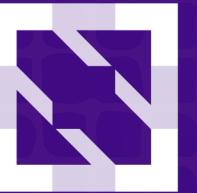




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Extending Deployment for Internet Financial Mission-Critical Scenarios

Ke Wu, Mengyi Zhou



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A Brief Review

● ReplicationController

- replication
- rolling update

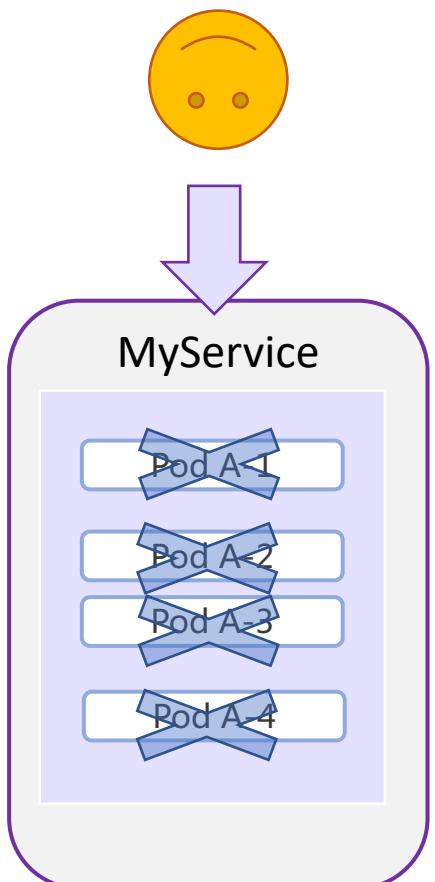
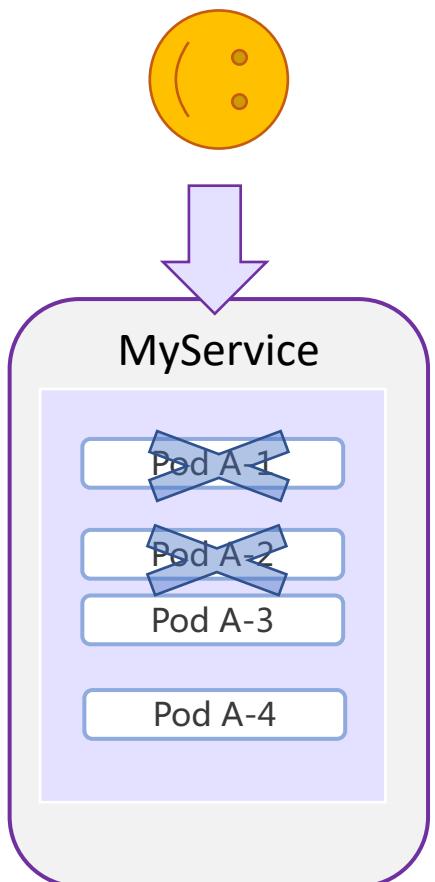
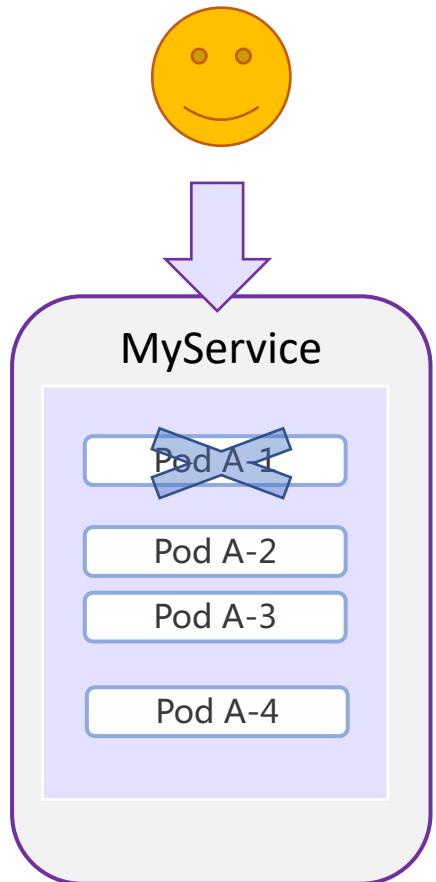
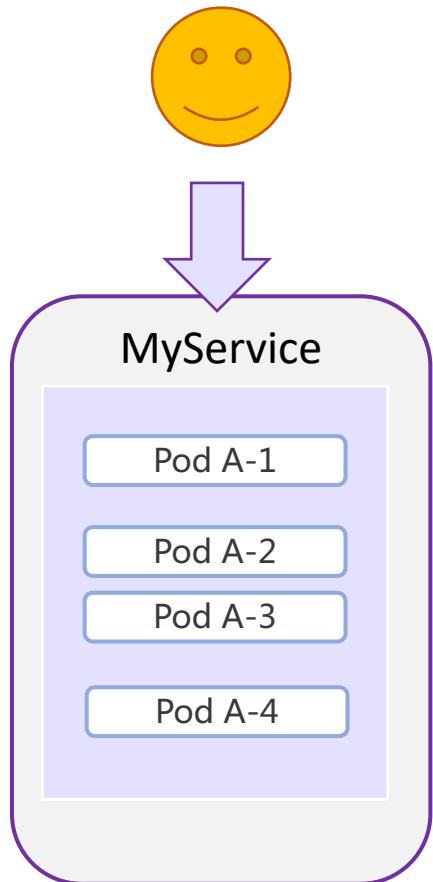
● Deployment and ReplicaSet

- replication
- rolling update
- version control



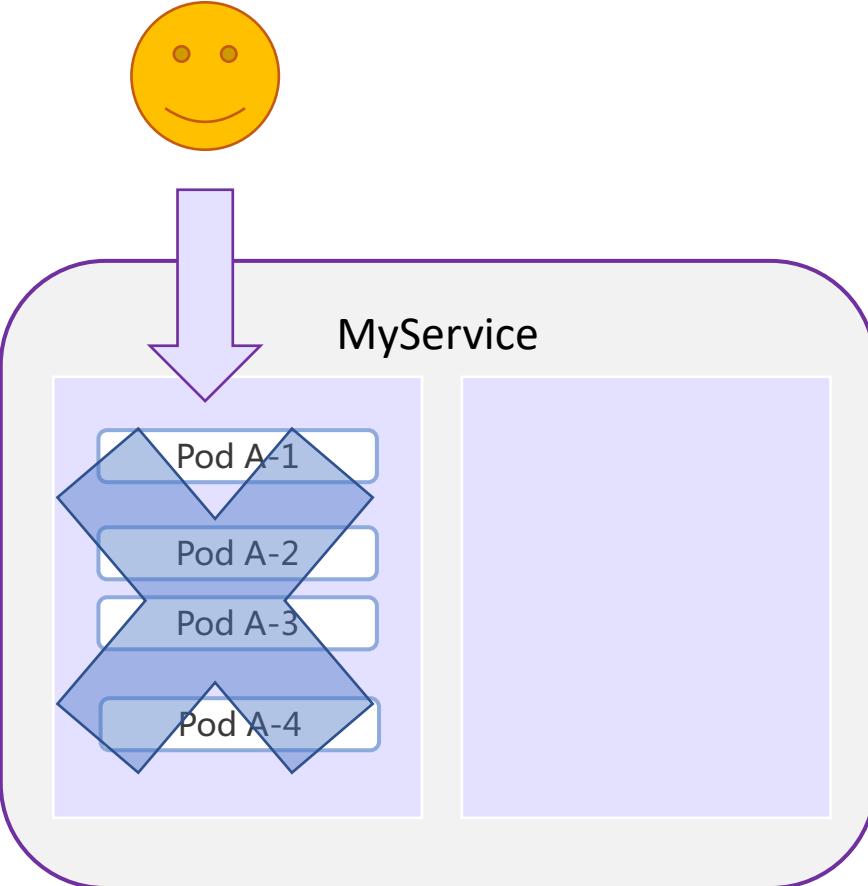
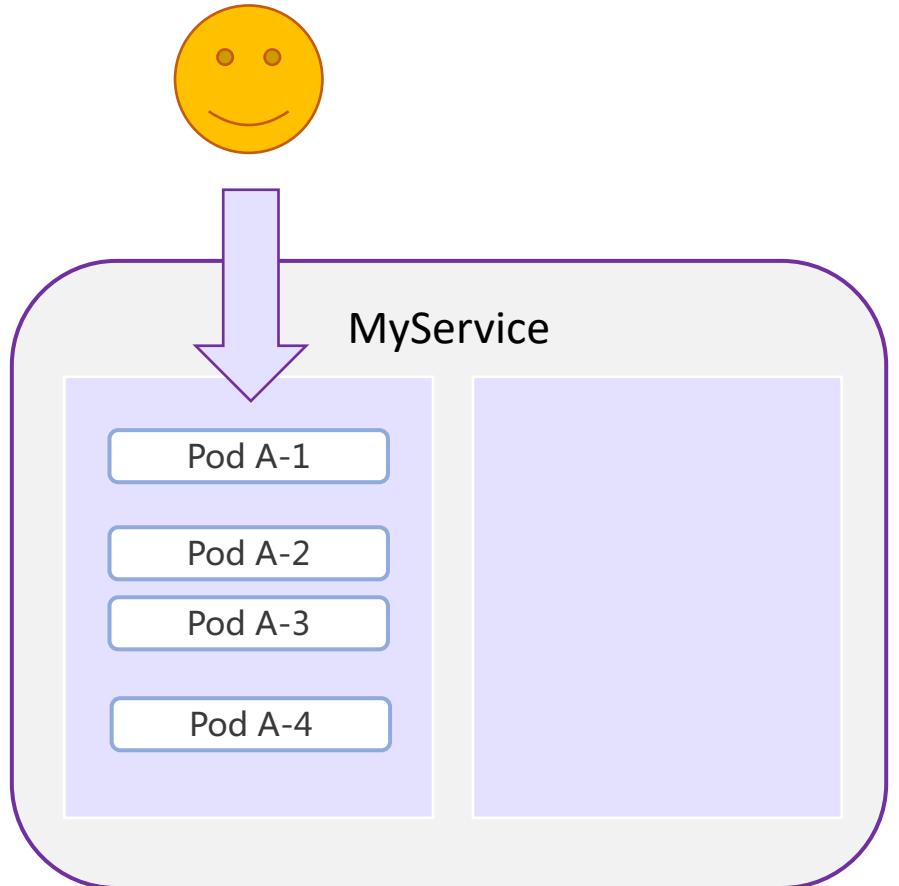
A Brief Review

- What is missed in deployment strategy?



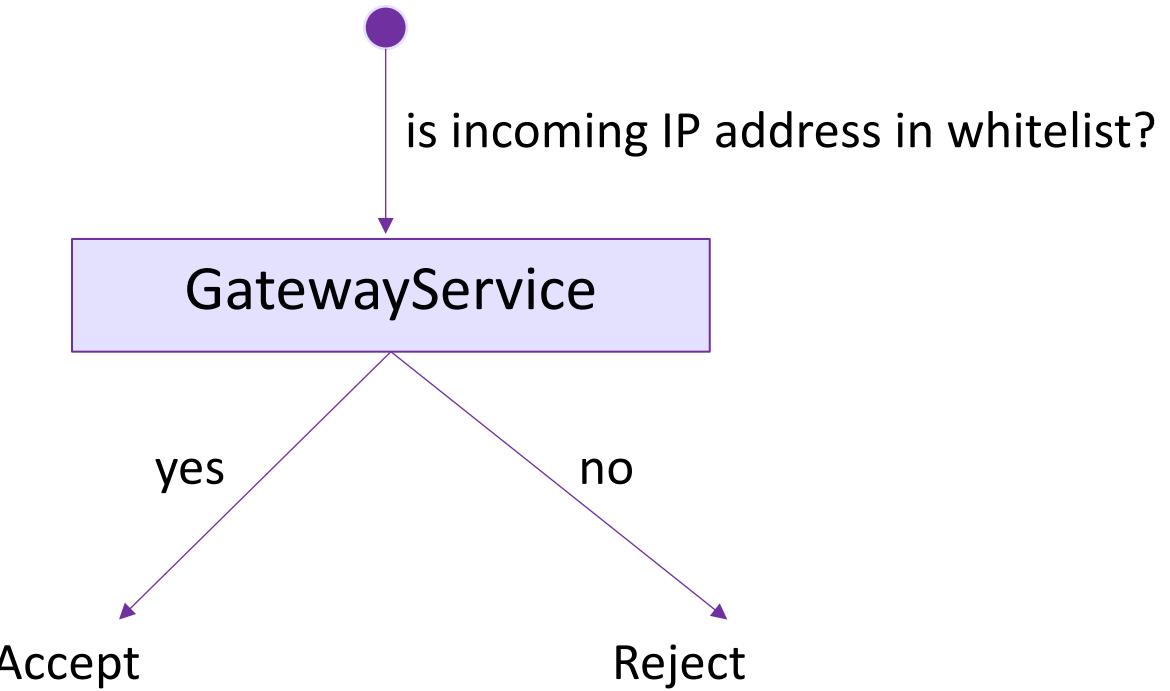
A Brief Review

- What is missed pod scheduling strategy?

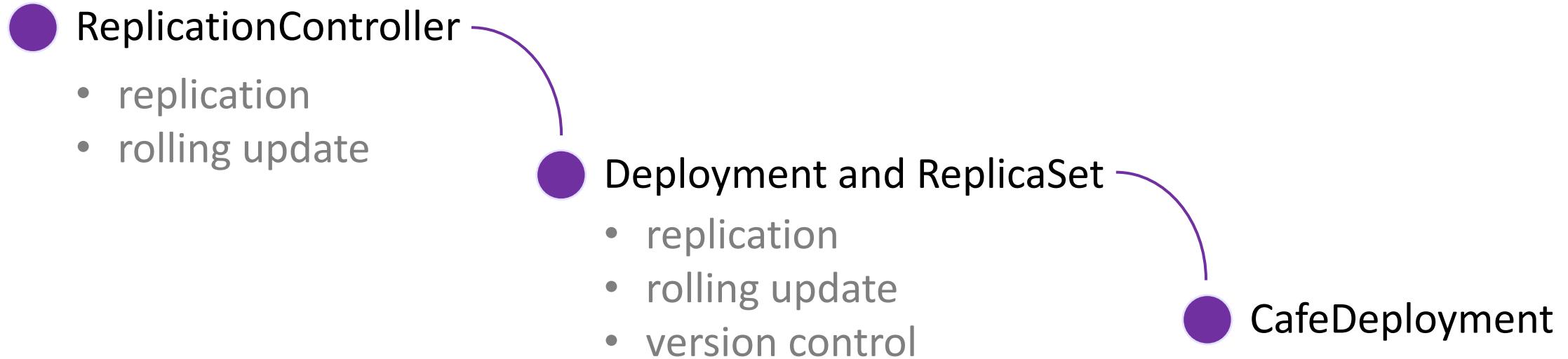


A Brief Review

- IP Address Restriction



A Brief Review





CafeDeployment

- 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

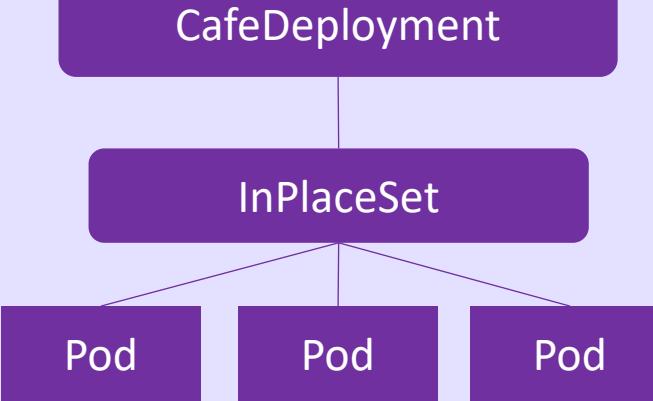
In-Place Upgrade

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

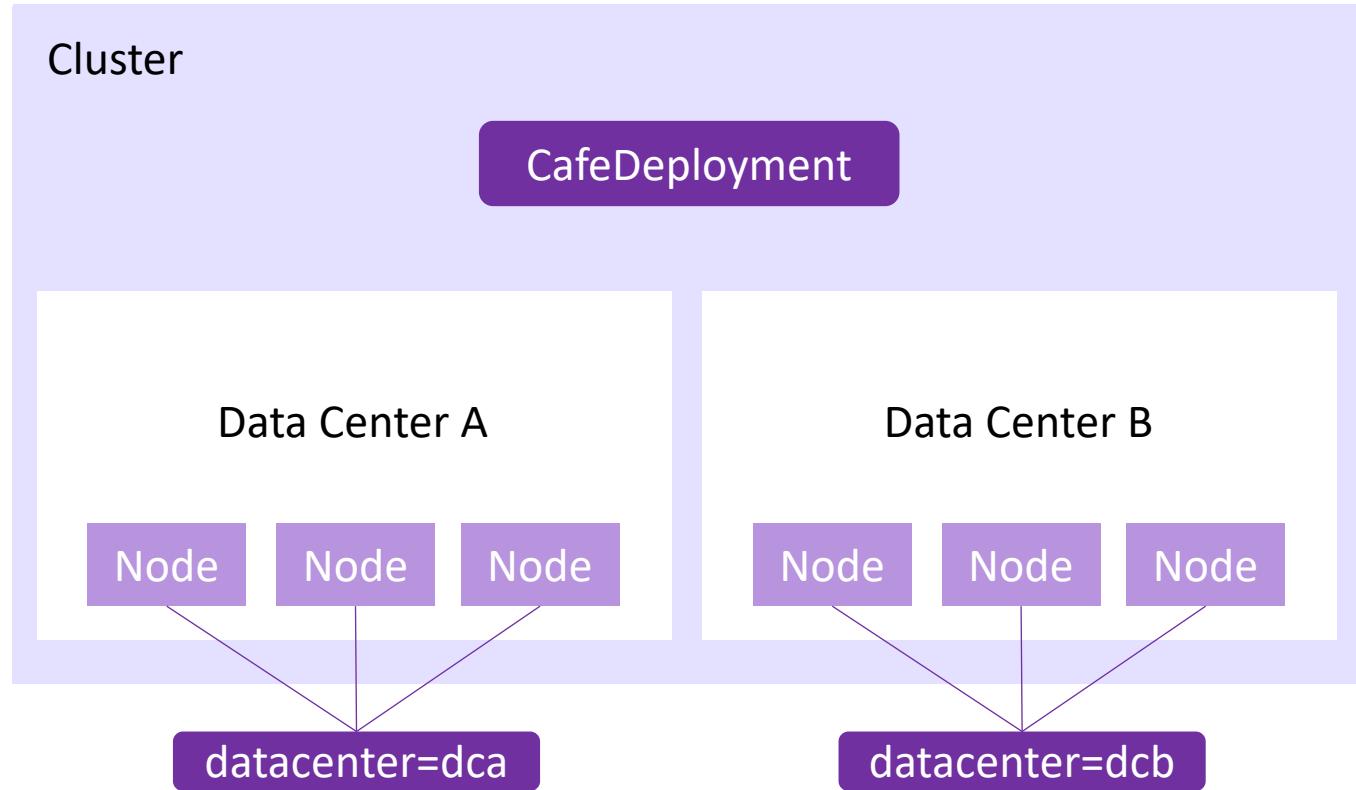
InPlaceSet provides in-place upgrade values of following fields change:

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

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

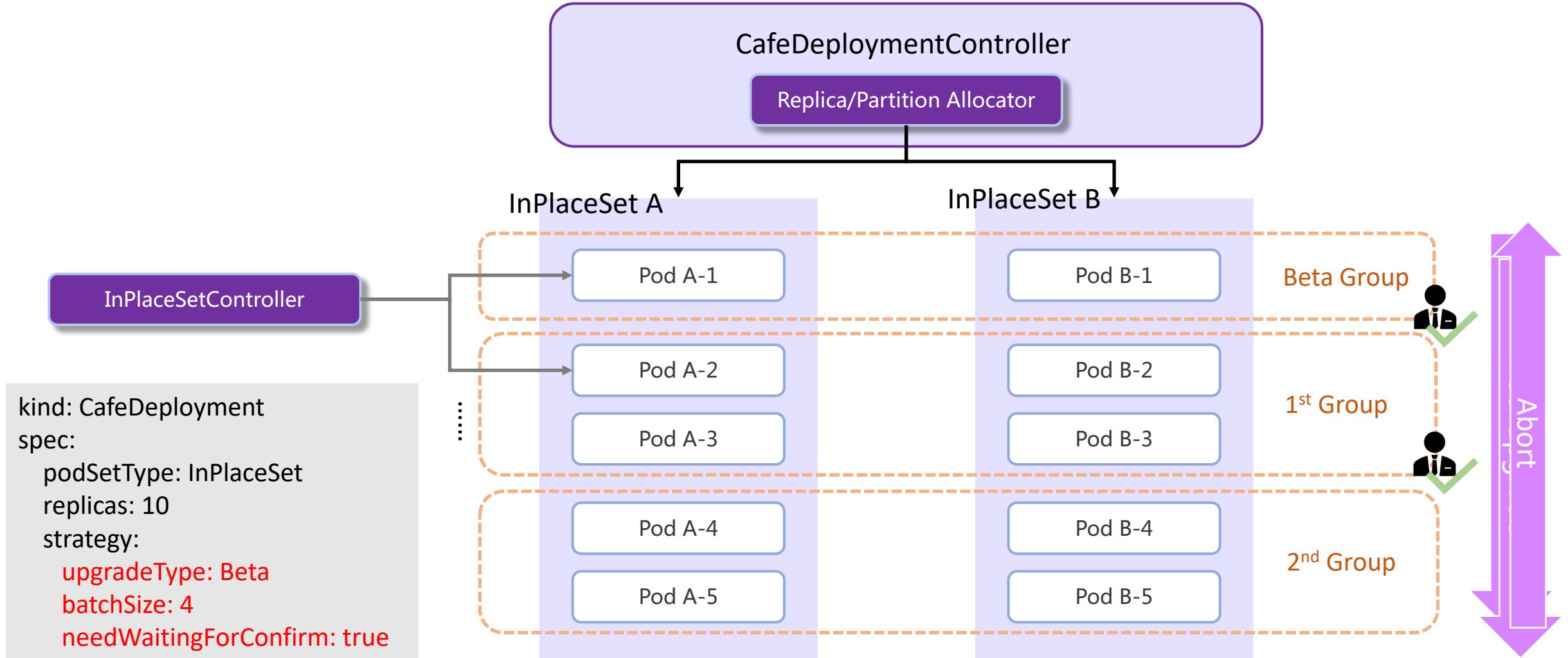


Topology Sensitive



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

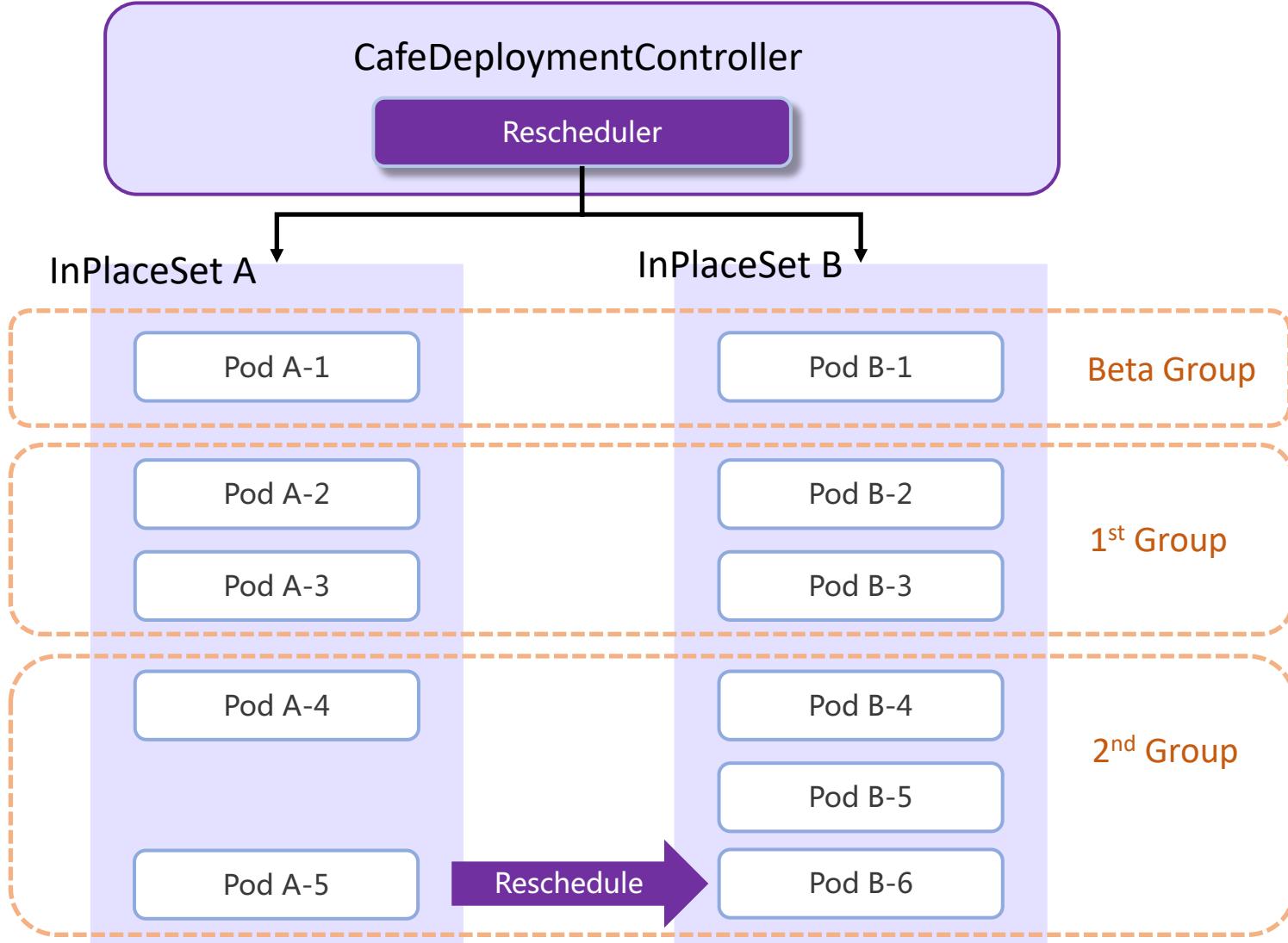
Deployment Strategy



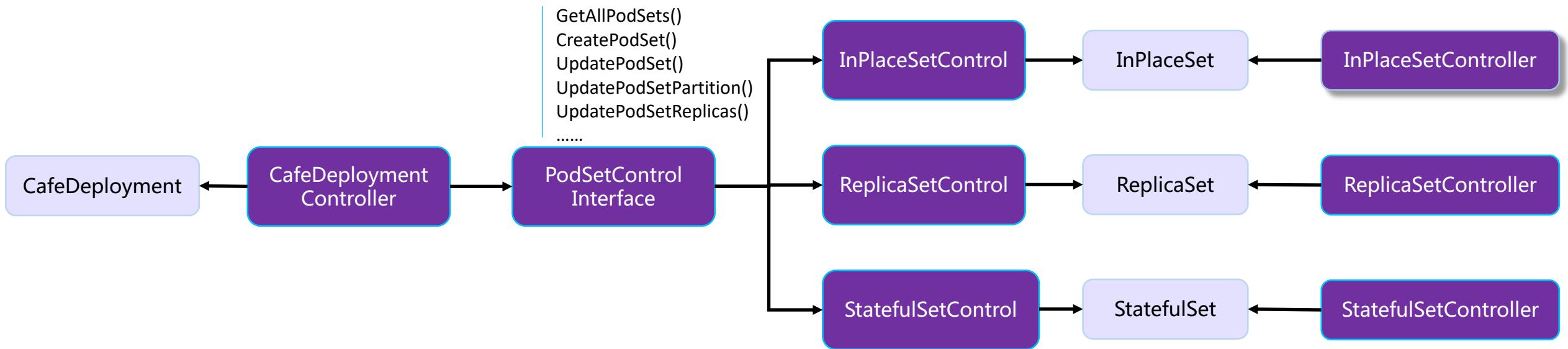
Reschedule

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

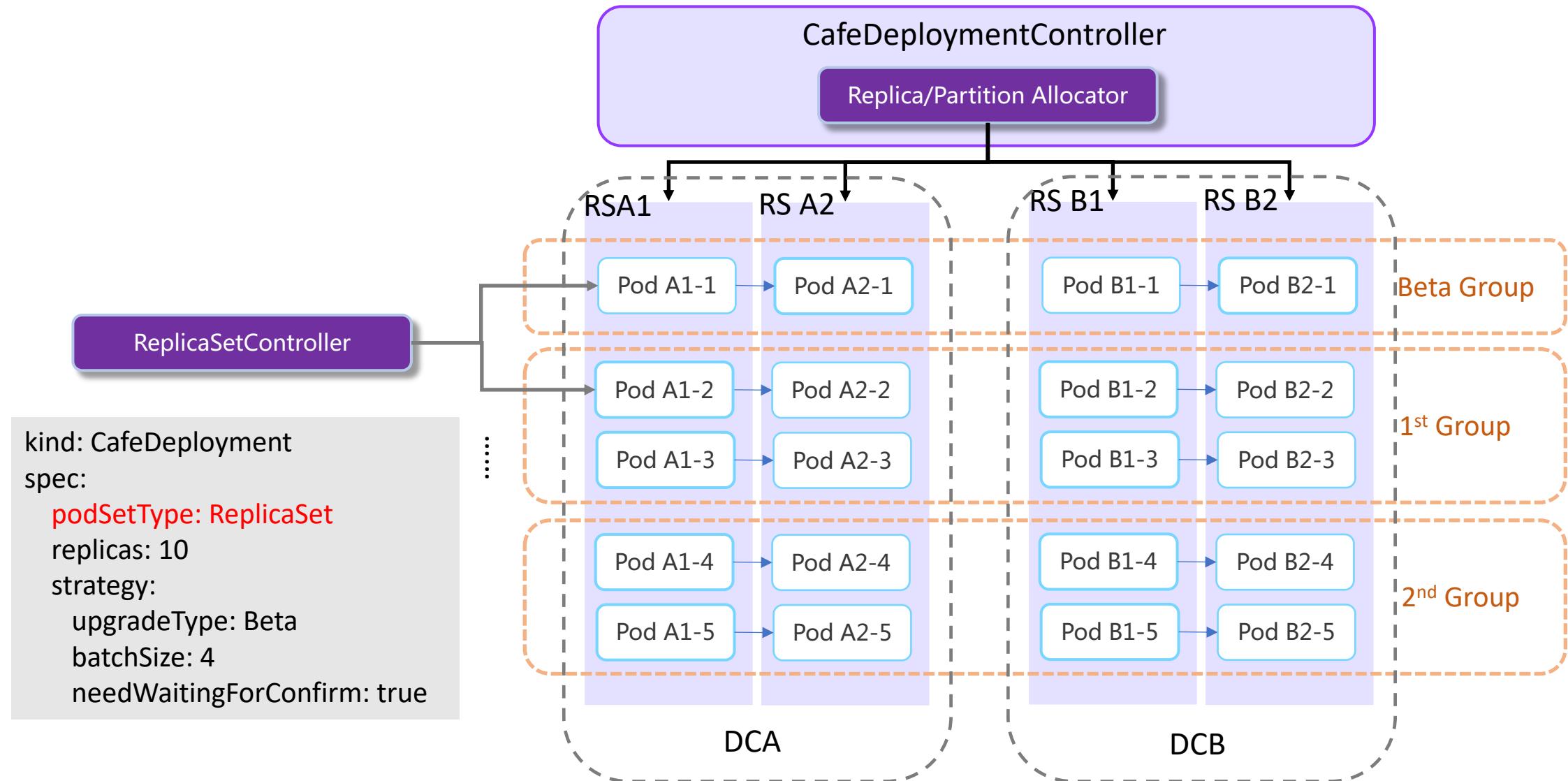
```
kind: CafeDeployment
spec:
  podSetType: InPlaceSet
  replicas: 10
  topology:
    unitReplicas:
      DCA: 4
      DCB: 60%
```



Multi Workload Adapted

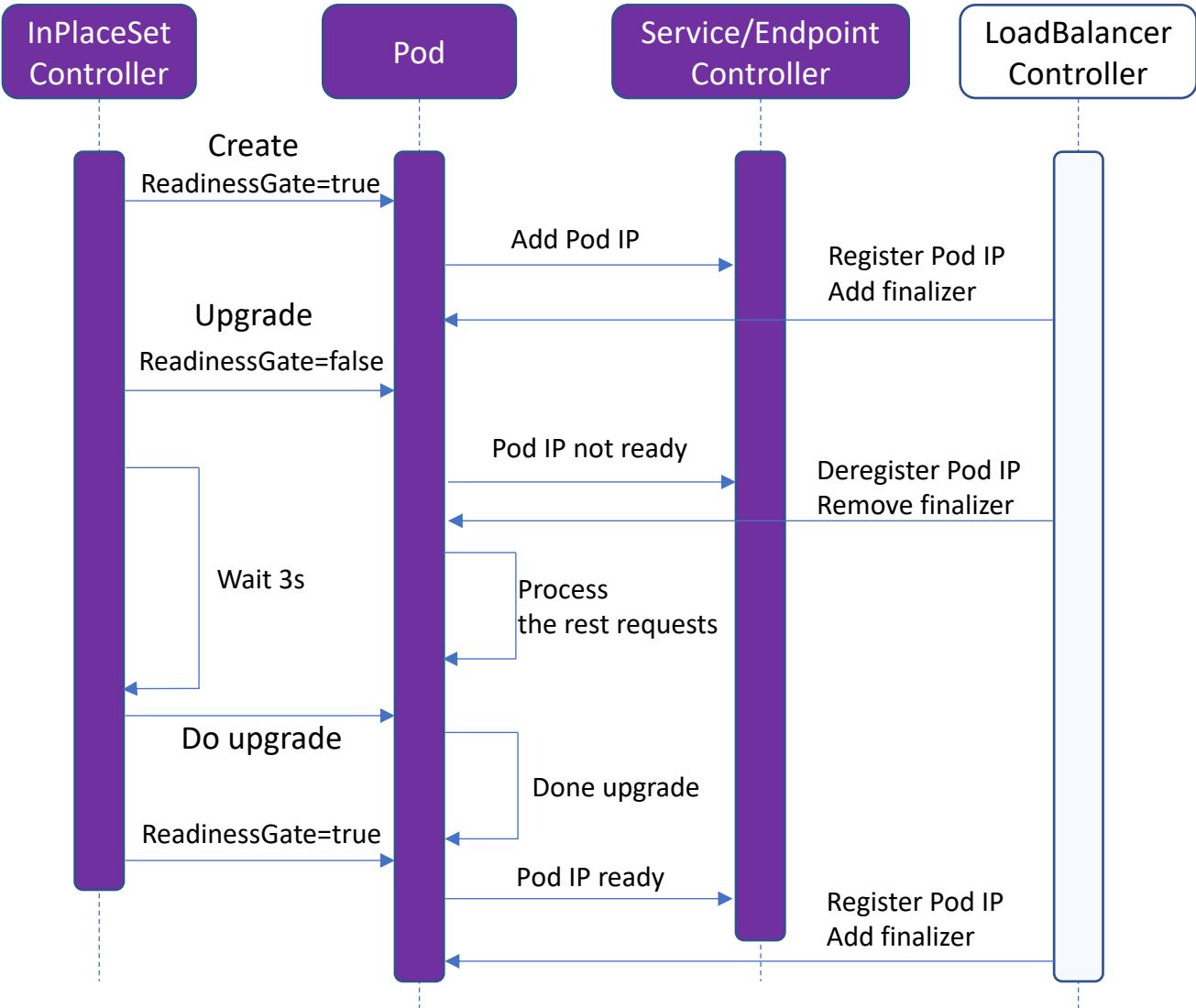


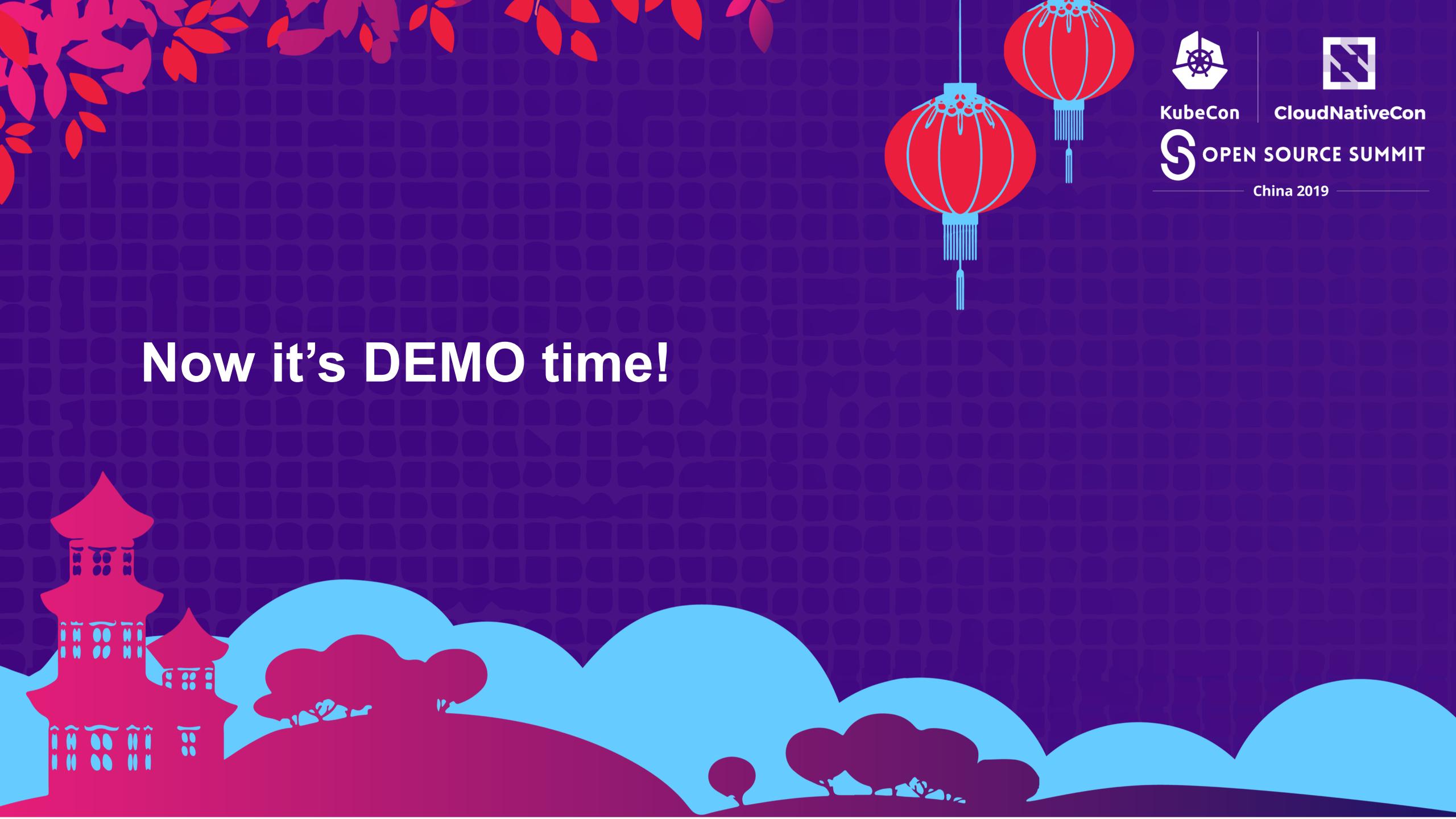
Multi Workload Adapted



Graceful Shutdown

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





Now it's DEMO time!



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