



KubeCon

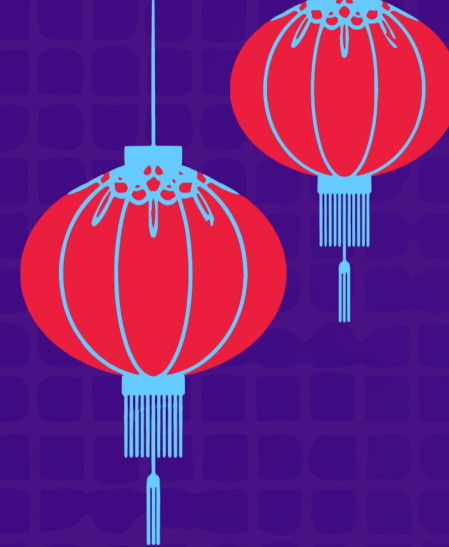
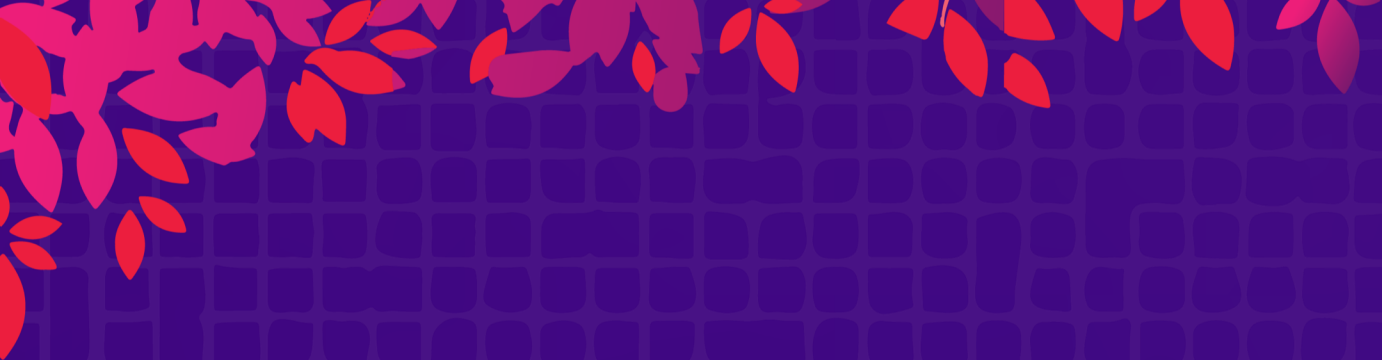


CloudNativeCon

OPEN SOURCE SUMMIT

China 2019





KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

Extending Deployment for Internet Financial Mission-Critical Scenarios

Ke Wu, Mengyi Zhou



A Brief Review



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

● ReplicationController

- replication
- rolling update

● Deployment and ReplicaSet

- replication
- rolling update
- version control

A Brief Review



KubeCon



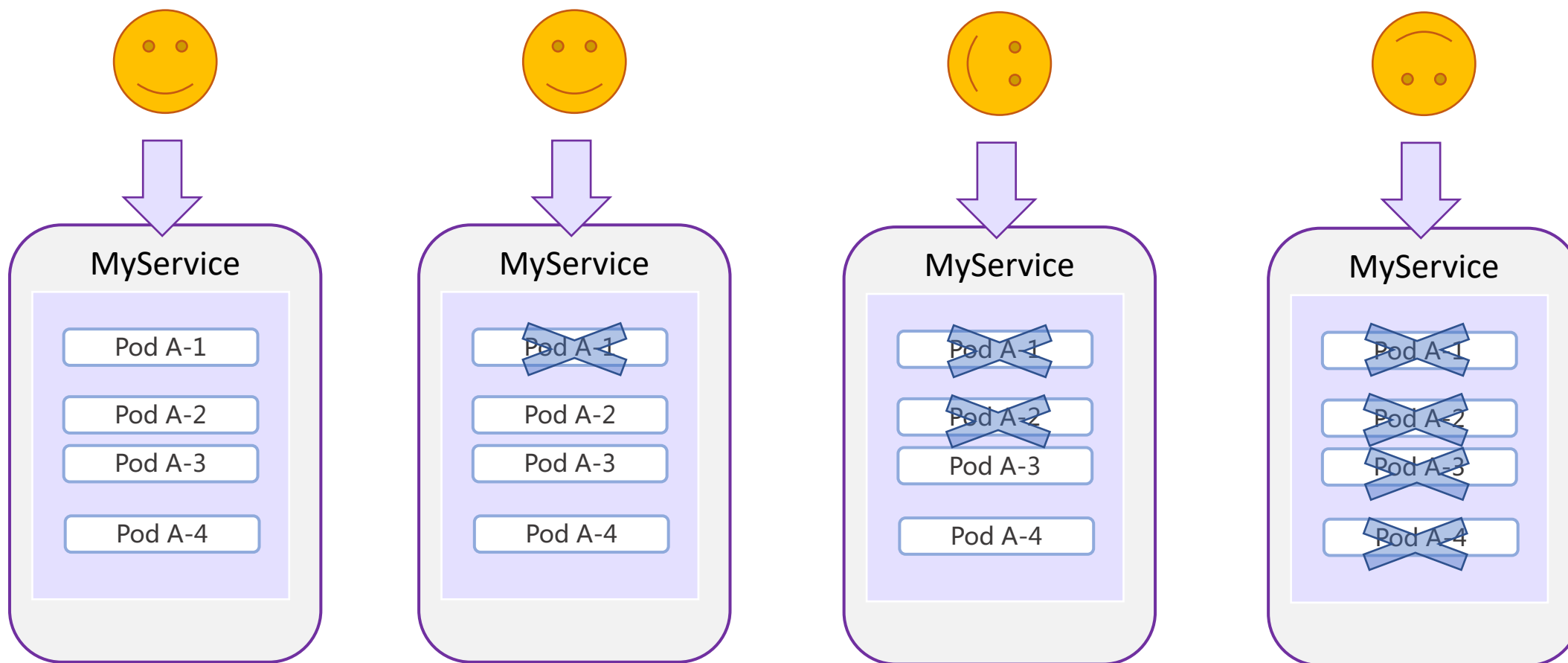
CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

- What is missed in deployment strategy?



A Brief Review



KubeCon



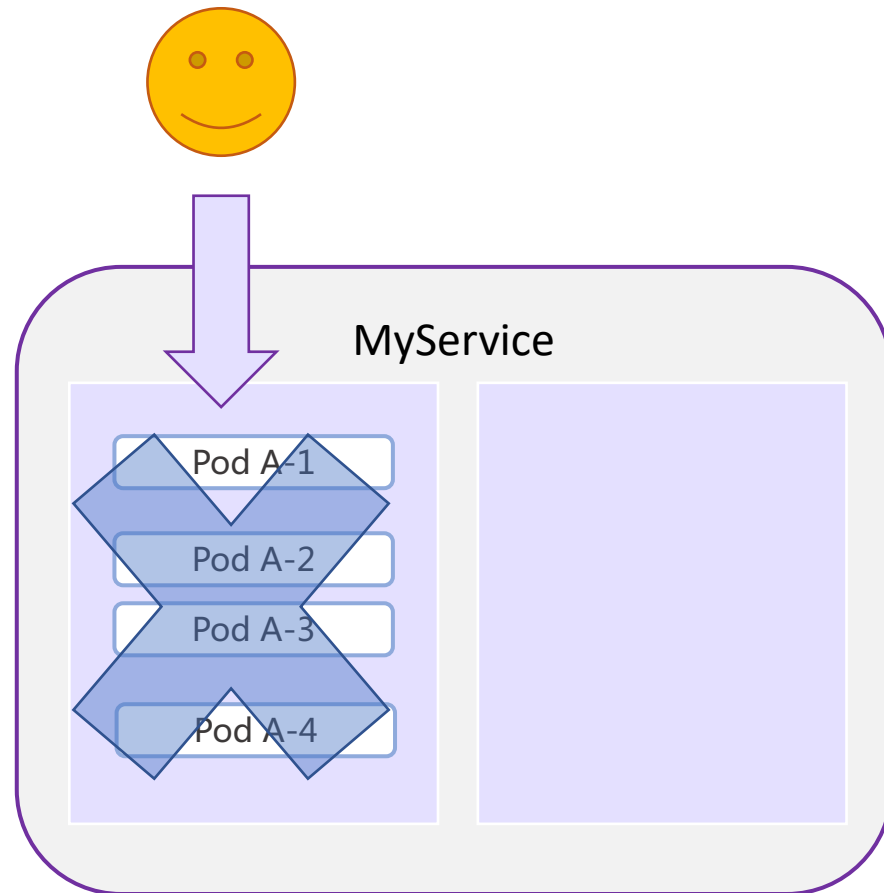
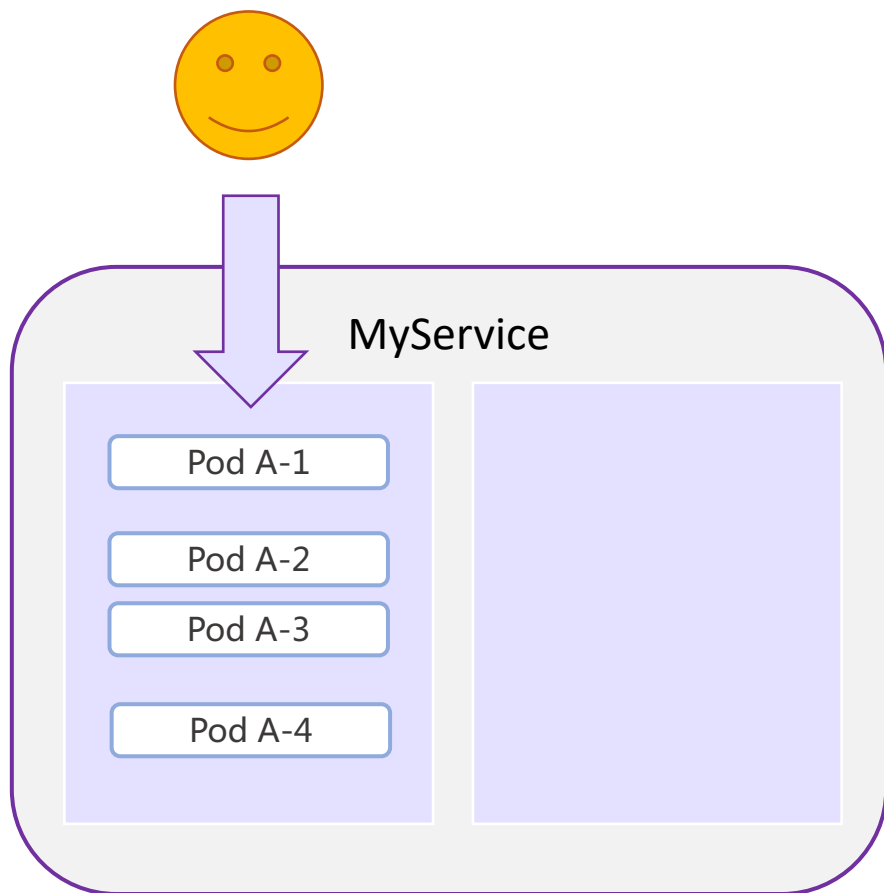
CloudNativeCon



OPEN SOURCE SUMMIT

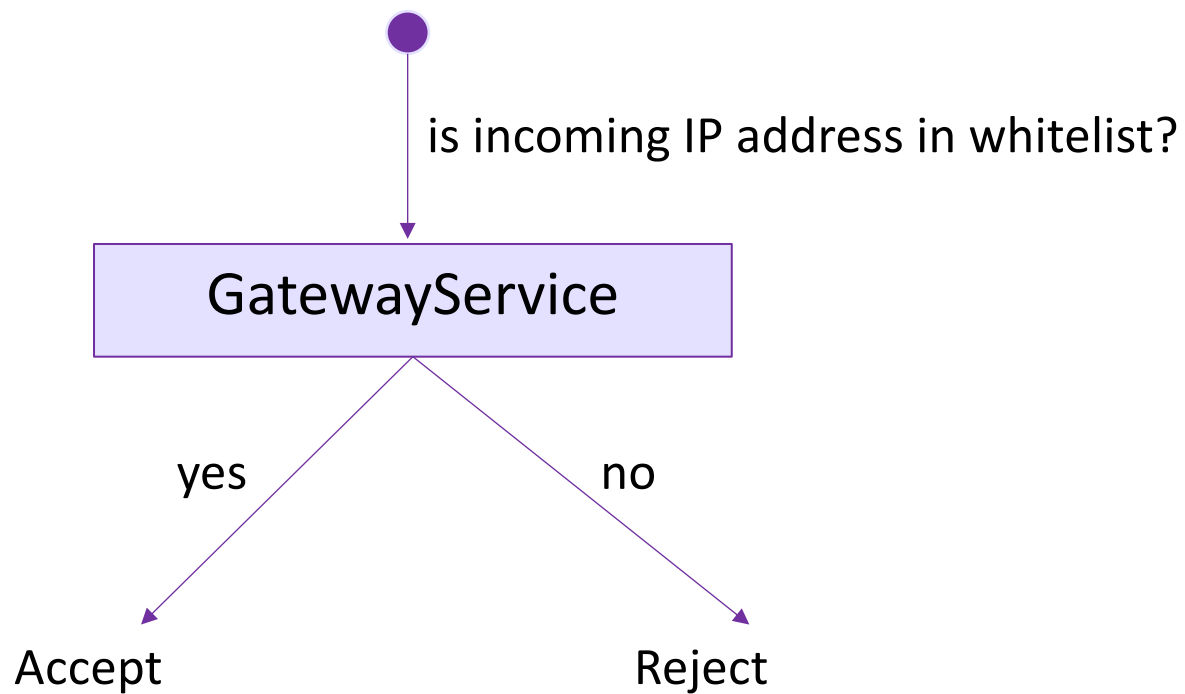
China 2019

- What is missed pod scheduling strategy?



A Brief Review

- IP Address Restriction



A Brief Review



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

● ReplicationController

- replication
- rolling update

● Deployment and ReplicaSet

- replication
- rolling update
- version control

● CafeDeployment

CafeDeployment



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

- In-Place upgrade
 - Stable Pod Ips
- High availability in financial scenarios
 - Active-Active replication
 - Graceful shutdown of Pods
- Safe and flexible deployment strategy
 - Canary deployment
 - Rolling upgrade in batches

In-Place Upgrade



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

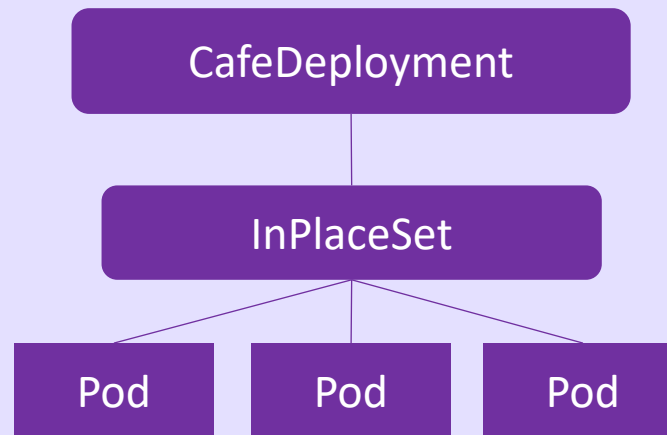
China 2019

```
kind: CafeDeployment
spec:
  podSetType: InPlaceSet
  replicas: 6
  matchLabels:
    app: demo
  ...
  template:
    ...
  topology:
    unitType: DataCenter
    values:
      - DCA
      - DCB
```

InPlaceSet provides in-place upgrade values of following fields change:

- Image
- Command
- Env
- Liveness and Readiness Probe
- ...

```
kind: InPlaceSet
spec:
  minReadySeconds: 30
  replicas: 3
  selector:
    matchLabels:
      app: demo
  deployUnit: DCA
  template:
    ...
```



Topology Sensitive



KubeCon

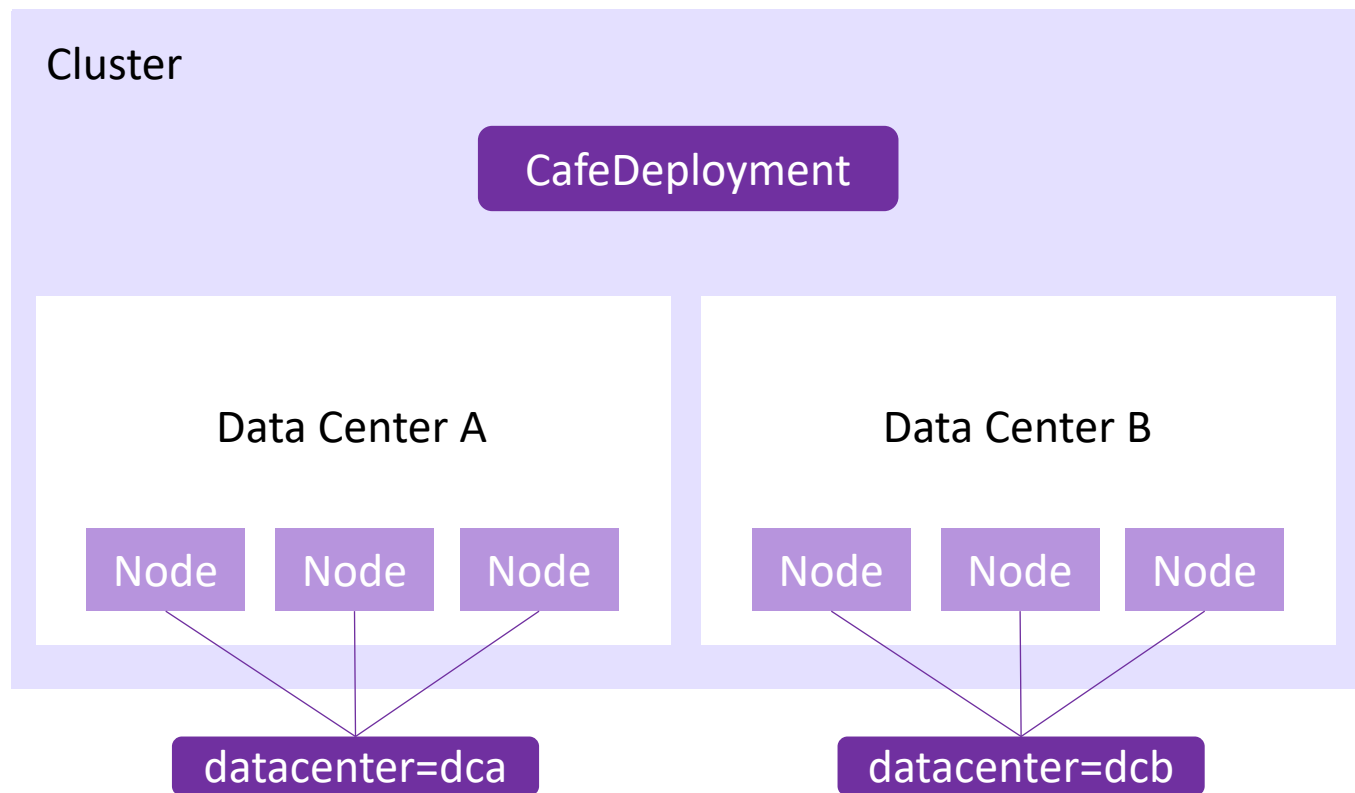


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019



```
kind: CafeDeployment
spec:
  podSetType: InPlaceSet
  replicas: 6
  matchLabels:
    instance: productpage
    name: bookinfo
  ...
  template:
    ...
    topology:
      unitType: DataCenter
      values:
        - DCA
        - DCB
```


Deployment Strategy



KubeCon

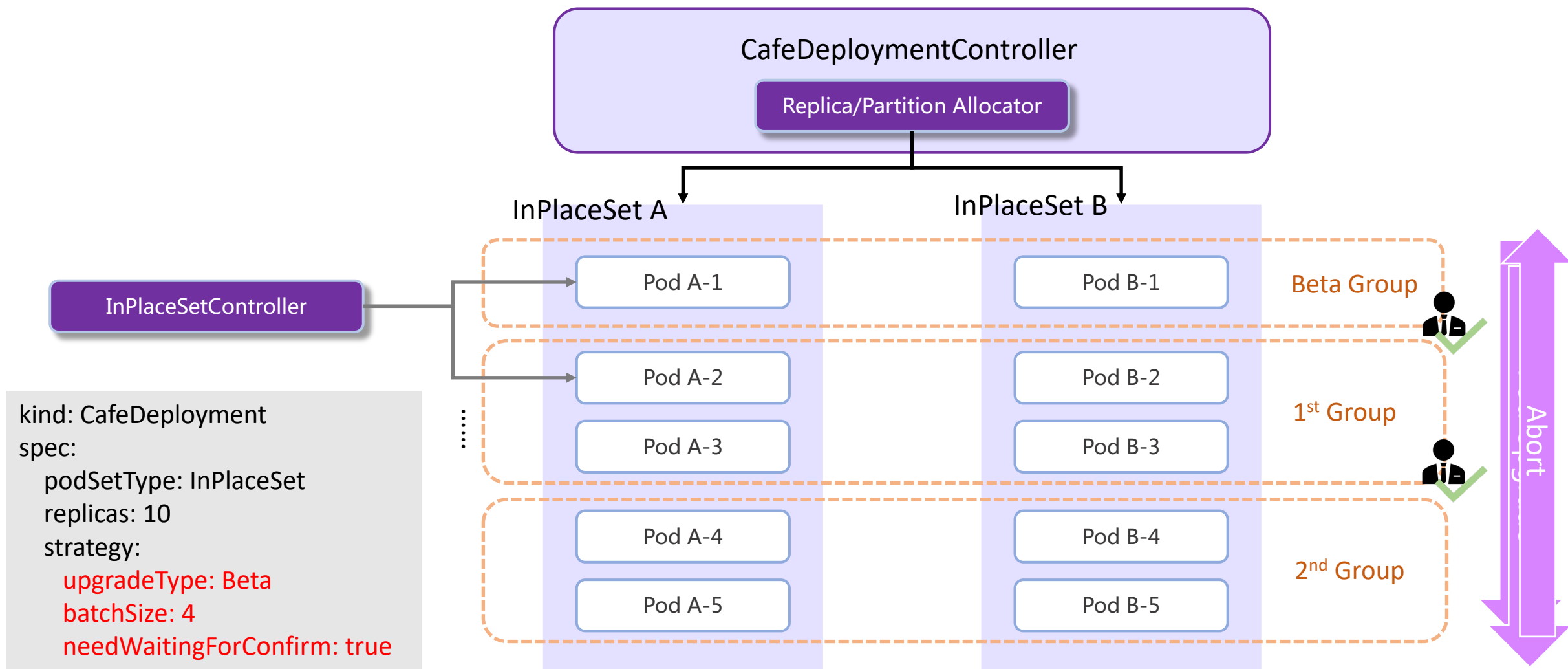


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019



Reschedule



KubeCon



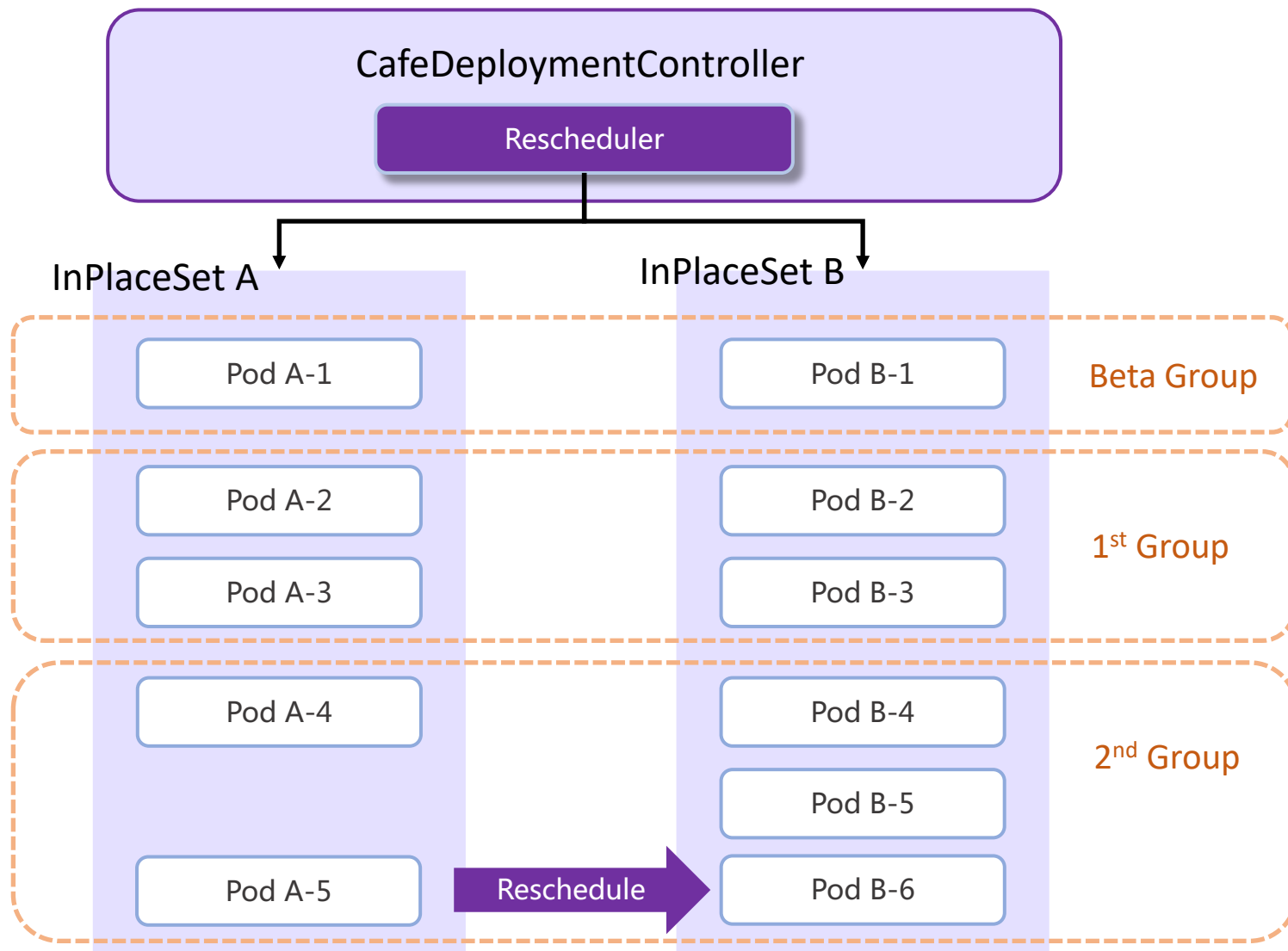
CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

- Enable auto-rescheduling Pod to another InPlaceSet when out of node resources in one deploy unit.



```
kind: CafeDeployment
spec:
  podSetType: InPlaceSet
  replicas: 10
  topology:
    unitReplicas:
      DCA: 4
      DCB: 60%
```

Multi Workload Adapted



KubeCon

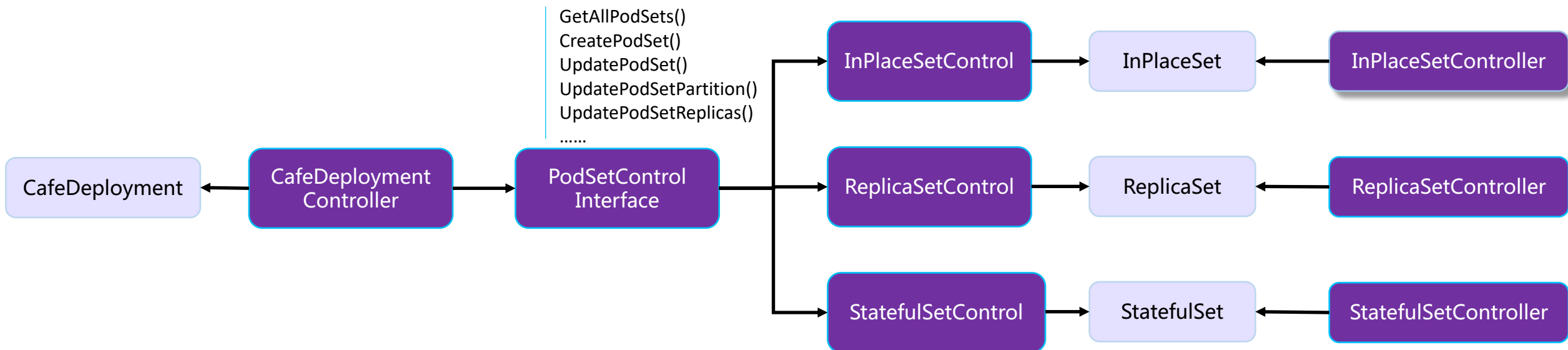


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019



Multi Workload Adapted



KubeCon

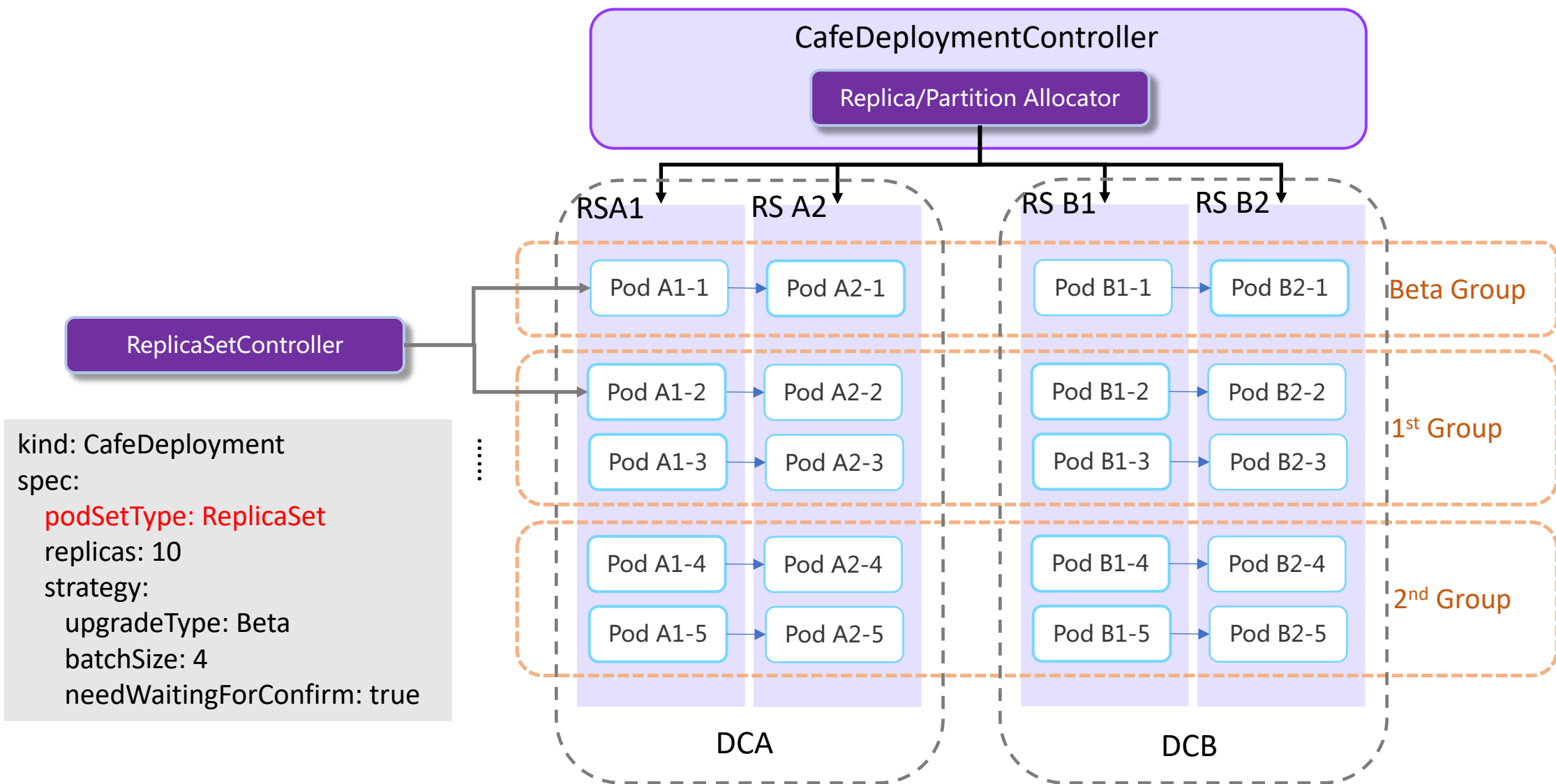


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019



Graceful Shutdown



KubeCon



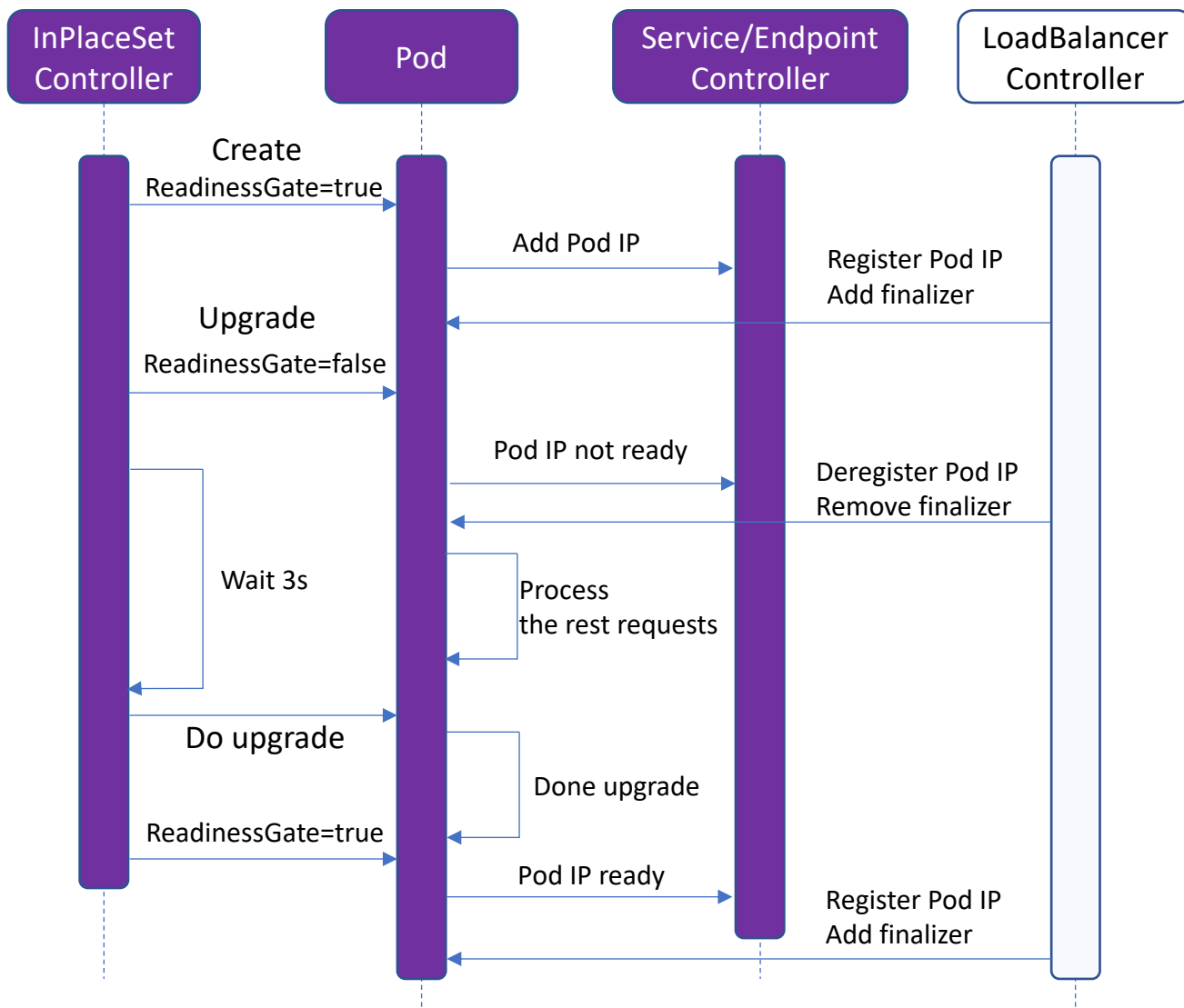
CloudNativeCon

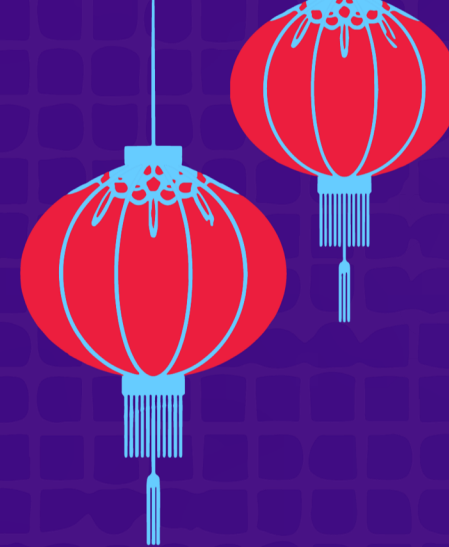


OPEN SOURCE SUMMIT

China 2019

- Strict readiness management during upgrade
- Third-party controller cooperation





KubeCon



CloudNativeCon

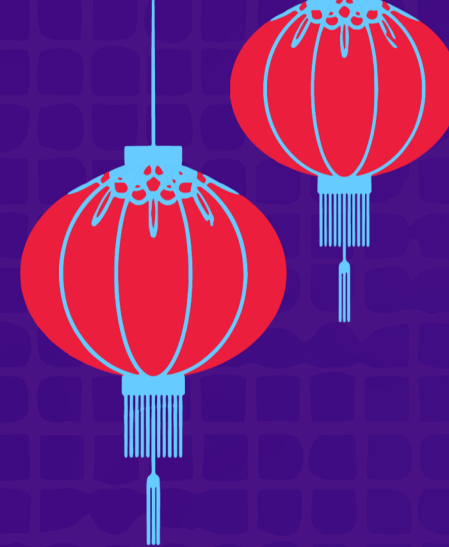


OPEN SOURCE SUMMIT

China 2019

Now it's DEMO time!





KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

Mengyi Zhou: fengsheng.zmy@alipay.com
Ke Wu: haotian.wk@alipay.com

