Deploying to Kubernetes

Getting Started With Google Kubernetes Engine

Version 1.5

Google Cloud

Agenda

Introduction to deployments

Rolling updates

Canary deployments

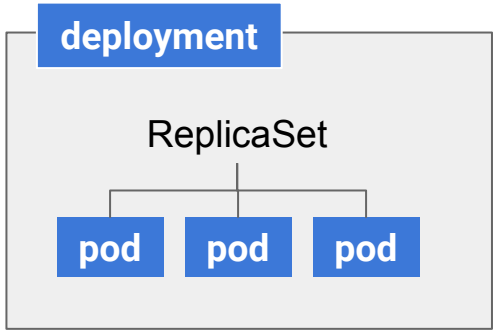
Blue-Green deployments

Deployments rely on ReplicaSets to manage and run pods

Deployment
- name: hello

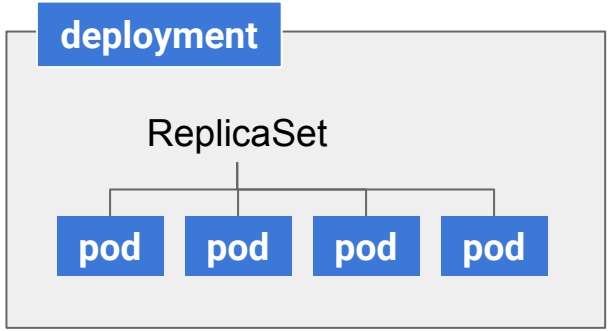
ReplicaSet
- replicas: 3
- selector:
** - app: hello**

Pod
- containers:
** - image: hello1**



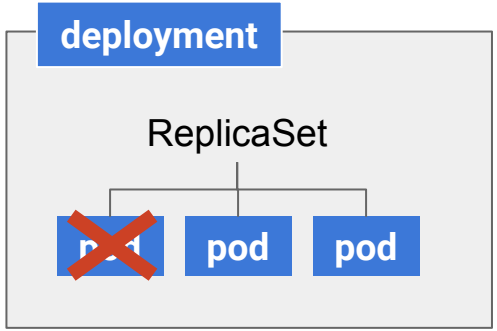
Deployments monitor your cluster and make changes

ReplicaSet
- replicas: 4
- selector:
** - app: hello**



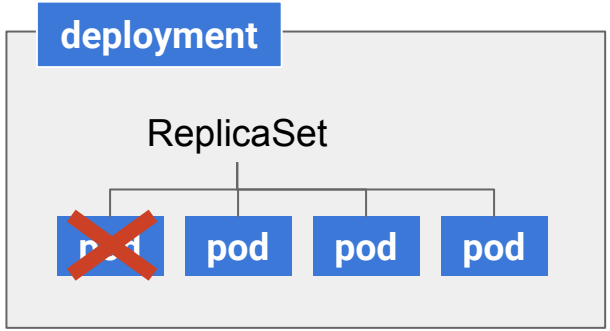
They also make corrections if pods stop running

ReplicaSet
- replicas: 3
- selector:
** - app: hello**



Deployments monitor your cluster for changes

ReplicaSet
- replicas: 3
- selector:
** - app: hello**



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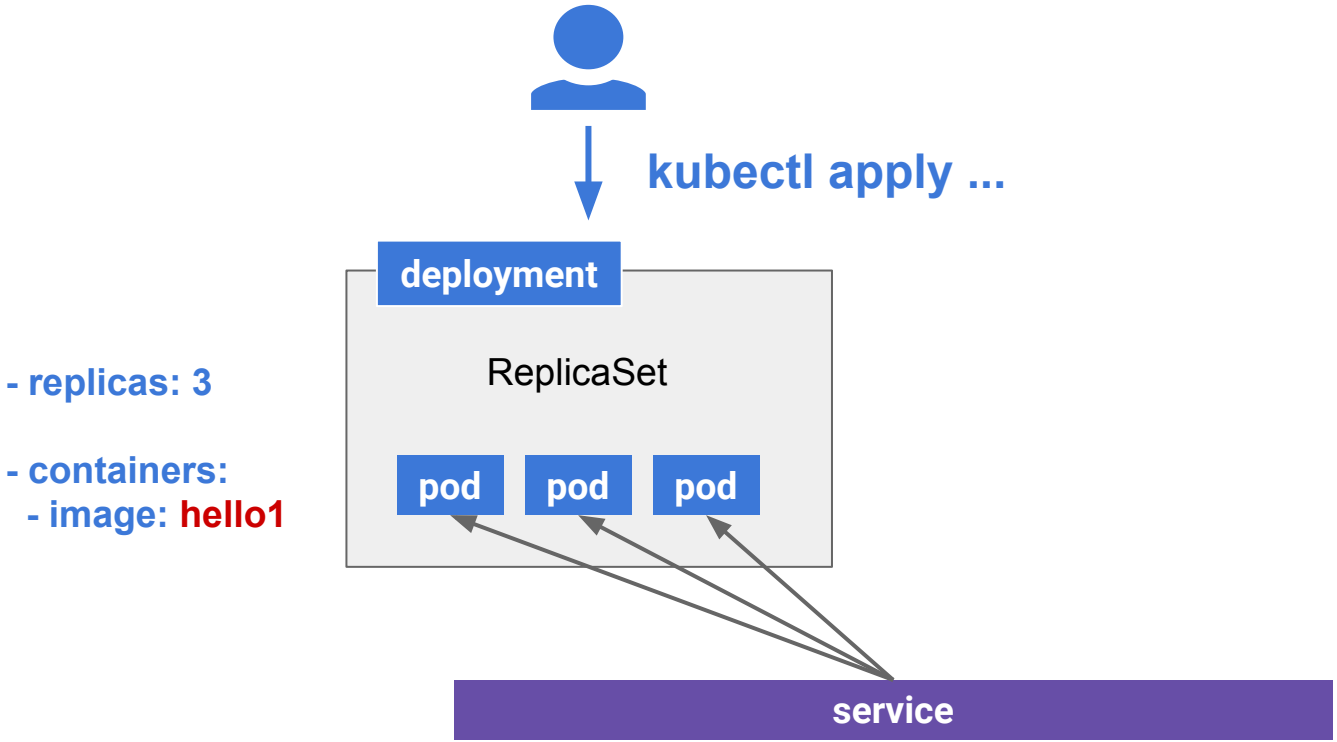
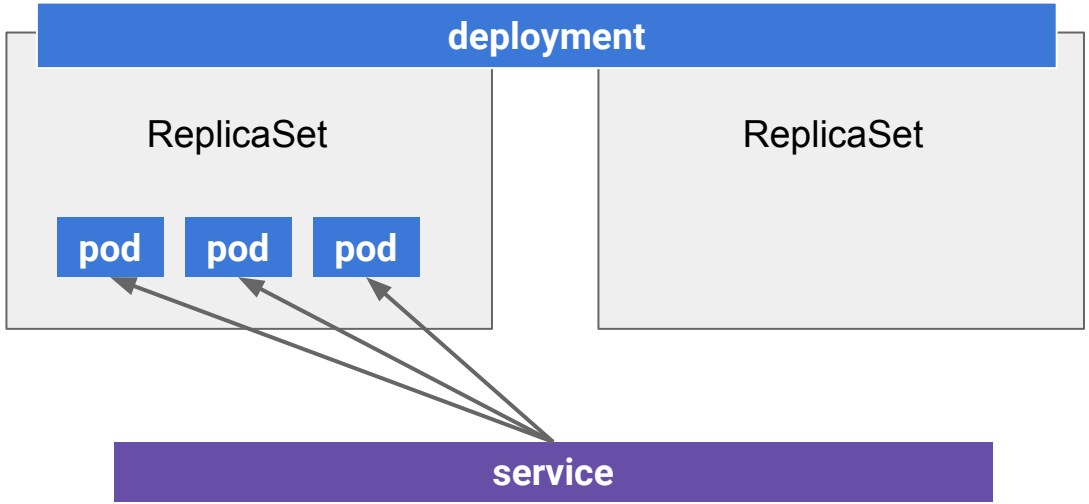
Rolling updates allow you to gradually update from one image version to another



The deployment creates a second ReplicaSet

- replicas: 3

- containers:
  - image: hello1



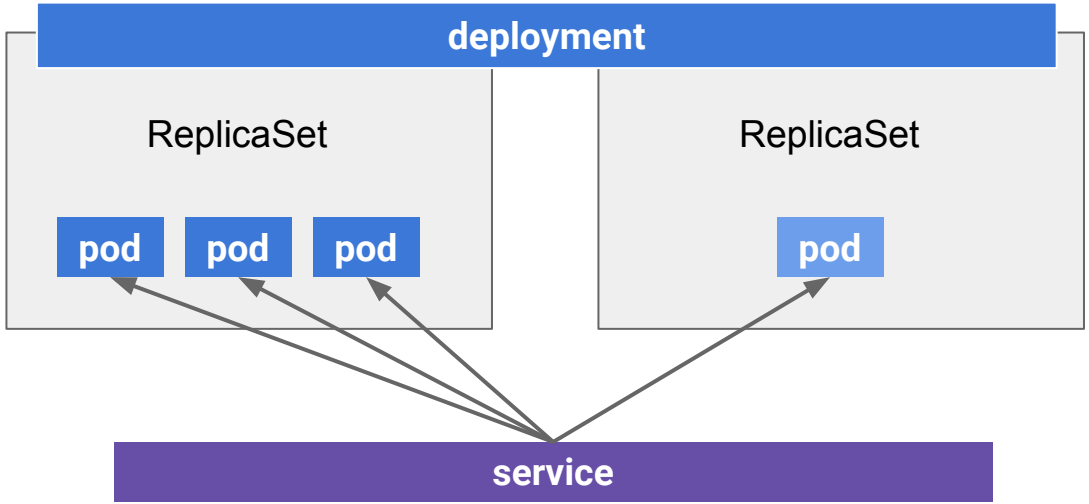
- replicas: 0

- containers:
  - image: hello2

And gradually increases the number of replicas in the second ReplicaSet

- replicas: 3

- containers:
  - image: hello1



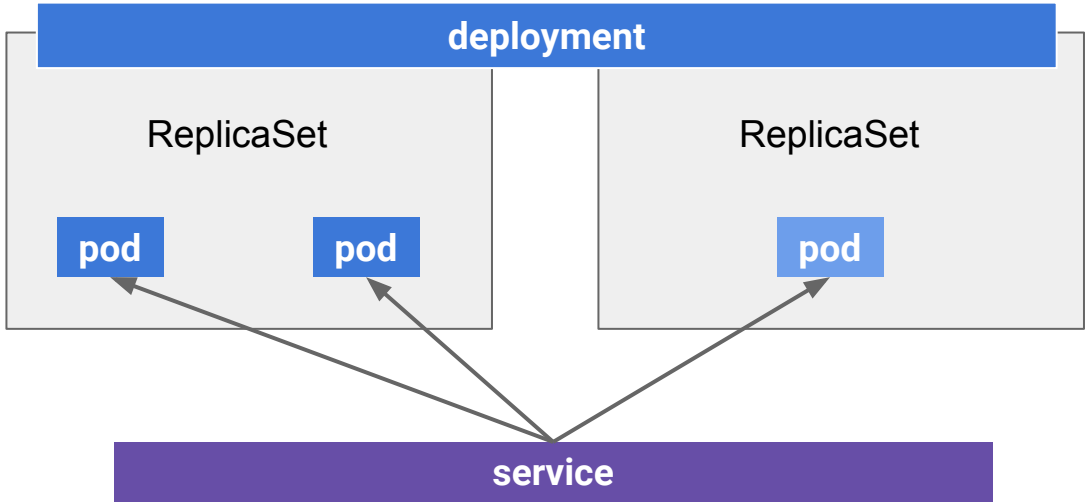
- replicas: 1

- containers:
  - image: hello2

As it decreases replicas in the first ReplicaSet

- replicas: 2

- containers:
  - image: hello1



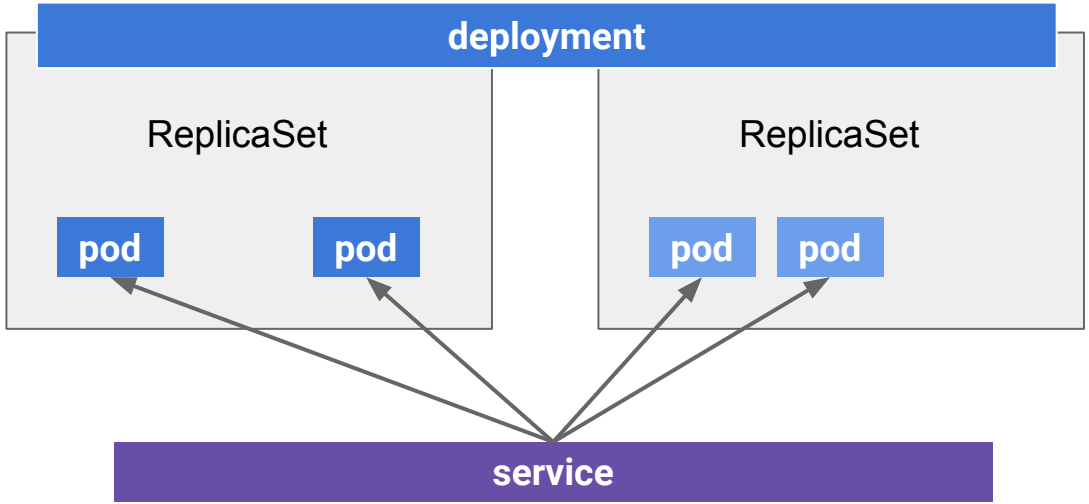
- replicas: 1

- containers:
  - image: hello2

So at any time you have at most 4 pods

- replicas: 2

- containers:
  - image: hello1



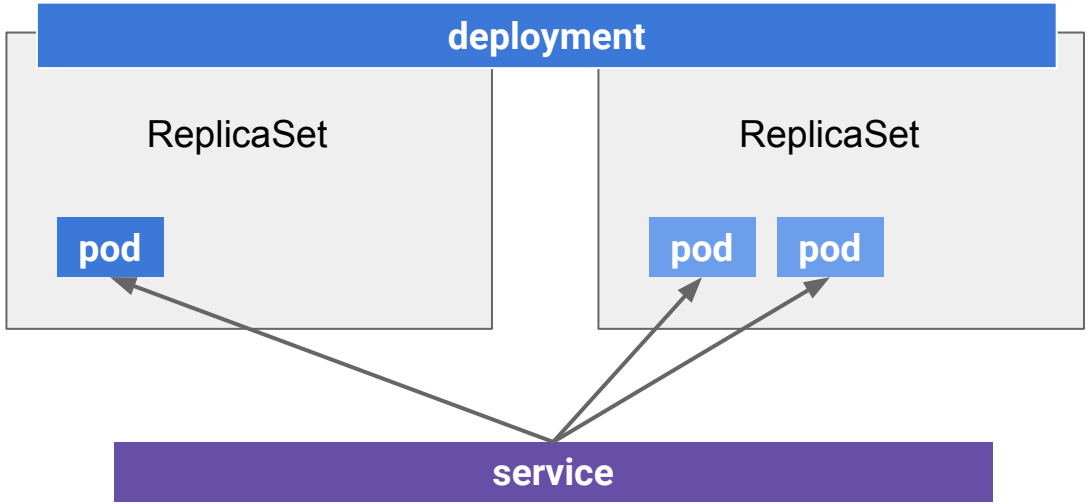
- replicas: 2

- containers:
  - image: hello2

And at least 3 pods

- replicas: 1

- containers:
  - image: hello1



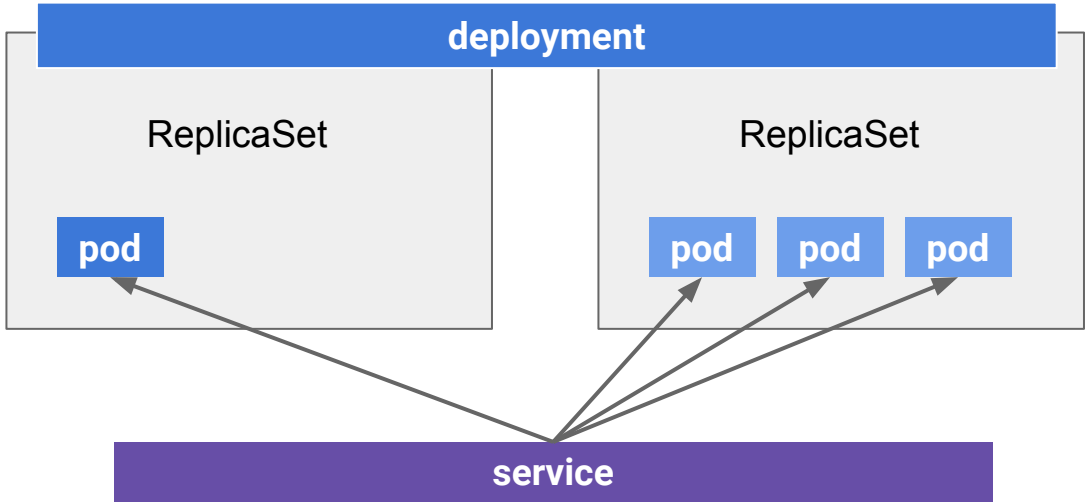
- replicas: 2

- containers:
  - image: hello2

And this continues

- replicas: 1

- containers:
  - image: hello1



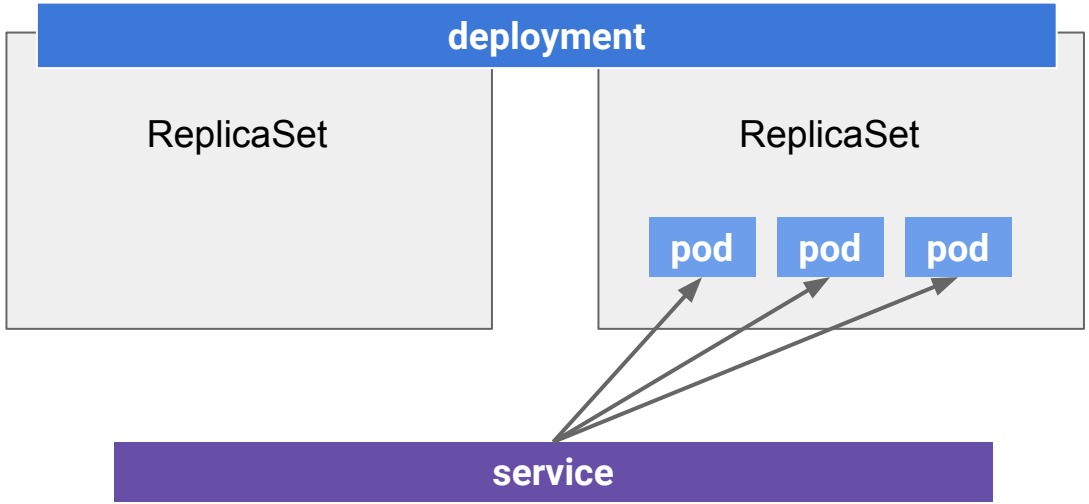
- replicas: 3

- containers:
  - image: hello2

Until the new image version is rolled out

- replicas: 0

- containers:
  - image: hello1



- replicas: 3

- containers:
  - image: hello2

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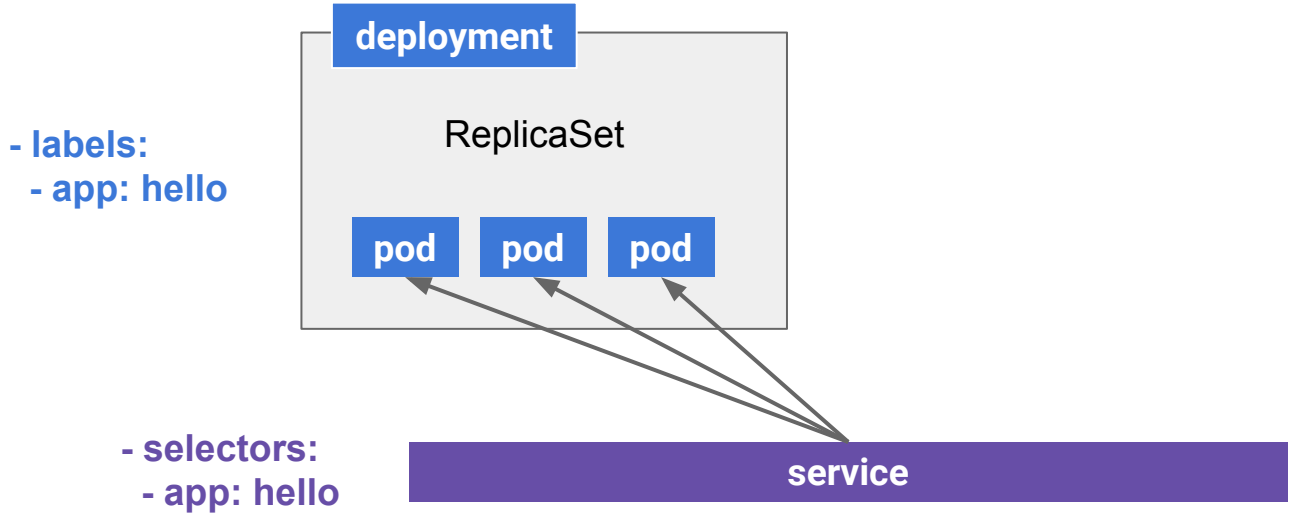
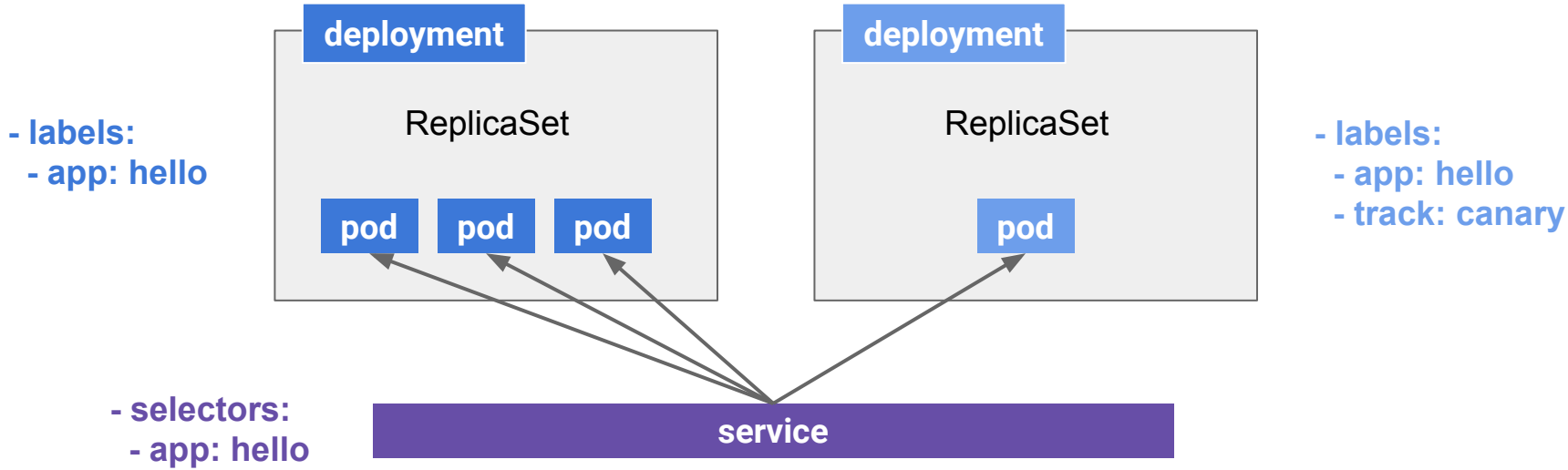
A Canary deployment relies on a service to load-balance traffic to primary pods based on label selectors



And test a second deployment by load-balancing a subset of traffic to new pods with the same label



Agenda

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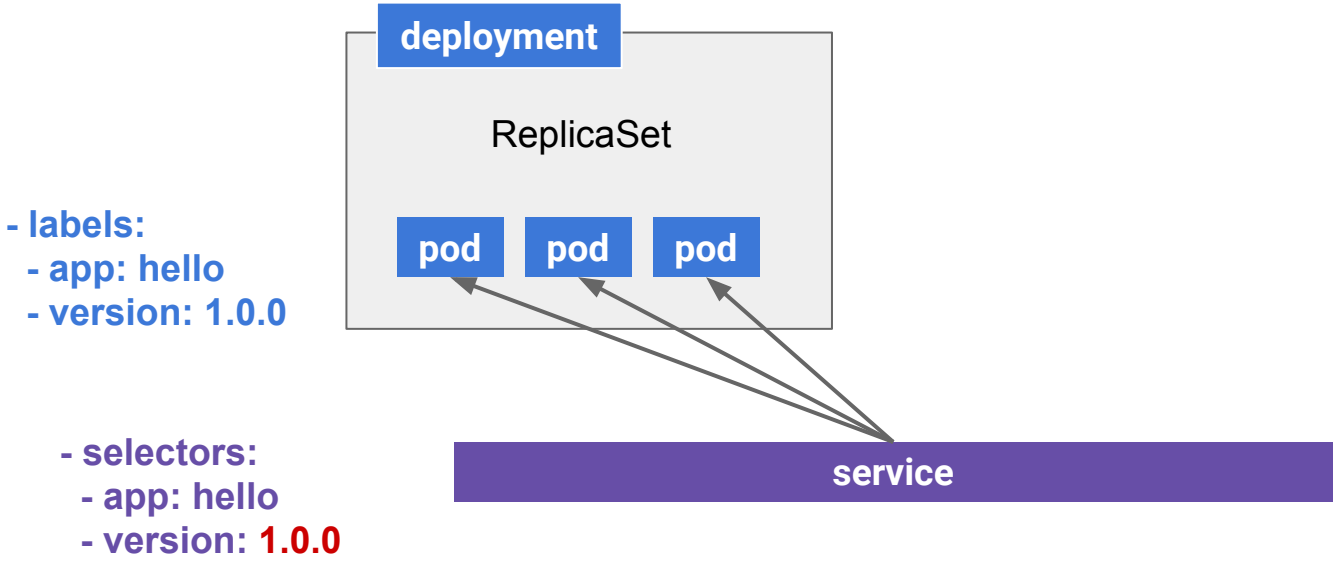
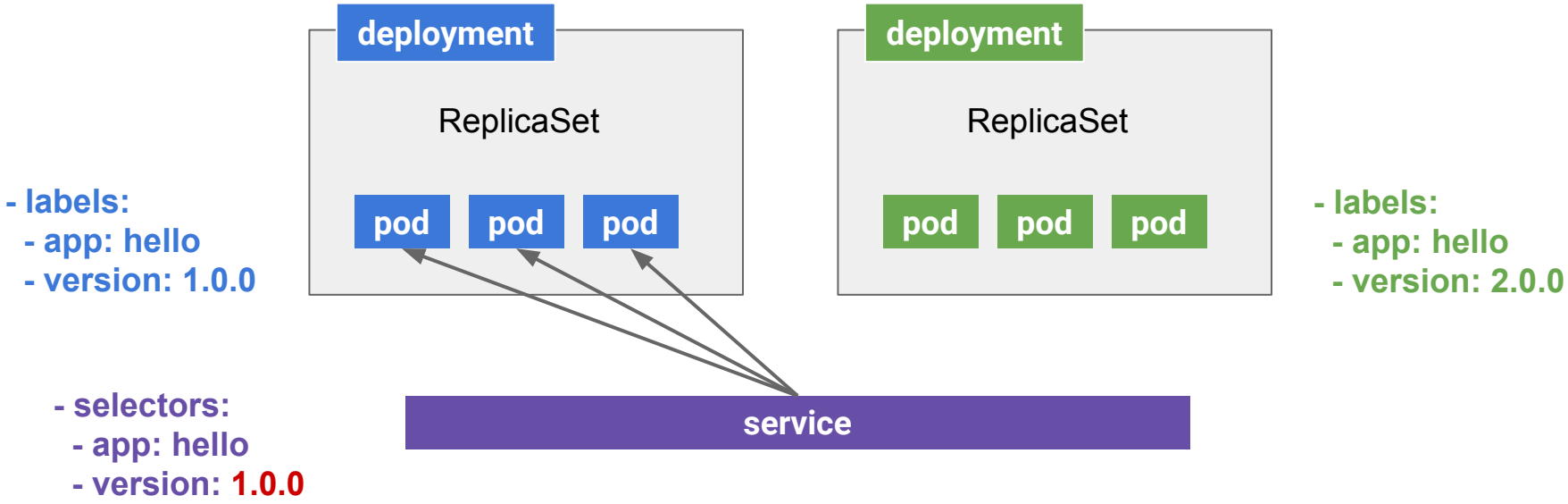
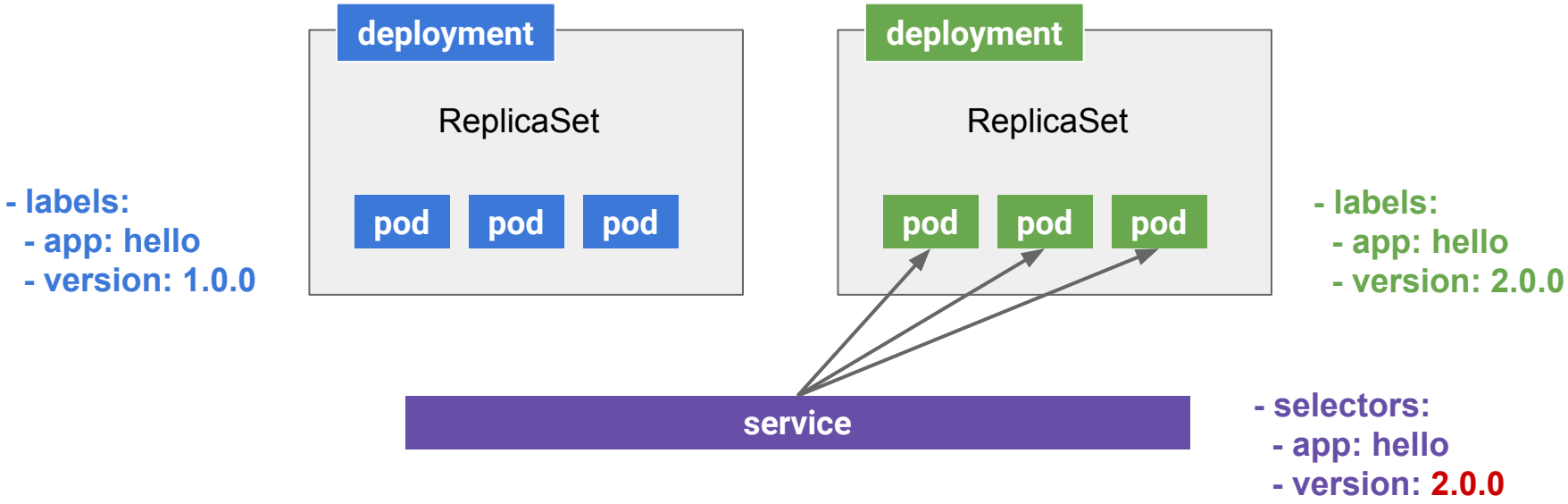
A Blue-Green deployment uses the service label selector to switch all traffic from one deployment to another



First you bring up and test your new deployment without live traffic



When you want to make that version live, change the service label selector, which switches all traffic



Lab