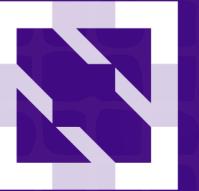




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# Extending Deployment for Internet Financial Mission-Critical Scenarios

Ke Wu, Mengyi Zhou



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# CafeDeployment

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

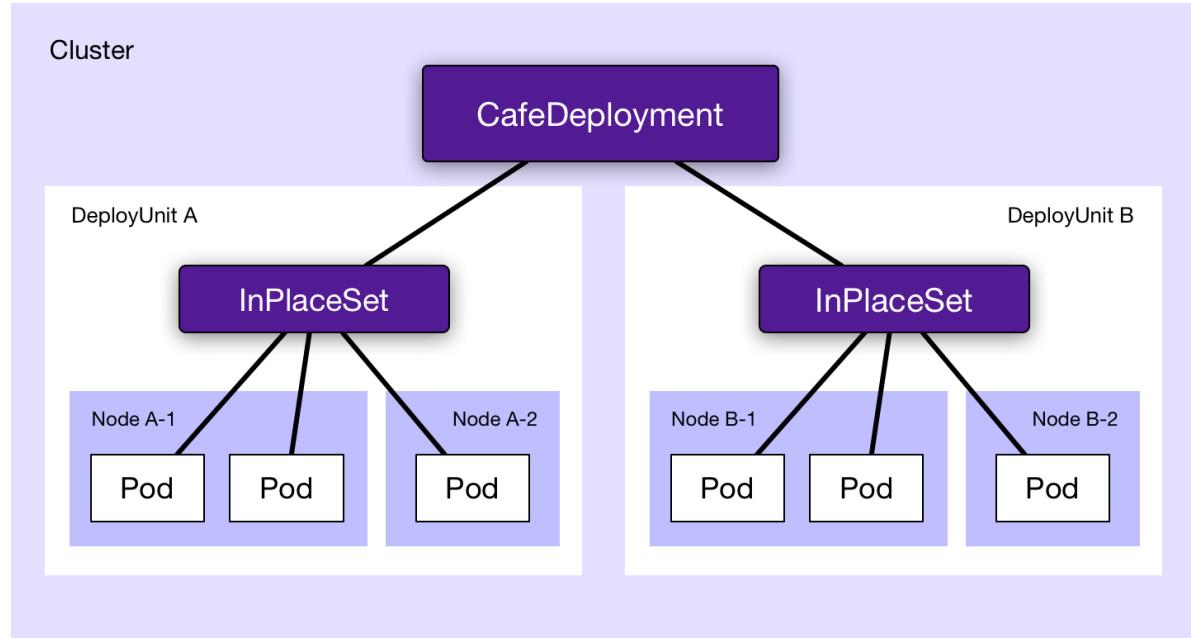
# CafeDeployment

Features	CafeDeployment	Deployment
In-place upgrade	Y	N
Canary	Y	N
Rolling upgrade strategy	Using Batches	Using max surge
Scaling strategy	Using Batches	N
Graceful shutdown of Pods	Y	N
Controller revision	Y	Y
Pod scheduling policy	Deploy unit spread Node affinity	Node affinity

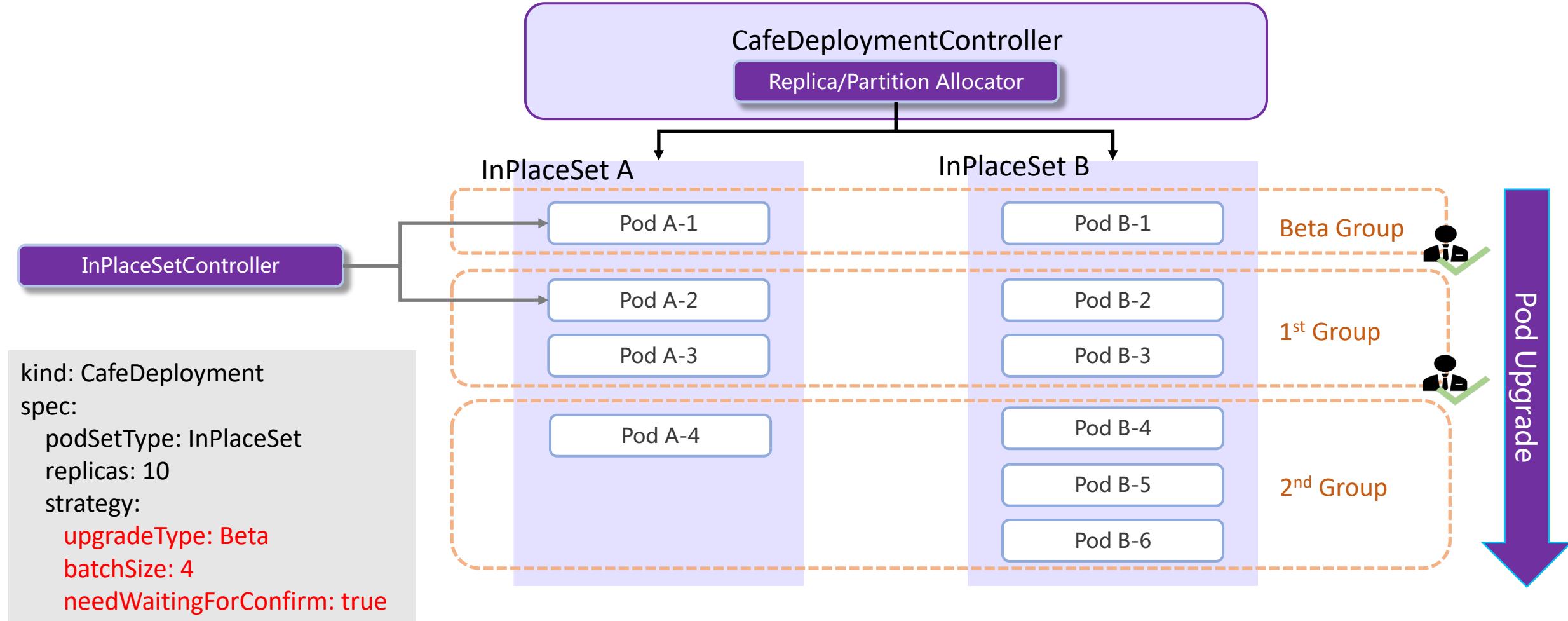
# In-Place Upgrade

```
kind: CafeDeployment
spec:
  podSetType: InPlaceSet
  replicas: 6
  matchLabels:
    instance: productpage
    name: bookinfo
  ...
  template:
  ...
  topology:
    unitType: Cell
    values:
      - CellA
      - CellB
    unitReplicas:
      CellA: 3
```

```
kind: InPlaceSet
spec:
  minReadySeconds: 30
  replicas: 3
  selector:
    matchLabels:
      instance: productpage
      name: bookinfo
  deployUnit: CellB
  template:
  ...
```

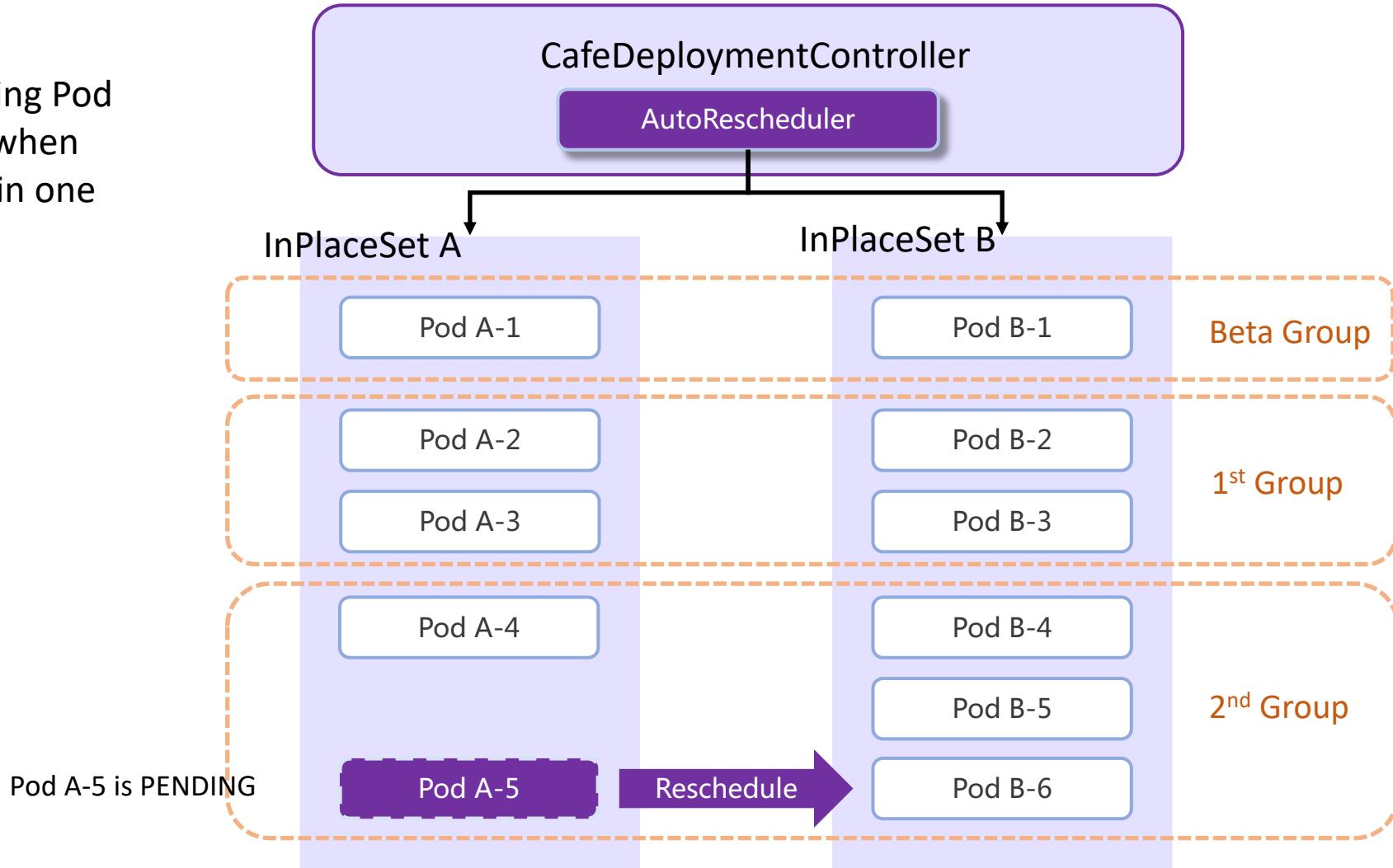


# Deployment Strategy

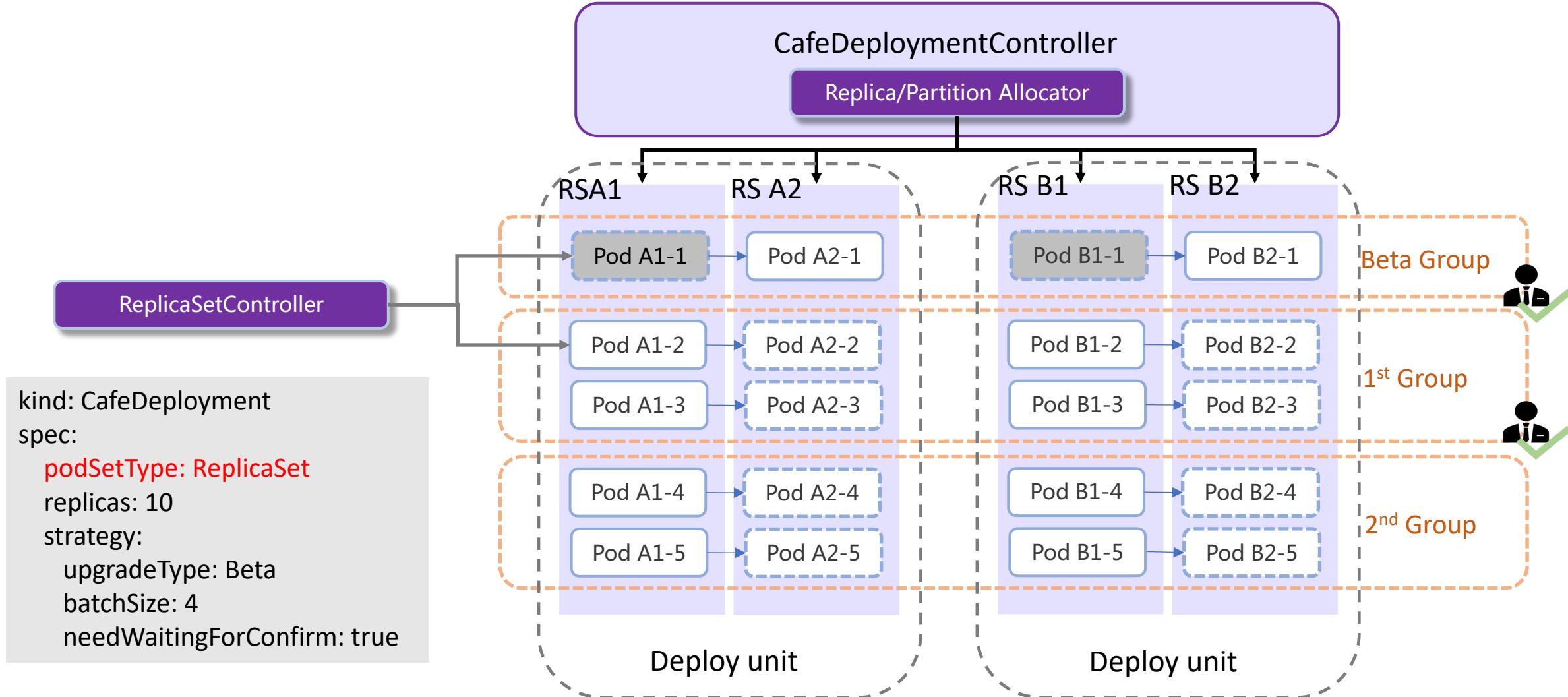


# Rescheduler

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

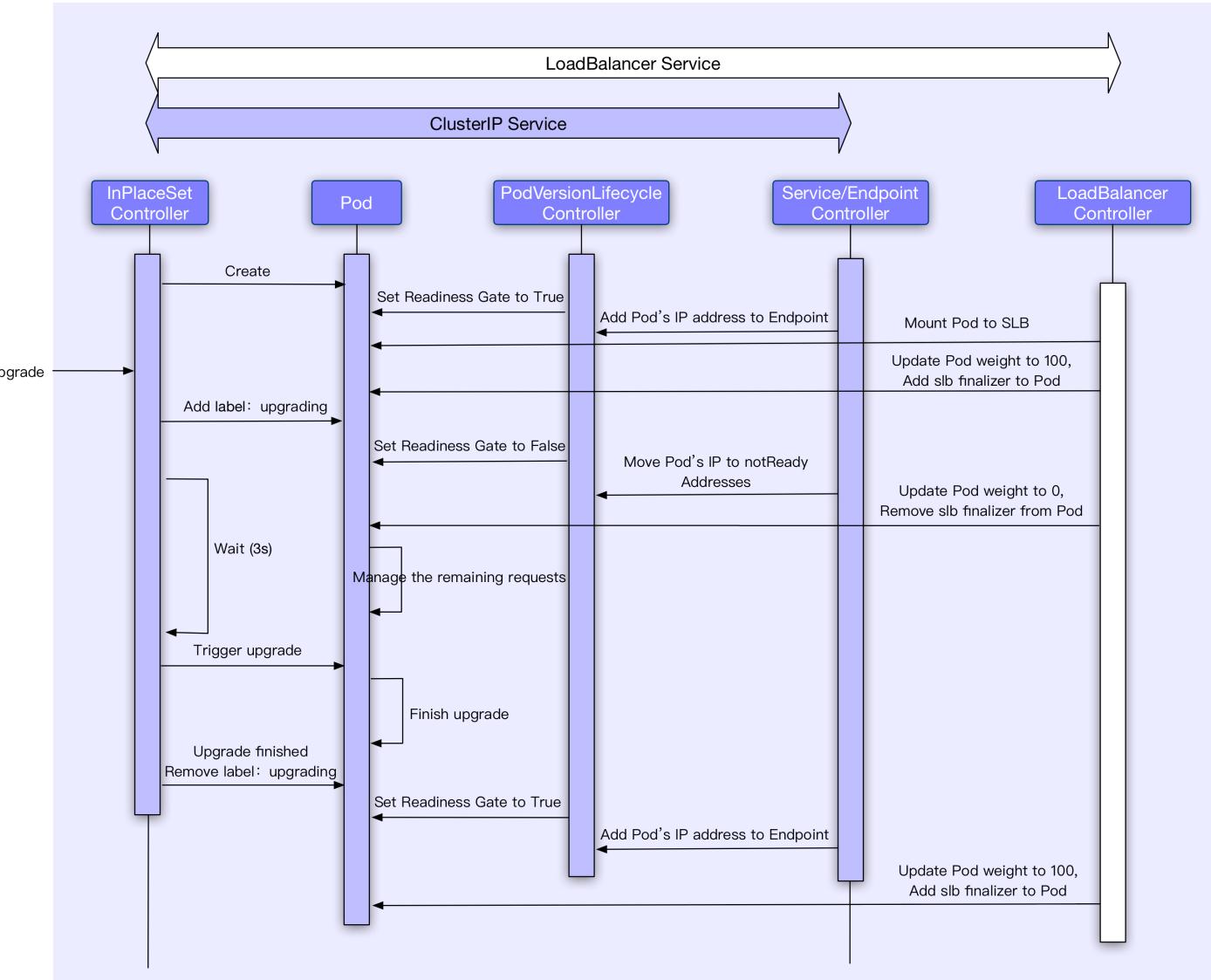


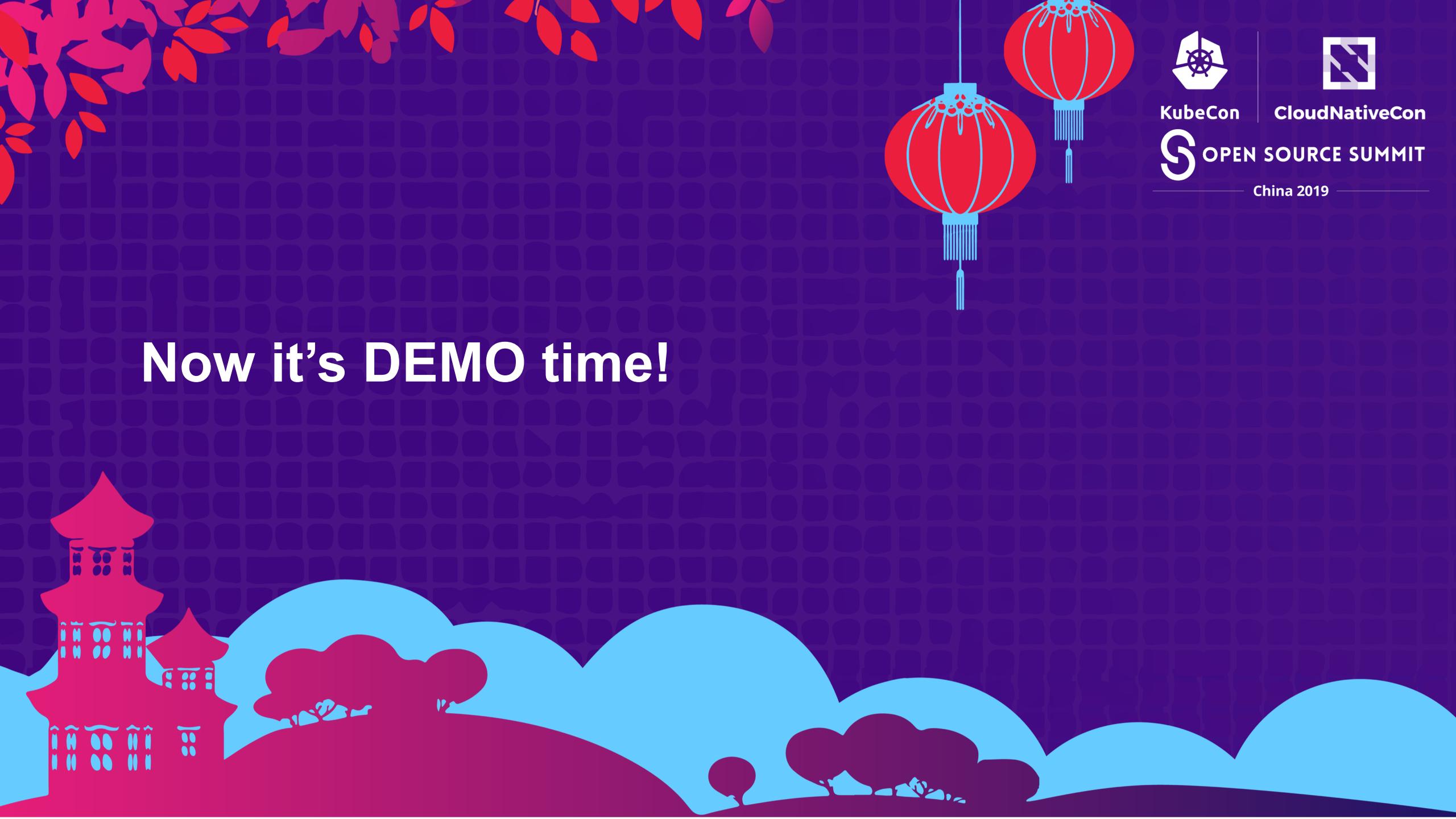
# Multi Workload Adapted



# High Availability

- Even spread of Pods across deploy units
- Strict readiness management during upgrade
- Third-party controller cooperation





# Now it's DEMO time!



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