

第

9

节

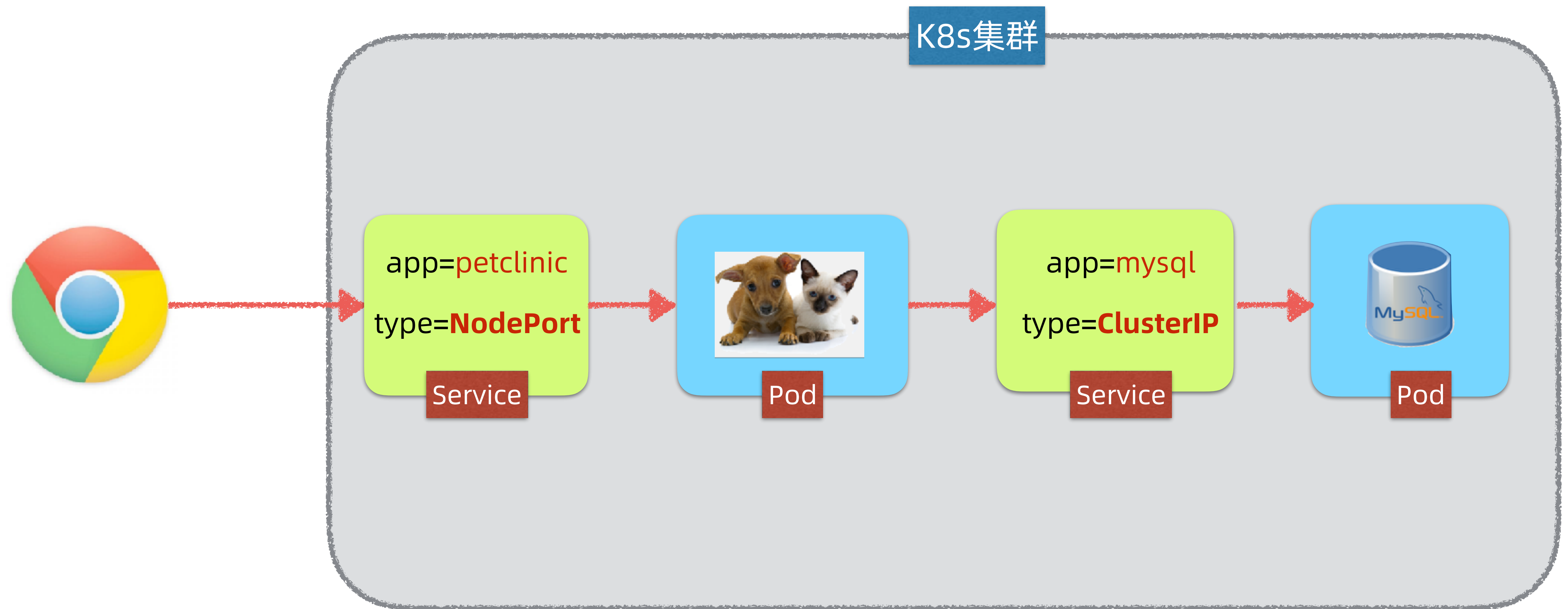
K8s名字空间Namespace和Kube-Dns

本课内容

- K8s名字空间Namespace原理和演示
- Kube-Dns域名服务原理和演示



部署架构回顾



域名 -> IP?

```
spec:
  containers:
  - name: petclinic
    image: spring2go/spring-petclinic:1.0.1.RELEASE
    env:
      - name: SPRING_PROFILES_ACTIVE
        value: mysql
      - name: DATASOURCE_URL
        value: jdbc:mysql://mysql/petclinic
      - name: DATASOURCE_USERNAME
        value: root
      - name: DATASOURCE_PASSWORD
        value: petclinic
      - name: DATASOURCE_INIT_MODE
        value: always
```

```
1. william@jskill: ~/csdn/k8s-msa-in-action/ch05/08 (zsh)
→ 08 git:(master) kubectl get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/mysql	1/1	Running	0	33s
pod/petclinic-5864c7d4d8-dt2ll	1/1	Running	0	11s

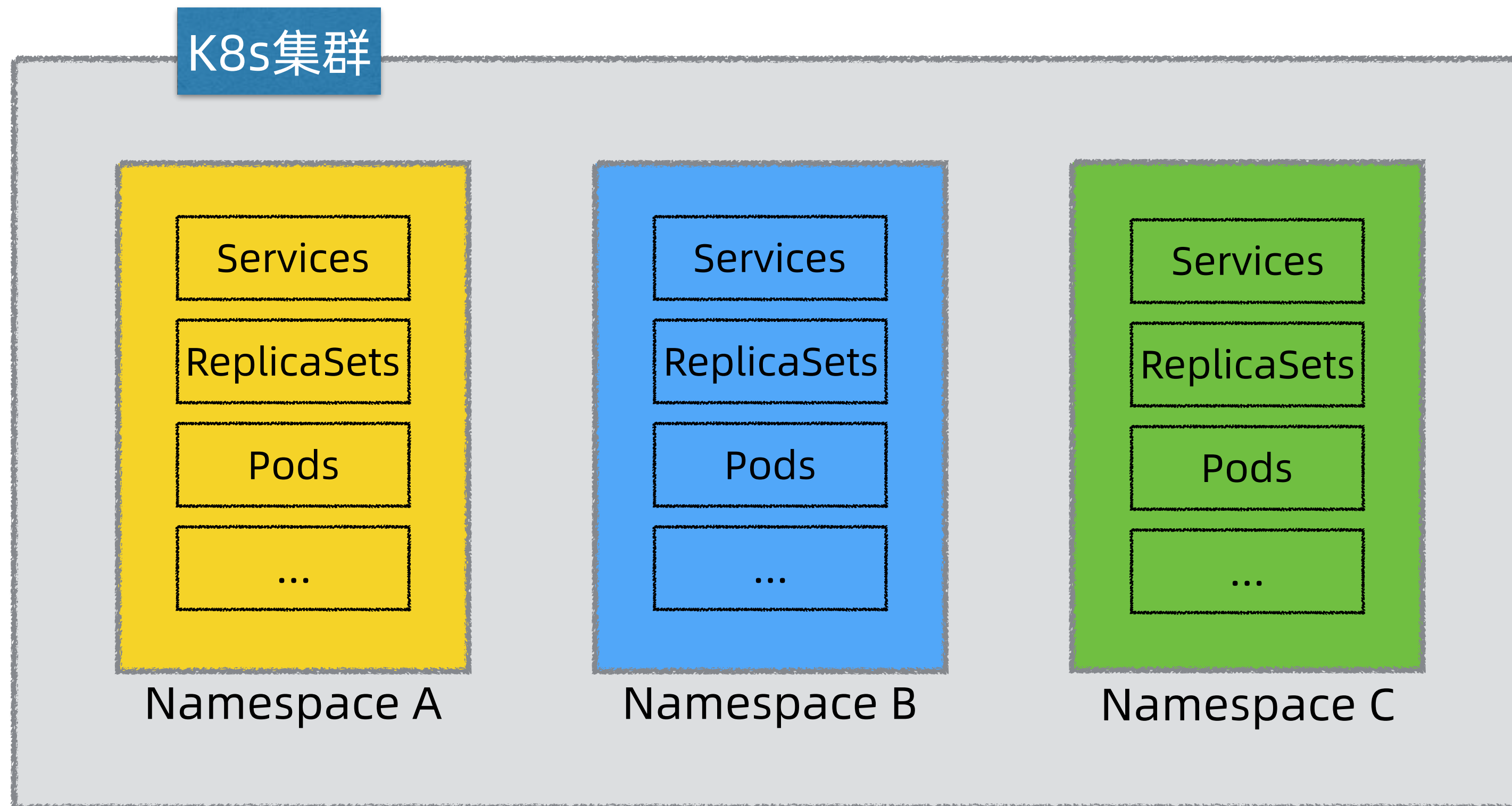
NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	47h
service/mysql	ClusterIP	10.96.235.168	<none>	3306/TCP	23s
service/petclinic	NodePort	10.96.139.58	<none>	8080:31080/TCP	5s

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/petclinic	1/1	1	1	11s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/petclinic-5864c7d4d8	1	1	1	11s

```
→ 08 git:(master)
```

K8s名字空间抽象Namespace



```
1. william@jskill: ~ (zsh)
→ ~ kubectl get ns
NAME                STATUS    AGE
default             Active    94d
docker              Active    94d
kube-node-lease     Active    94d
kube-public         Active    94d
kube-system         Active    94d
```


查看kube-system名字空间

```
1. william@jskill: ~ (zsh)
→ ~ kubectl get all -n kube-system
```

NAME	READY	STATUS	RESTARTS	AGE
pod/coredns-584795fc57-hh1r6	1/1	Running	338	94d
pod/coredns-584795fc57-nv8wq	1/1	Running	338	94d
pod/etcd-docker-desktop	1/1	Running	204	94d
pod/kube-apiserver-docker-desktop	1/1	Running	204	94d
pod/kube-controller-manager-docker-desktop	1/1	Running	204	94d
pod/kube-proxy-vv5sp	1/1	Running	204	94d
pod/kube-scheduler-docker-desktop	1/1	Running	204	94d

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kube-dns	ClusterIP	10.96.0.10	<none>	53/UDP,53/TCP,9153/TCP	94d

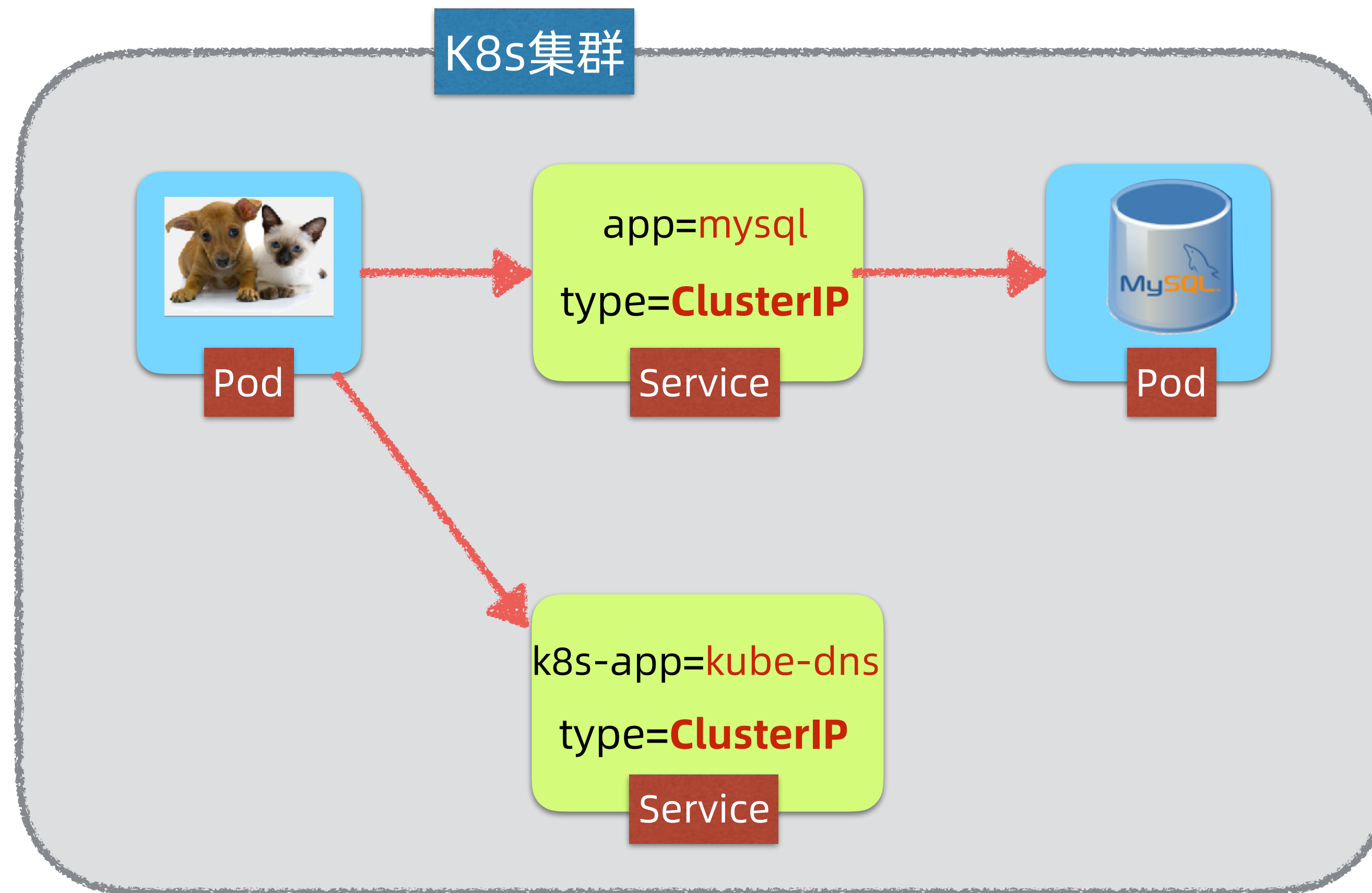
NAME	DESIRED	CURRENT	READY	UP-TO-DATE	AVAILABLE	NODE SELECTOR	AGE
daemonset.apps/kube-proxy	1	1	1	1	1	<none>	94d

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/coredns	2/2	2	2	94d

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/coredns-584795fc57	2	2	2	94d

```
→ ~
```

内部域名服务



Linux域名解析

```
1. kubectl exec -it petclinic-5864c7d4d8-dt2ll sh (kubectl)
→ 08 git:(master) kubectl exec -it petclinic-5864c7d4d8-dt2ll sh
/ # cat /etc/resolv.conf
nameserver 10.96.0.10
search default.svc.cluster.local svc.cluster.local cluster.local
options ndots:5
/ # nslookup mysql
nslookup: can't resolve '(null)': Name does not resolve

Name:      mysql
Address 1: 10.96.235.168 mysql.default.svc.cluster.local
/ #
```

```
1. william@jskill: ~/csdn/k8s-msa-in-action/ch05/08 (zsh)
→ 08 git:(master) kubectl get all
```

NAME	READY	STATUS	RESTARTS	AGE
pod/mysql	1/1	Running	0	3m43s
pod/petclinic-5864c7d4d8-dt2ll	1/1	Running	0	3m21s

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
service/kubernetes	ClusterIP	10.96.0.1	<none>	443/TCP	47h
service/mysql	ClusterIP	10.96.235.168	<none>	3306/TCP	3m33s
service/petclinic	NodePort	10.96.139.58	<none>	8080:31080/TCP	3m15s

NAME	READY	UP-TO-DATE	AVAILABLE	AGE
deployment.apps/petclinic	1/1	1	1	3m21s

NAME	DESIRED	CURRENT	READY	AGE
replicaset.apps/petclinic-5864c7d4d8	1	1	1	3m21s

环境清理

```
1. william@jskill: ~ (zsh)
~ (zsh) ❸1  ~ (zsh) ❹2
→ ~ clear
→ ~ kubectl delete deploy --all
deployment.extensions "petclinic" deleted
→ ~ kubectl delete svc -- all
Error from server (NotFound): services "all" not found
→ ~ kubectl delete svc --all
service "kubernetes" deleted
service "mysql" deleted
service "petclinic" deleted
→ ~ kubectl delete po --all
pod "mysql" deleted
→ ~ kubectl get all
NAME                                TYPE          CLUSTER-IP    EXTERNAL-IP    PORT(S)    AGE
service/kubernetes                  ClusterIP     10.96.0.1     <none>         443/TCP    20s
→ ~
```

本课小结



- Namespace是K8s提供的资源逻辑隔离机制
 - default
 - kube-system
- K8s内部服务名->ClusterIP转换
 - Linux Dns Client + Kube-Dns配合实现
 - Kube-Dns住在kube-system中