00302.txt that lists all pods that implement Service **foo** in Namespace **production**.
The format of the file should be one pod name per line.

答案

```
kubectl get svc --show-labels -n production
```

```
kubectl get pods -l name=haha -n production | grep -v NAME | awk '{print $1}' >>  
/opt/KUCC00302/kucc00302.txt
```

如果foo这个服务有多个标签的话，依次查找

12. Set configuration context \$ kubectl config use-context k8s
Create a Kubernetes Secret as follows:
Name: super-secret
Credential: alice or username: bob
Create a Pod named *pod-secrets-via-file* using the redis image which mounts a secret named super-secret at /secrets
Create a second Pod named *pod-secrets-via-env* using the redis image, which exports credential/username as TOPSECRET / CREDENTIALS

echo -n 'bob' base64	apiVersion: v1	apiVersion: v1
apiVersion: v1	kind: Pod	kind: Pod
kind: Secret	metadata:	metadata:
metadata:	labels:	name: redis
name: super-secret	run: nginx	labels:
type: Opaque	name: <i>pod-secrets-via-file</i>	name: redis
data:	spec:	spec:
username: Ym9i	volumes:	containers:
	- name: xx	- image: redis
	secret:	name: redis
	secretName: super-secret	env:
	containers:	- name: CREDENTIALS
	- image: redis	valueFrom:
	name: redis	secretKeyRef:
	volumeMounts:	name: user
	- name: xx	
	mountPath: "/secrets"	
	readOnly: true	

13. Set configuration context \$ kubectl config use-context k8s

Create a pod as follows:

Name: non-persistent-redis

Container image: redis

Named-volume with name: cache-control

Mount path: /data/redis

It should launch in the pre-prod namespace and the volume MUST NOT be persistent.

答案:

```
apiVersion: v1
kind: Pod
metadata:
  name: non-persistent-redis
  labels:
    purpose: non-persistent-redis
spec:
  volumes:
    - name: cache-control
      emptyDir: {}
  containers:
    - name: redis
      image: redis
      volumeMounts:
        - mountPath: /data/redis
          name: cache-control
```

14. Set configuration context \$ kubectl config use-context k8s

Scale the deployment **webserver** to **6** pods

答案

```
kubectl scale deployment/webserver --replicas=6
```

15. Set configuration context \$ kubectl config use-context k8s
Check to see how many nodes are ready (not including nodes tainted NoSchedule) and write the number to /opt/nodenum

答案

```
kubectl get node | grep -i ready | wc -l
```

16. Set configuration context \$ kubectl config use-context k8s
From the Pod label **name=cpu-utilizer**, find pods running high CPU workloads and write the name of the Pod consuming most CPU to the file /opt/cpu.txt (which already exists)

答案:

```
kubectl top pods -l name=cpu-utilizer
```

```
echo ' kusc00201-5tzfk ' >> /opt/cpu.txt
```

如果要找出消耗CPU最高的node

```
kubectl top nodes
```

17. Set configuration context \$ kubectl config use-context k8s
Create a deployment as follows
Name: nginx-dns
Exposed via a service: nginx-dns
Ensure that the service & pod are accessible via their respective DNS records
The container(s) within any Pod(s) running as a part of this deployment should use the **nginx** image
Next, use the utility nslookup to look up the DNS records of the service & pod and write the output to /opt/service.dns and /opt/pod.dns respectively.
Ensure you use the busybox:1.28 image (or earlier) for any testing, as the latest release has an upstream bug which impacts the use of nslookup.

答案

```
kubectl run nginx-dns --image=nginx
kubectl expose deployment nginx-dns --port=80
kubectl get pods -o wide 获取pod的IP
kubectl run busybox -it --rm --image=busybox:1.28 sh
nslookup nginx-dns
nslookup 100.92.90.6.default.pod.cluster.local
```

18.No configuration context change required for this item
Create a snapshot of the etcd instance running at <https://127.0.0.1:2379> saving the snapshot to the file path /data/backup/etcd-snapshot.db
The etcd instance is running etcd version 3.2.18
The following TLS certificates/key are supplied for connecting to the server with etcdctl
CA certificate: /opt/KUCM00302/ca.crt
Client certificate: /opt/KUCM00302/etcd-client.crt
Client key: /opt/KUCM00302/etcd-client.key

答案

```
export ETCDCTL_API=3
etcdctl help 在etcdctl snapshoht save --help
etcdctl --endpoints=https://127.0.0.1:2379 \
--ca-file=/opt/KUCM00302/ca.crt \
--certfile=/opt/KUCM00302/etcd-client.crt \
--key=/opt/KUCM00302/etcd-client.key snapshot save /data/backup/etcd-snapshot.db
```

19.Set configuration context \$ kubectl config use-context *ek8s*
Set the node labelled with name=ek8s-node-1 as unavailable and reschedule all the pods running on it.

```
kubectl get node --show-labels |grep name=ek8s-node-1
#找出 node
```

```
kubectl drain ek8s-node-1
```

然后删除运行此node上的pod

20.Set configuration context \$ kubectl config use-context *wk8s*
A Kubernetes worker node, labelled with name=**wk8s-node-0** is in state NotReady . Investigate why this is the case, and perform any appropriate steps to bring the node to a Ready state, ensuring that any changes are made permanent.

Hints:

You can ssh to the failed node using \$ ssh wk8s-node-0

You can assume elevated privileges on the node with the following command \$ sudo -i

答案: 是kubelet 没有启动

```
kubectl get node
查看 一个 node 是 notReady ssh 上去
systemctl status kubelet 发现 没有启动
systemctl start kubelet;systemctl enable kubelet
```

21. Set configuration context \$ kubectl config use-context **wk8s**
Configure the kubelet systemd managed service, on the node labelled with **name=wk8s-node-1**, to launch a Pod containing a single container of image nginx named myservice automatically. Any spec files required should be placed in the /etc/kubernetes/manifests directory on the node.
Hints:
You can ssh to the failed node using \$ ssh wk8s-node-1
You can assume elevated privileges on the node with the following command \$ sudo -i

答案： 在node上

systemctl status kubelet

找到

--pod-manifest-path

所对应的目录

在里面创建一个文件

apiVersion: v1

kind: Pod

metadata:

name: static-web

labels:

role: myrole

spec:

containers:

- name: web

image: nginx

ports:

- name: web

containerPort: 80

protocol: TCP

22. 题目很长忽略，建议不做

23. Set configuration context \$ kubectl config use-context *bk8s*

Given a partially-functioning Kubernetes cluster, identify symptoms of failure on the cluster. Determine the node, the failing service and take actions to bring up the failed service and restore the health of the cluster. Ensure that any changes are made permanently.

The worker node in this cluster is labelled with **name=bk8s-node-0**

Hints:

You can ssh to the relevant nodes using \$ ssh \$(NODE) where \$(NODE) is one of

bk8s-master-0 or **bk8s-node-0**

You can assume elevated privileges on any node in the cluster with the following command

\$ sudo -i

答案: 是kube-manager-controller 没有启动 启动就做完了
kubectl get cs
能看到 controller manager 没有启动登陆到master 上

systemctl start kube-manager-controller.service

24. Set configuration context \$ kubectl config use-context *hk8s*

Create a persistent volume with name app-config of capacity 1Gi and access mode ReadWriteOnce. The type of volume is hostPath and its location is /srv/app-config

答案: apiVersion: v1
kind: PersistentVolume
metadata:
 name: app-config
spec:
 capacity:
 storage: 1Gi
 accessModes:
 - ReadWriteOnce
 hostPath:
 path: /srv/app-config