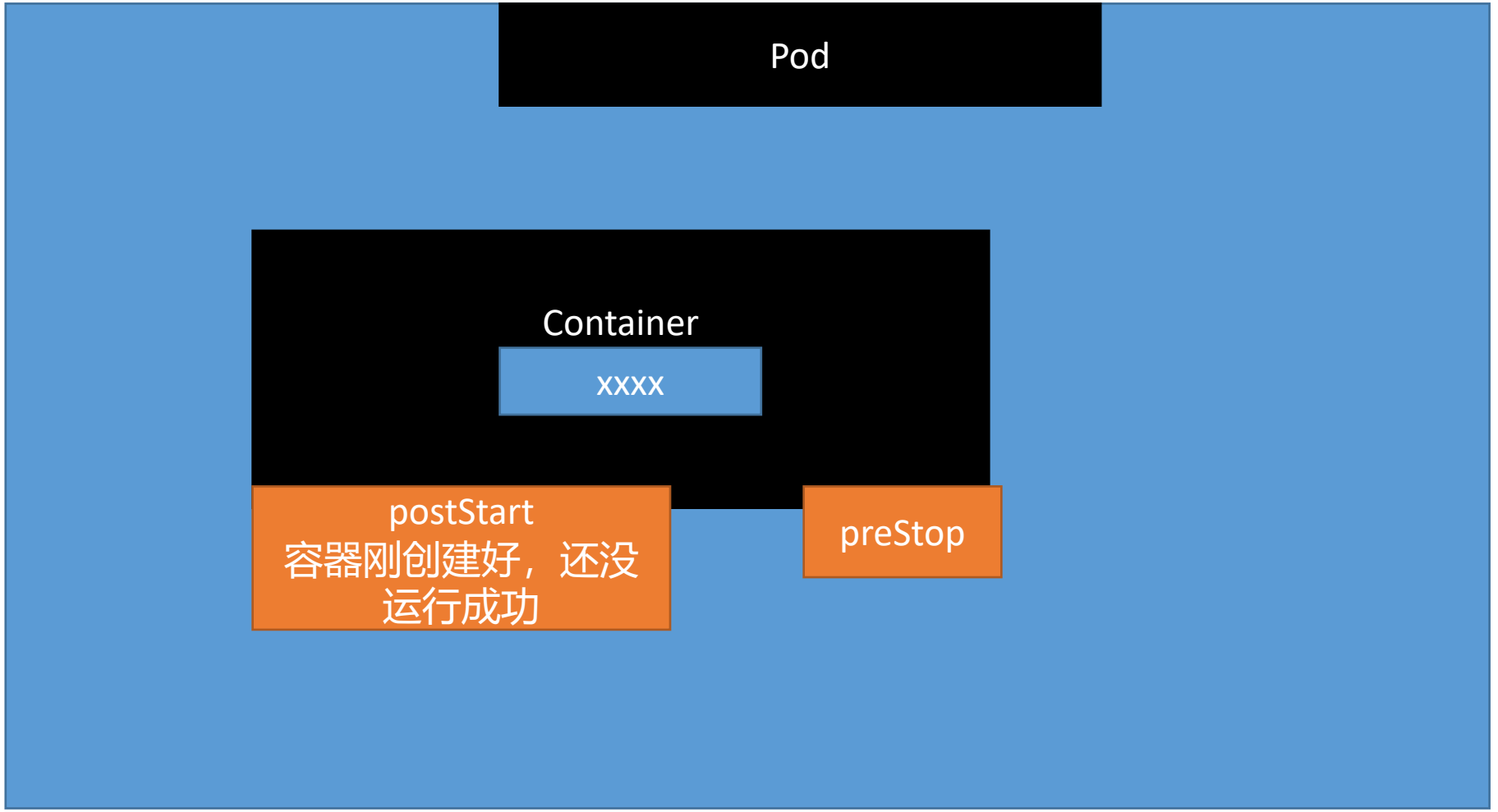
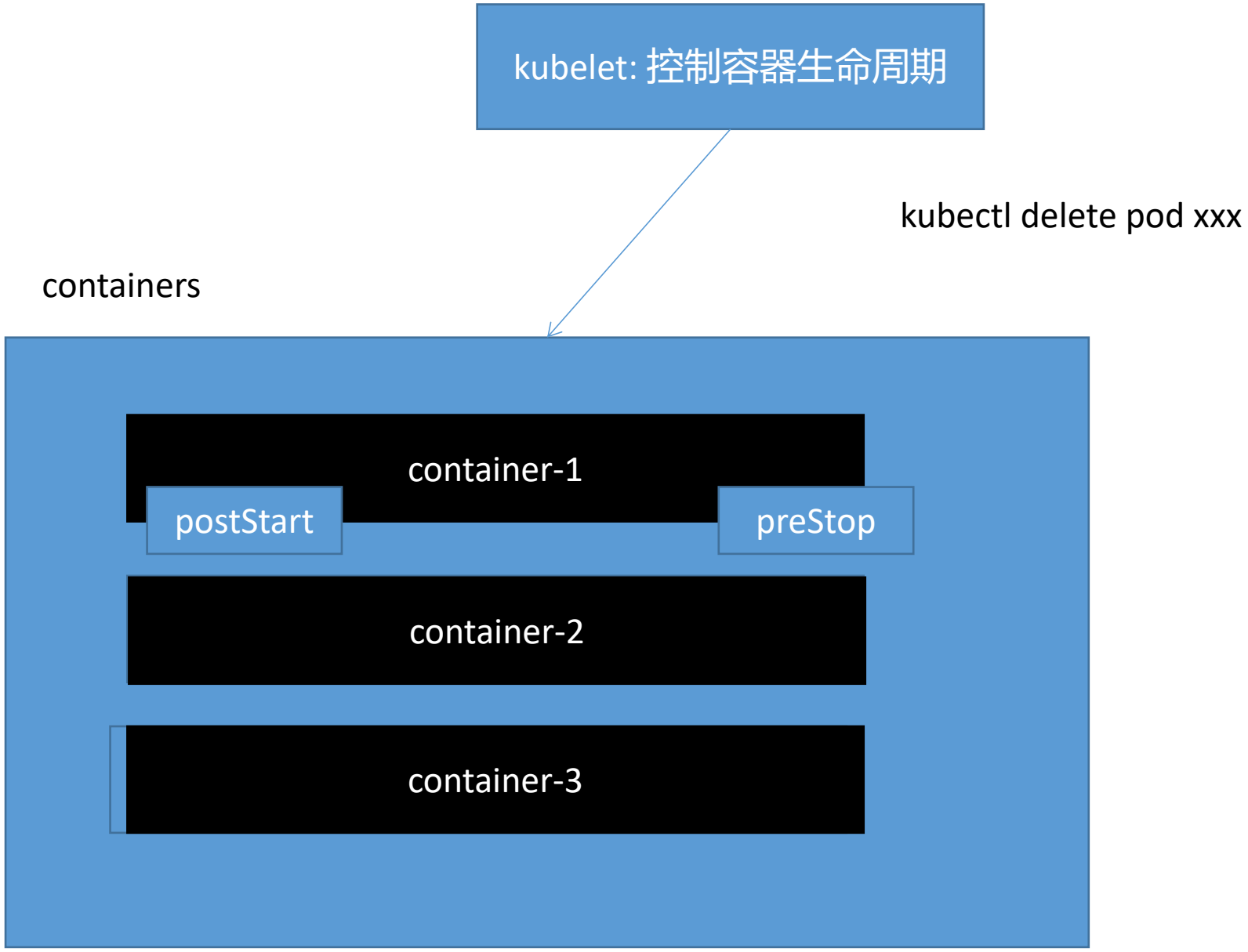
K8S图例

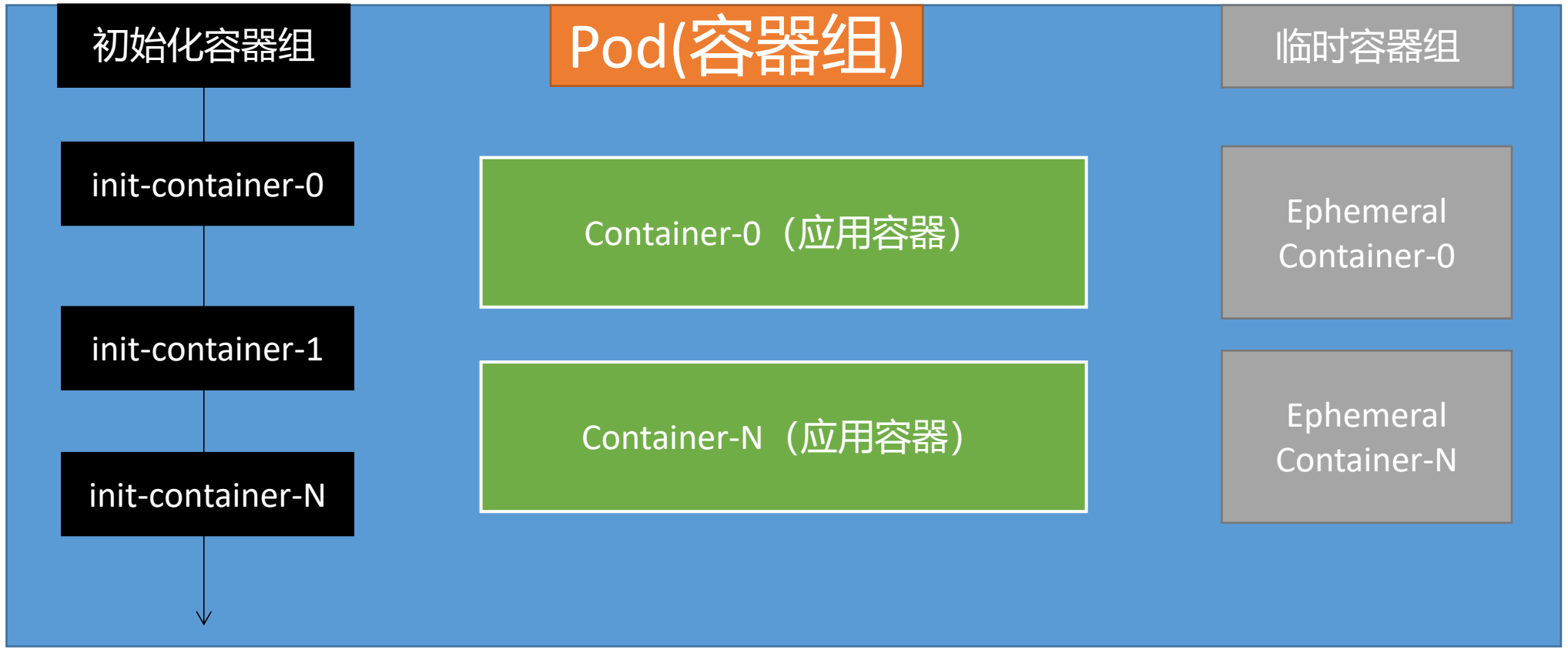
容器



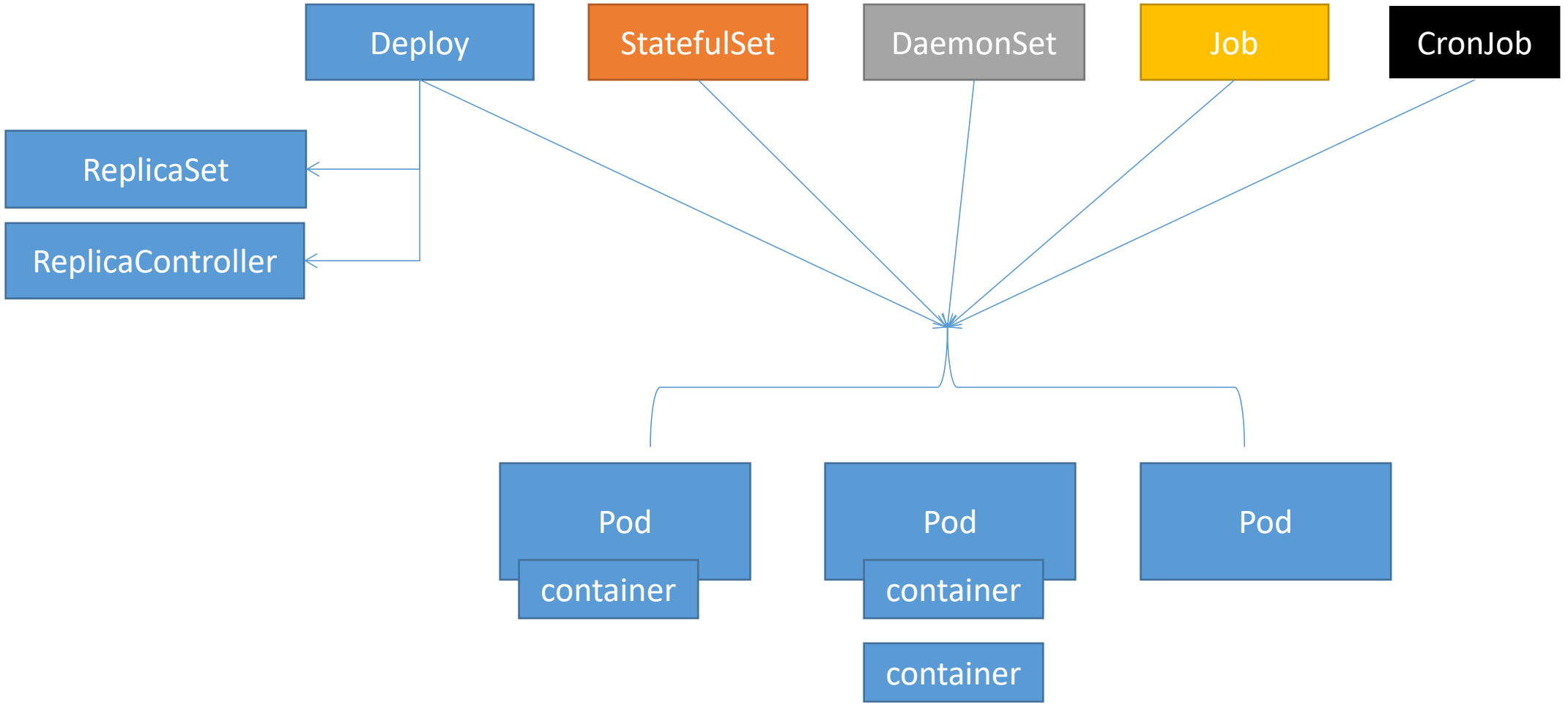
Pod


kubelet: 控制容器生命周期
kubectl delete pod xxx
containers
container-1
postStart
preStop
container-2
container-3

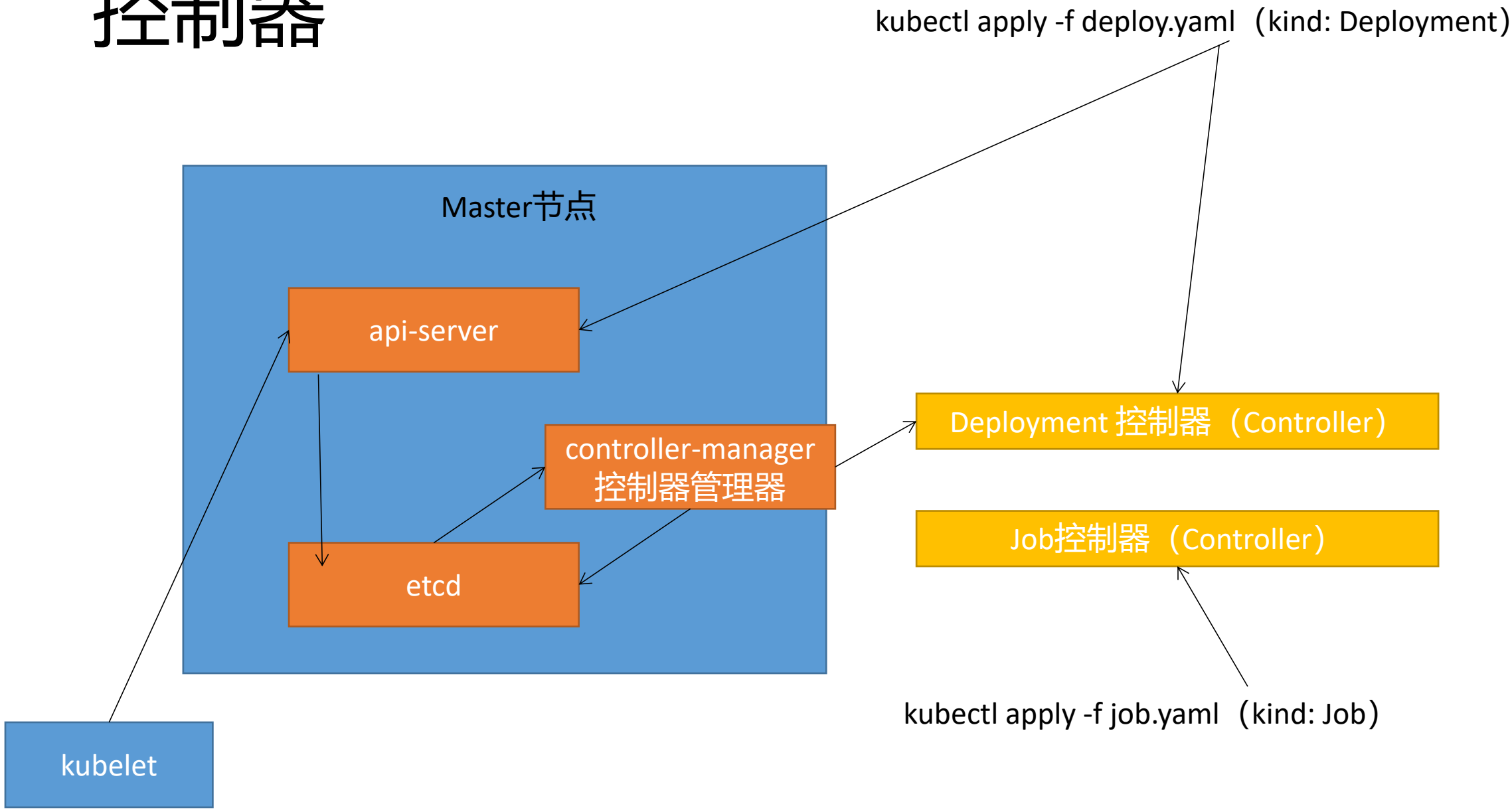
Pod


初始化容器组
init-container-0
init-container-1
init-container-N
Pod(容器组)
Container-0（应用容器）
Container-N（应用容器）
临时容器组
Ephemeral Container-0
Ephemeral Container-N

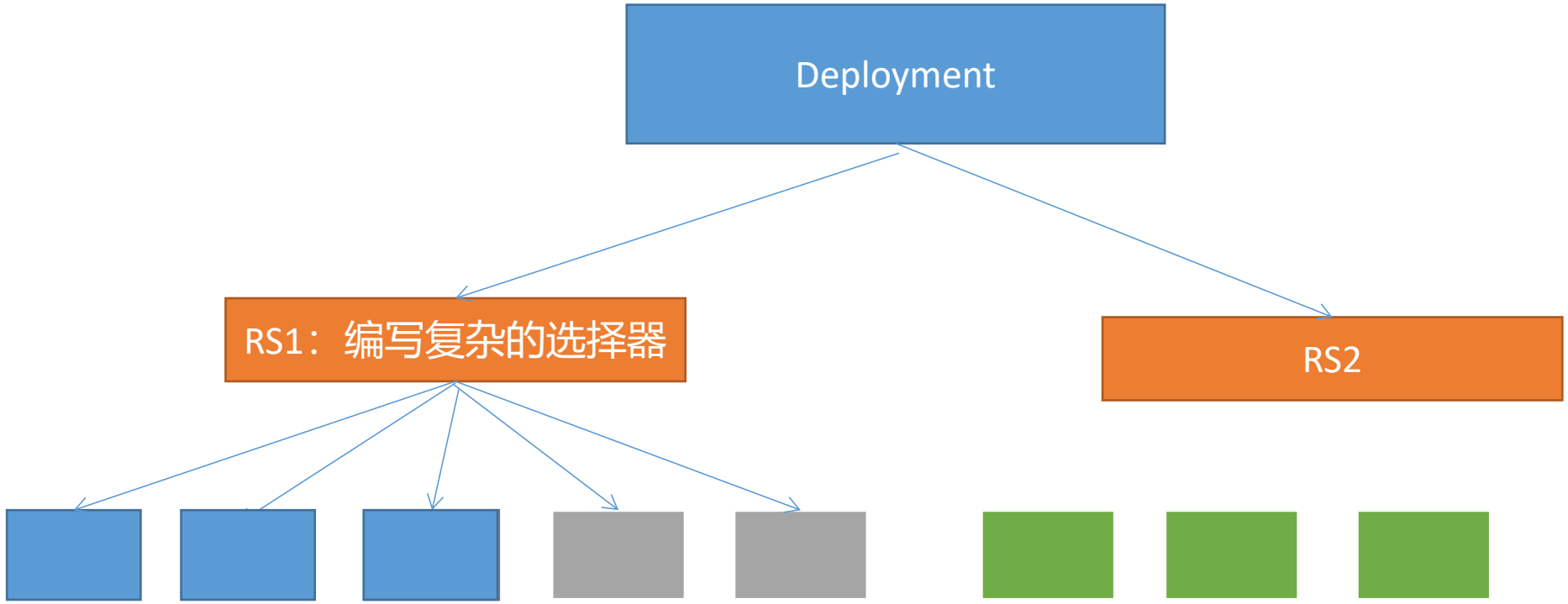
工作负载


Deploy
StatefulSet
DaemonSet
Job
CronJob
ReplicaSet
ReplicaController
Pod
container
Pod
container
container
Pod

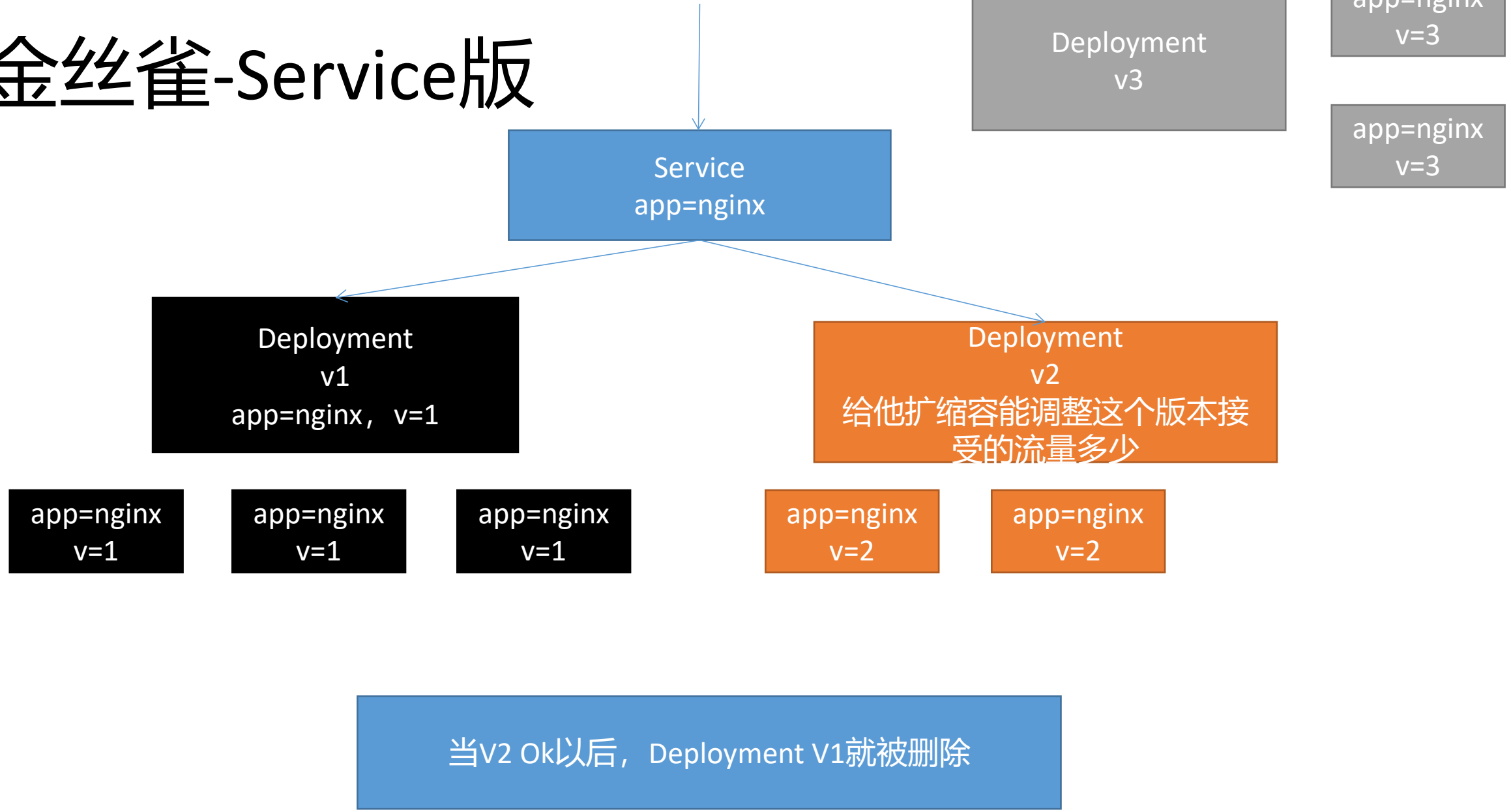
控制器


kubectl apply -f deploy.yaml （kind: Deployment）
Master节点
api-server
controller-manager
控制器管理器
etcd
Deployment 控制器（Controller）
Job控制器（Controller）
kubectl apply -f job.yaml （kind: Job）
kubelet

滚动更新

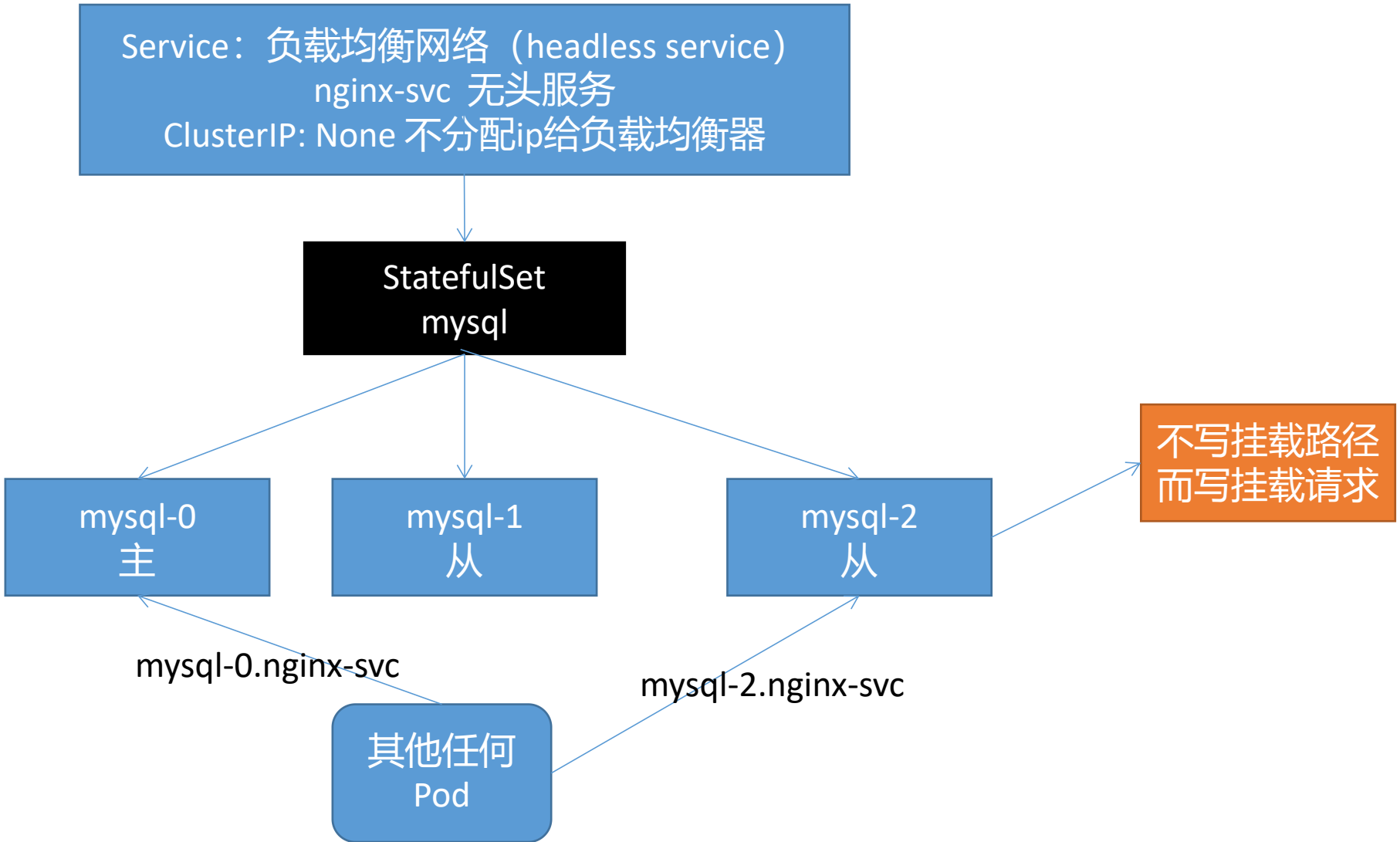


金丝雀-Service版



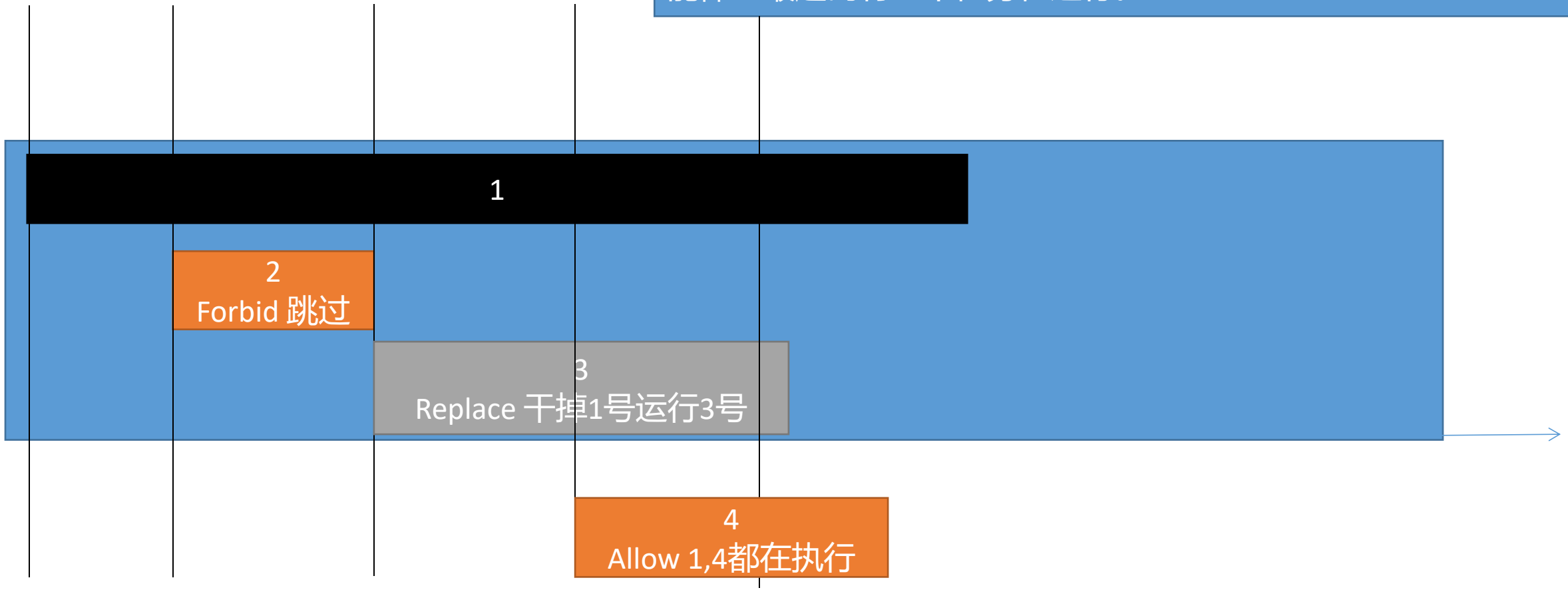
StatefulSet

全地址
pod-specific-string.serviceName.default.svc.cluster.local
pod名.service名.namespace名.后面一串默认的



CronJob

startingDeadlineSeconds：启动的超时时间 600s。设置超大
concurrencyPolicy：并发策略。设置为Allow "Allow" (允许，defa
"Forbid"(禁止): forbids；前个任务没执行完，要并发下一个的话，
个会被跳过
"Replace"(替换): 新任务，替换当前运行的任务
能保证最起码有一个任务在运行。



Service整个端口问题

curl 10.170.11.11:6379 访问不到

```
port: 80
targetPort: 8080
```

Service: 10.170.11.88
cluster-service-02

port: 80

port: 99

Service: 10.170.11.11
cluster-service-test

port: 80

port: 99

```
- name: abc
  port: 80
  targetPort: 8080
- name: redis
  port: 99
  targetPort: 6379
```

targetPort: 8080

container-03 不能占用8080

Pod：也有ip。只要有ip就认为是一个新主机

app: canary-tomcat

containerPort: 8080

tomcat-container

containerPort: 6379

redis-container

targetPort: 8080

Pod

app: canary-tomcat

targetPort: 8080

Pod

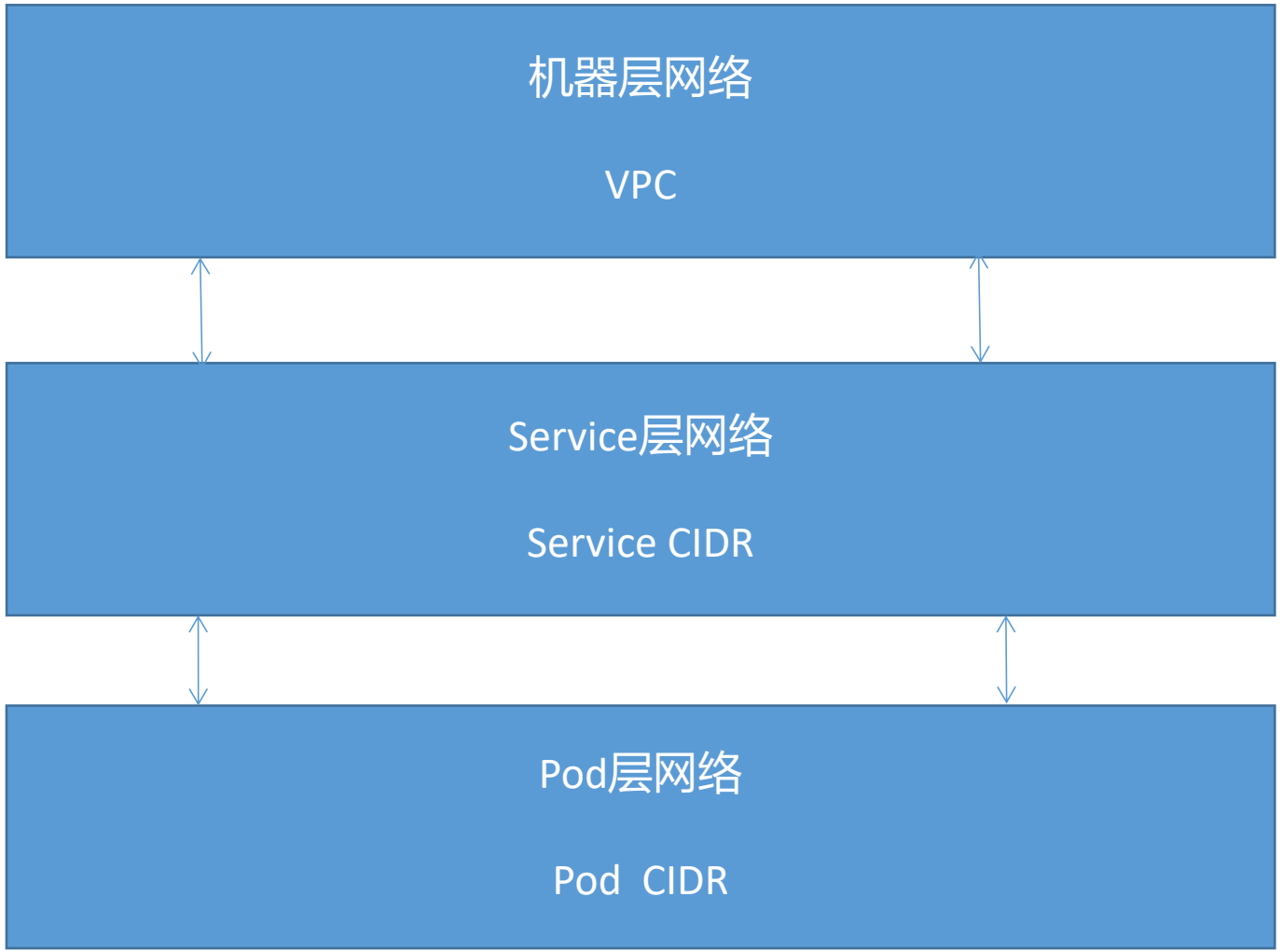
app: canary-tomcat

curl 10.170.11.11:80

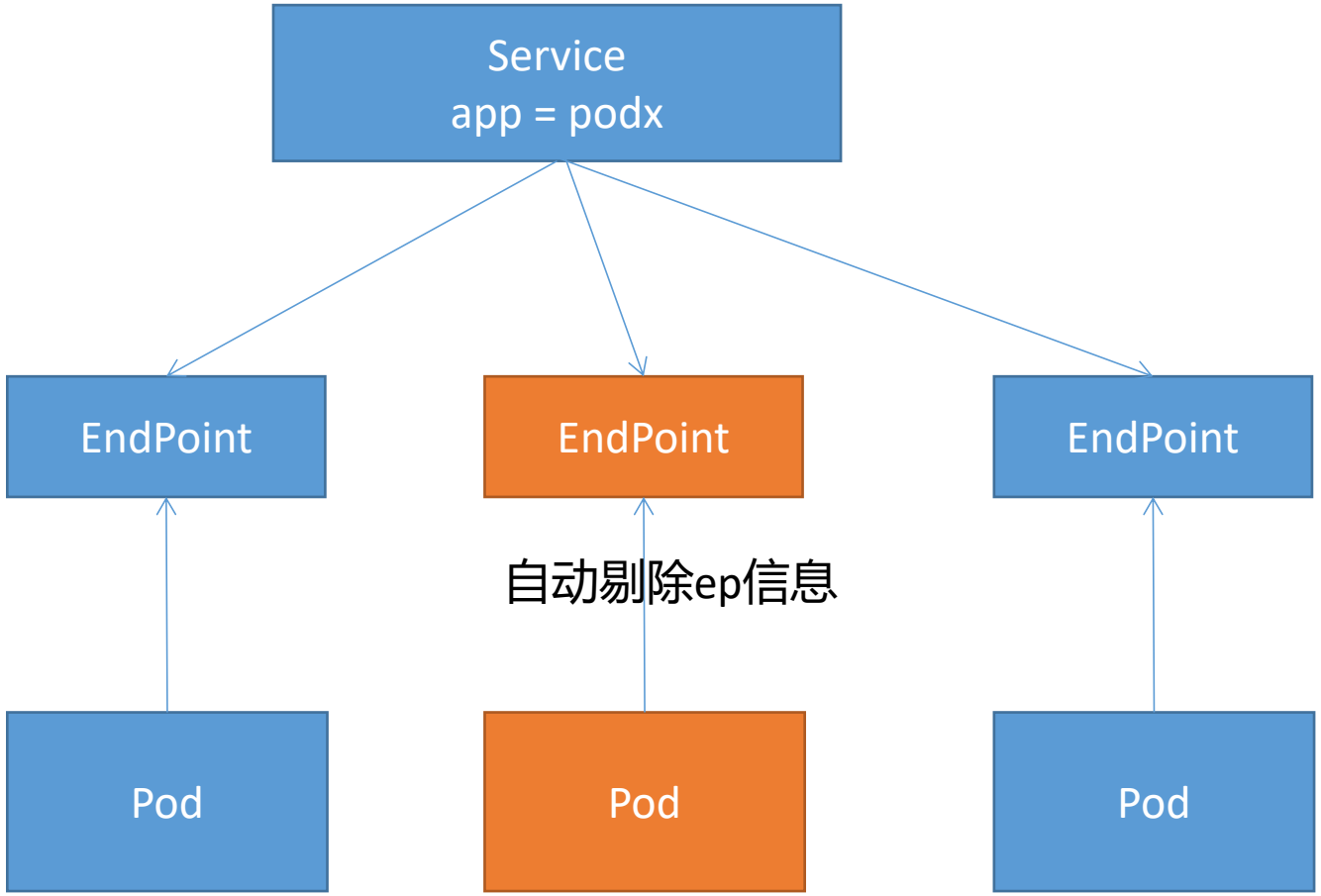
```
port: 80
targetPort: 8080
```

以上所有端口和Node的端口没有任何冲突

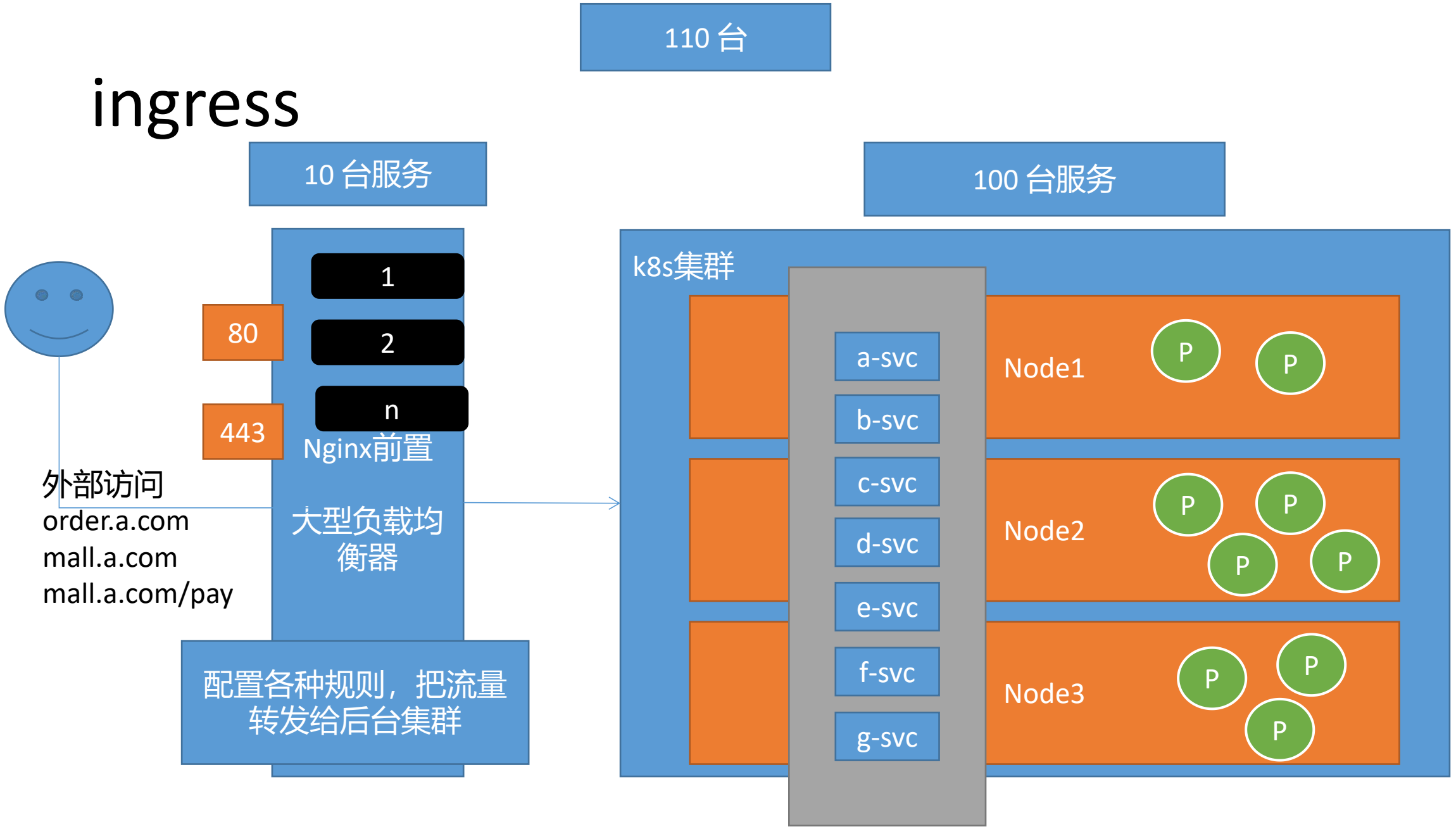
网络层次 -- 默认全是通的

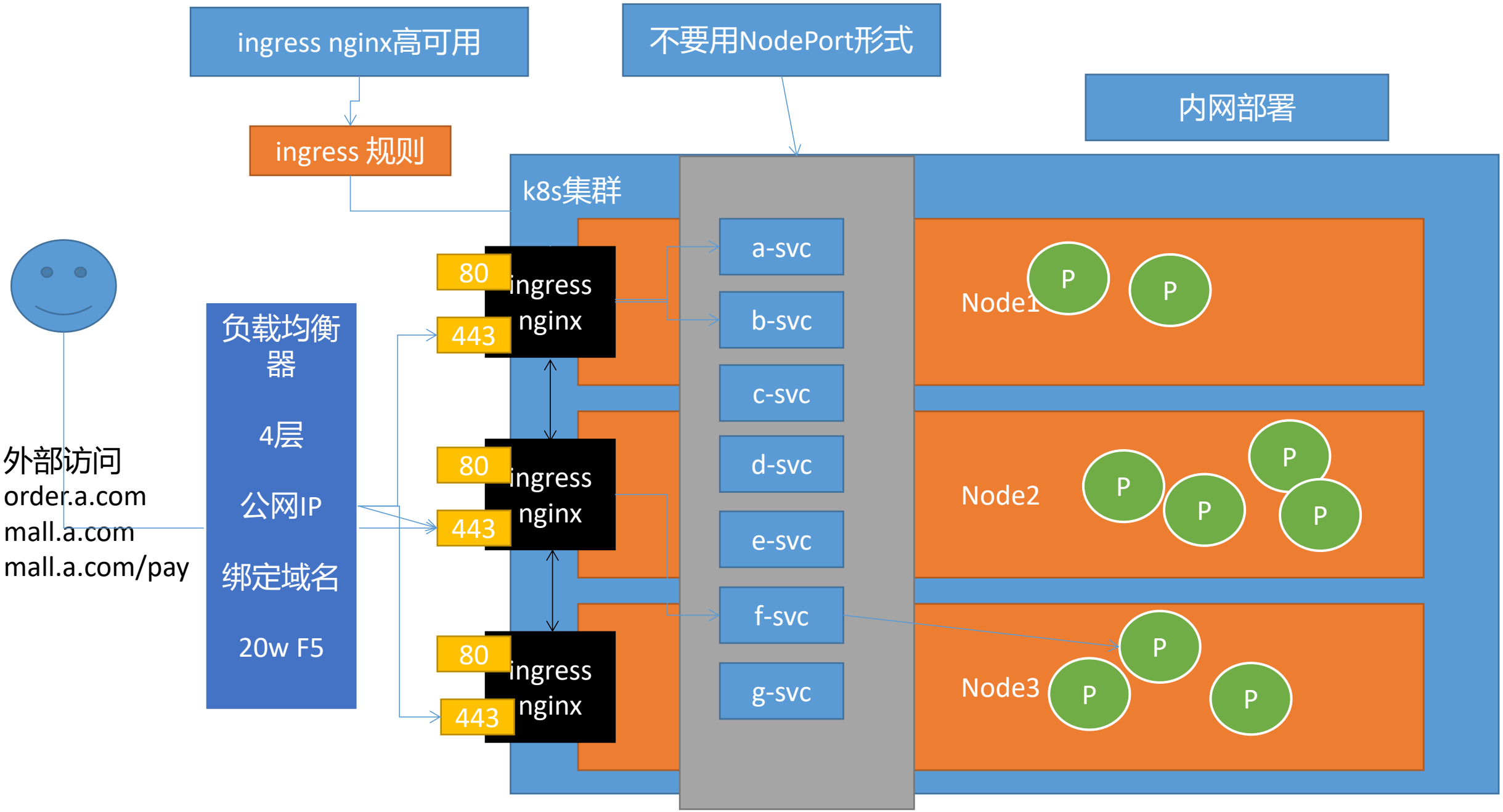


Service原理

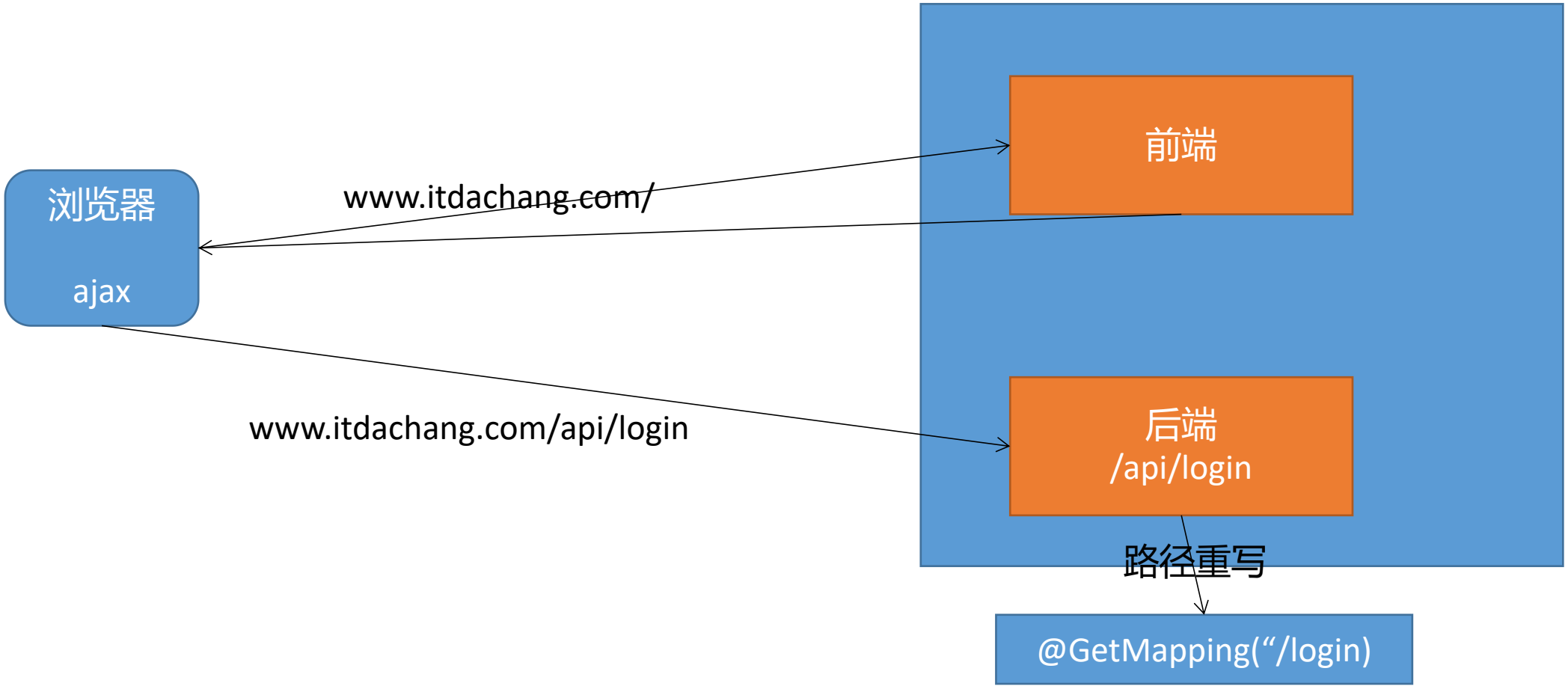

Service
app = podx
EndPoint
EndPoint
EndPoint
自动剔除ep信息
Pod
Pod
Pod

ingress

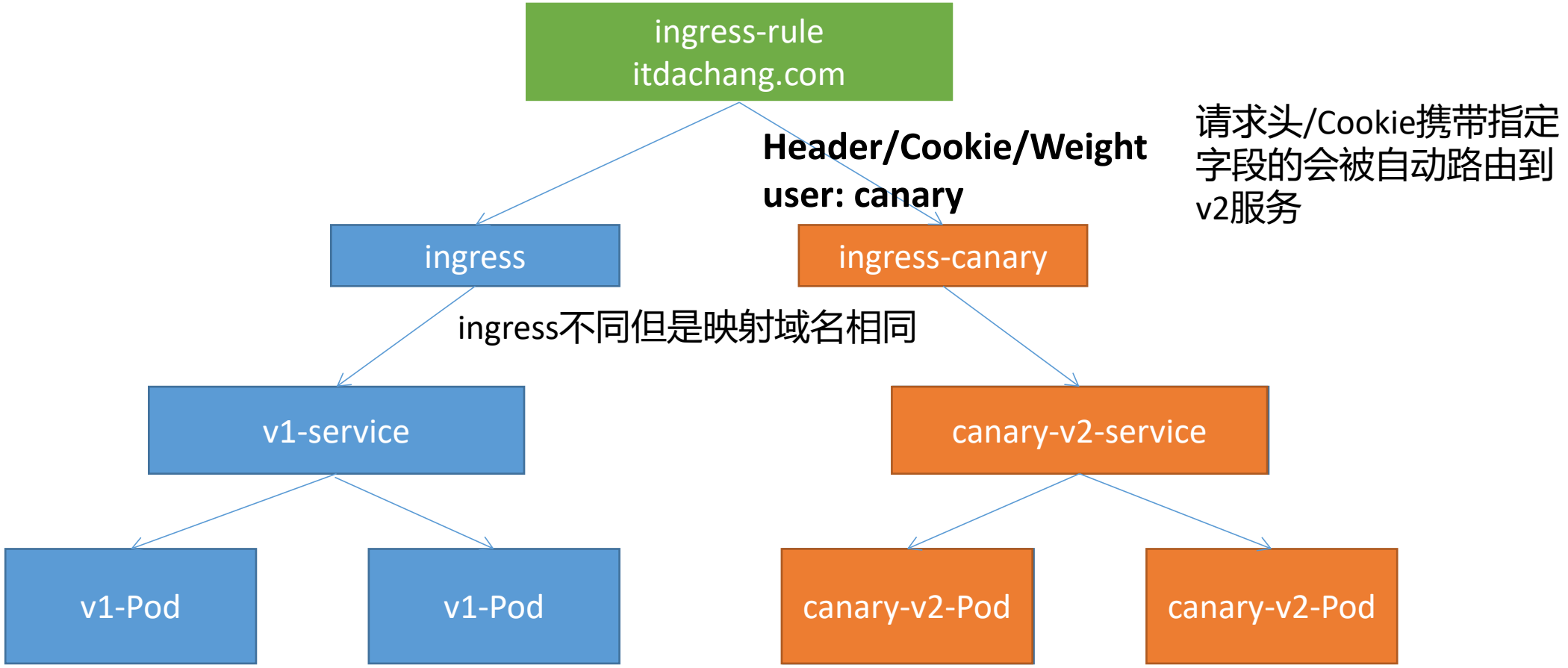

110 台
10 台服务
100 台服务
1
2
n
80
443
Nginx前置
大型负载均衡器
外部访问
order.a.com
mall.a.com
mall.a.com/pay
配置各种规则，把流量转发给后台集群
k8s集群
a-svc
b-svc
c-svc
d-svc
e-svc
f-svc
g-svc
Node1
Node2
Node3
P


ingress nginx高可用
不要用NodePort形式
内网部署
ingress 规则
k8s集群
外部访问
order.a.com
mall.a.com
mall.a.com/pay
负载均衡器
4层
公网IP
绑定域名
20w F5
80
443
ingress nginx
80
443
ingress nginx
80
443
ingress nginx
a-svc
b-svc
c-svc
d-svc
e-svc
f-svc
g-svc
Node1
P
P
Node2
P
P
P
P
Node3
P
P
P

路径重写

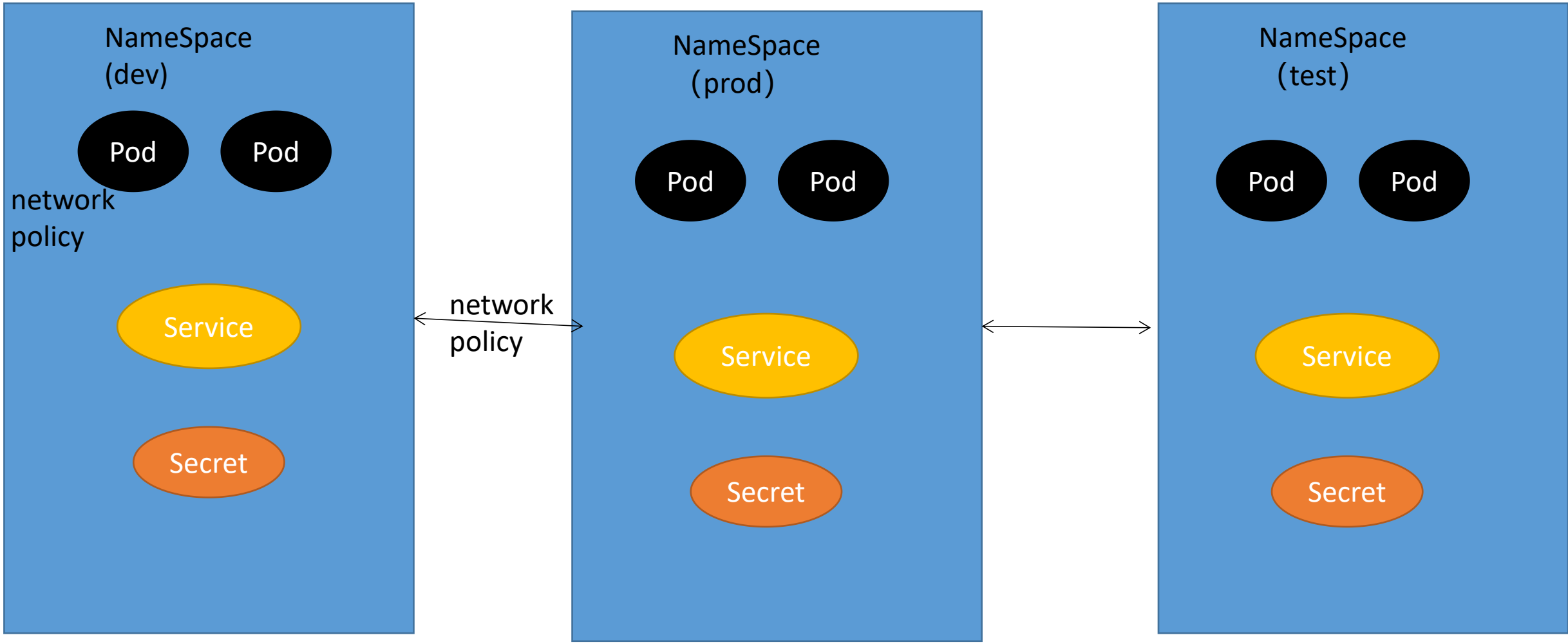

浏览器
ajax
www.itdachang.com/
www.itdachang.com/api/login
前端
后端
/api/login
路径重写
@GetMapping(“/login)

金丝雀-Ingress版



以后新版本上线，配置新的ingress-canary规则即可。
canary验证通过以后，移除旧的ingress和service。
取消当前ingress-canary的annotation，变为普通的ingress

NetworkPolicy-网络互通性



CM与SpringBoot

做到开发人员无感知生产环境的核心配置

SpringBoot
开发环境

application.yaml

application-dev.yaml

application-prod.yaml
数据库的账密信息

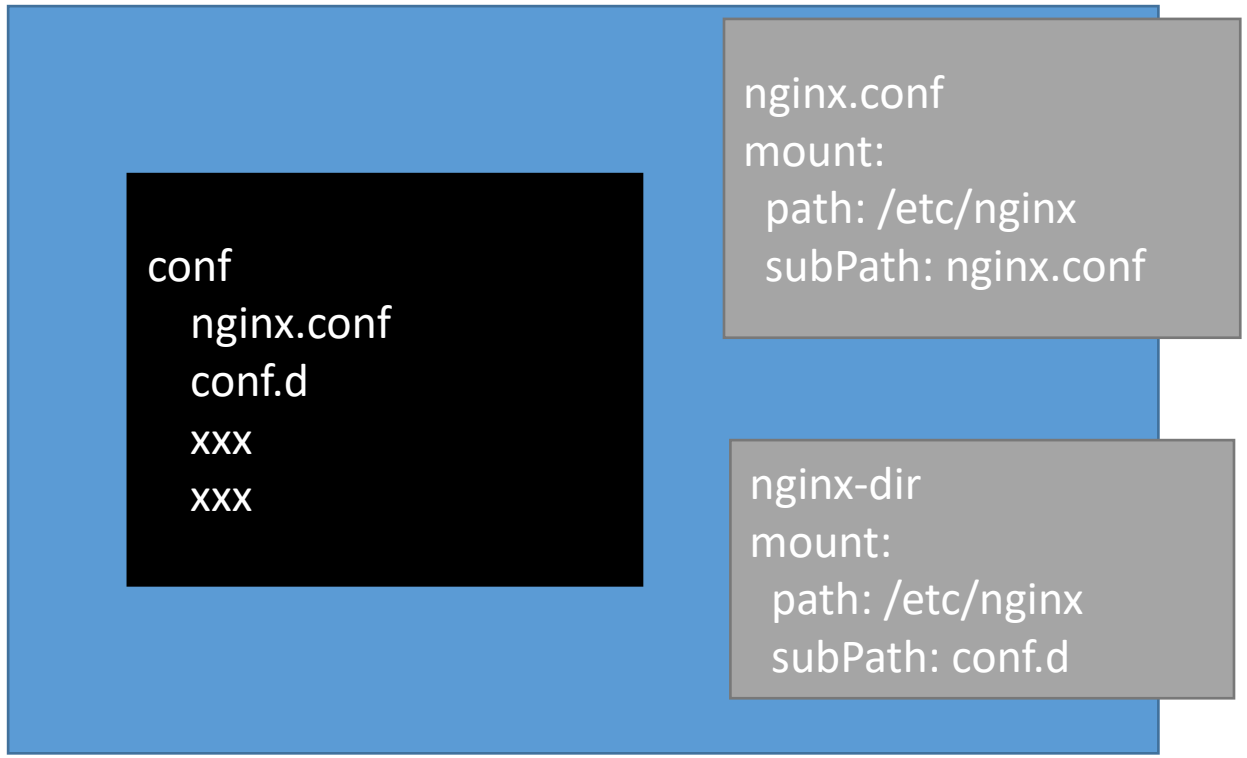
SpringBoot

SpringBoot（jar包也会放在容器的/app下）
上云
deploy.yaml
volumeMounts:
  name: prod-conf
  mountPath: /app
volumes:
  name: prod-conf
  configMap:
    name: mall-conf

Pod
/app application.yaml
/app xxx.jar
java -jar xxx.jar
SpringBoot启动默认行为让外部的yaml优先

cm: mall-conf
data:
  application.yaml: |
    生产环境的所有配置

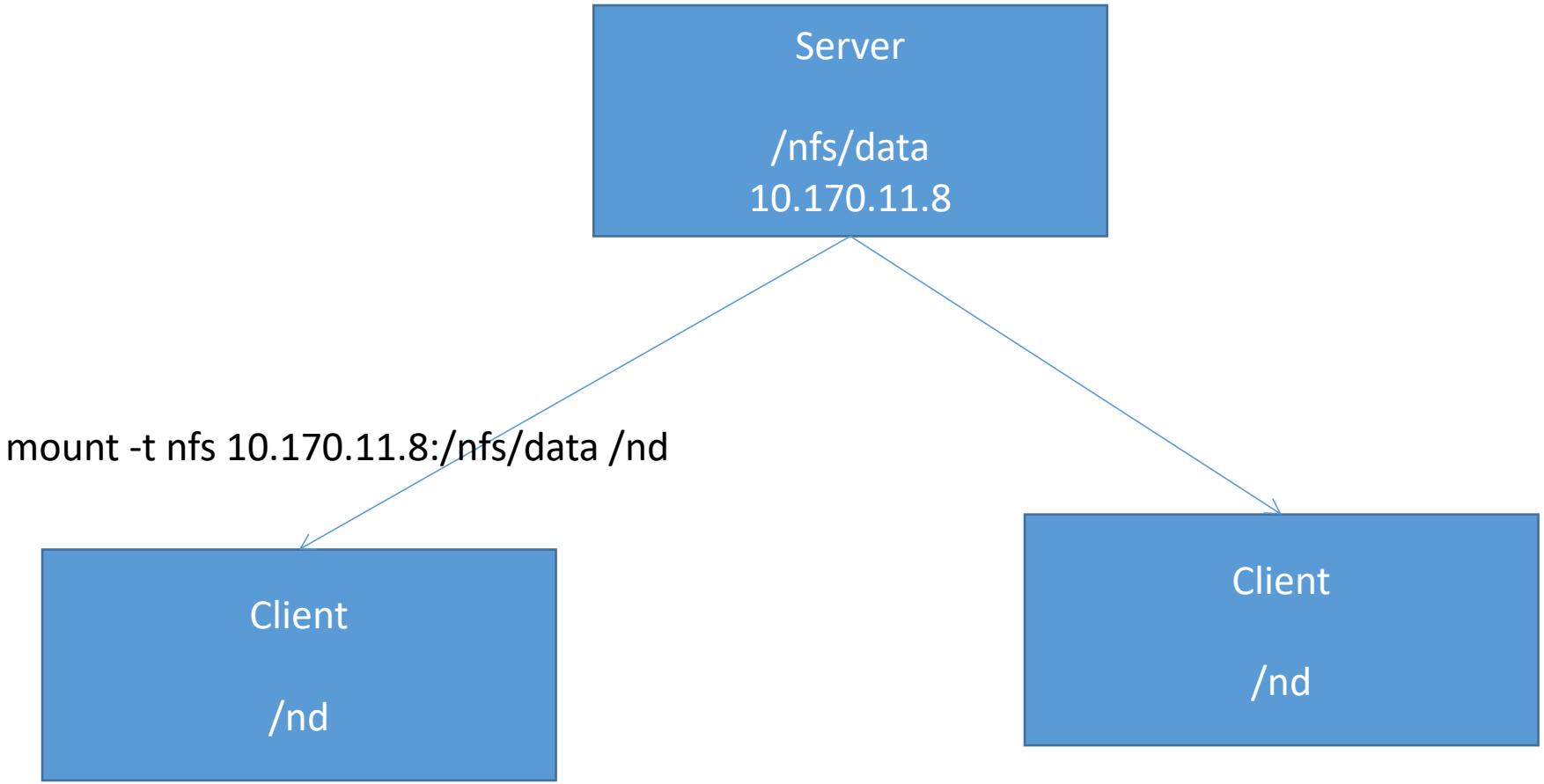
Nginx-可以使用子路径的方式



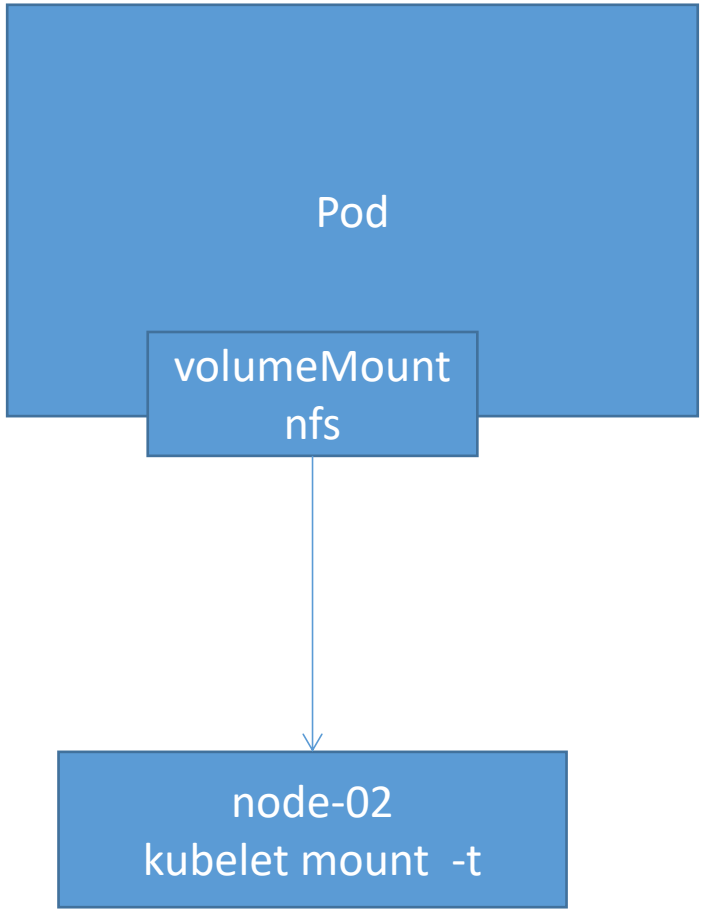

```
conf.d

 volumes:
   - name: nginx-conf
     hostPath:
       path: /app/nginx/nginx.conf
       type: File
   - name: nginx-dir
     hostPath:  ## 主机的这个文件
       path: /app/nginx/conf.d
       type: Directory
```

NFS

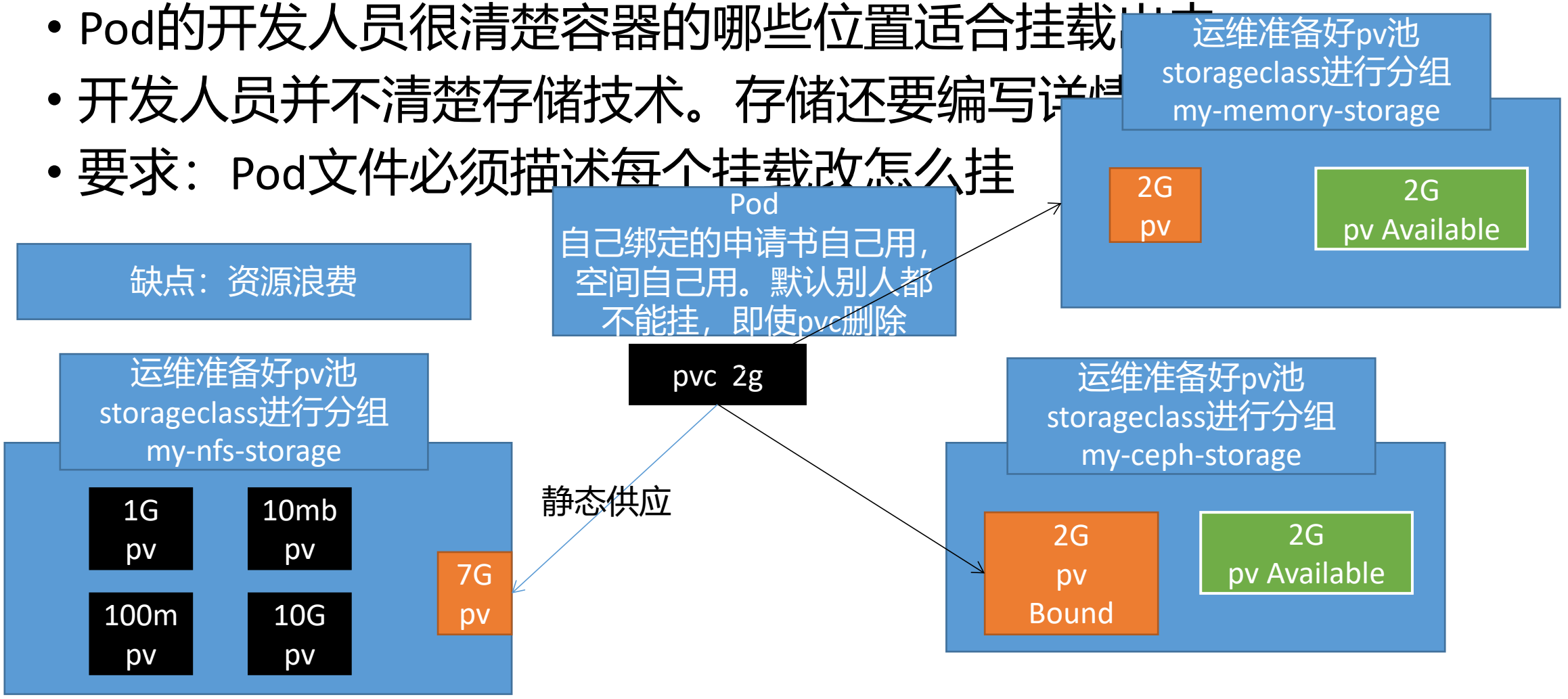

Server
/nfs/data
10.170.11.8
mount -t nfs 10.170.11.8:/nfs/data /nd
Client
/nd
Client
/nd

直接挂载

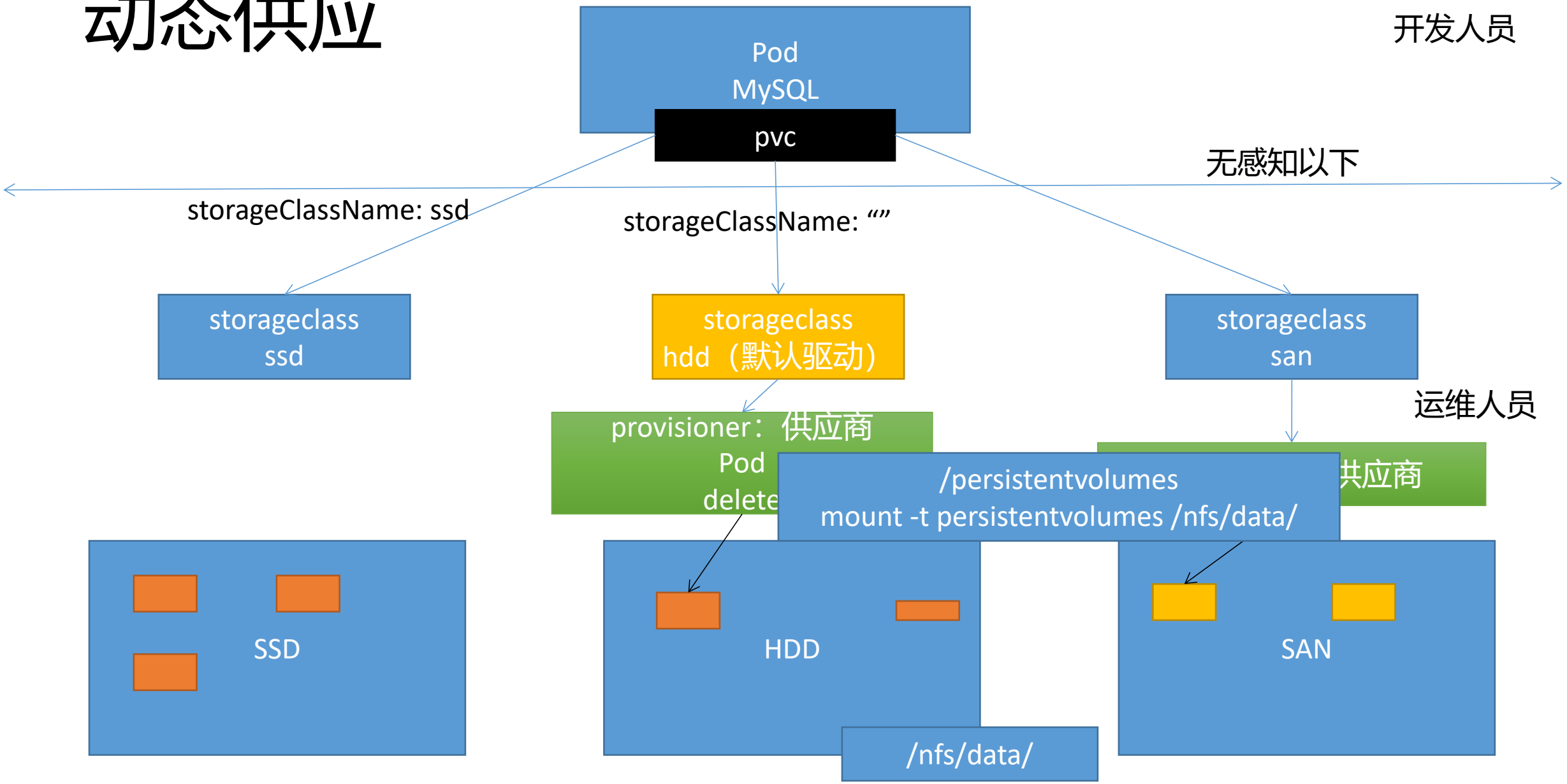


痛点

- Pod的开发人员很清楚容器的哪些位置适合挂载
- 开发人员并不清楚存储技术。存储还要编写详
- 要求：Pod文件必须描述每个挂载改怎么挂



动态供应


开发人员
Pod
MySQL
pvc
无感知以下
storageClassName: ssd
storageClassName: “”
storageclass
ssd
storageclass
hdd（默认驱动）
storageclass
san
运维人员
provisioner：供应商
Pod
delete
/persistentvolumes
mount -t persistentvolumes /nfs/data/
SSD
HDD
SAN
/nfs/data/

动态供应