



StackSets

Simplifying application
management in Kubernetes



ScaleUp 360°

November 28th 2019



SCALEUP³⁶⁰

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\$ whoami



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“EUROPE’S LEADING ONLINE FASHION PLATFORM”

DAMEN

HERREN

KINDER



DE | EN

Anmelden

Wunschzettel

Warenkorb

Get the Look

Neu

Bekleidung

Schuhe

Sport

Accessoires

Pflege


Premium

Marken

Sale %

Suche

Q



Get the Look

Perfekt kombiniert von Mode-Kennern: Hol dir frische Outfit-Ideen für die neue Saison und jeden Anlass.

Alle Styles


Classic

Casual

Streetwear

Persönliches Styling

Für dich ausgewählt



s/outfits/ZK2Gy46dSDW

WE BRING FASHION TO PEOPLE IN 17 COUNTRIES

17 markets

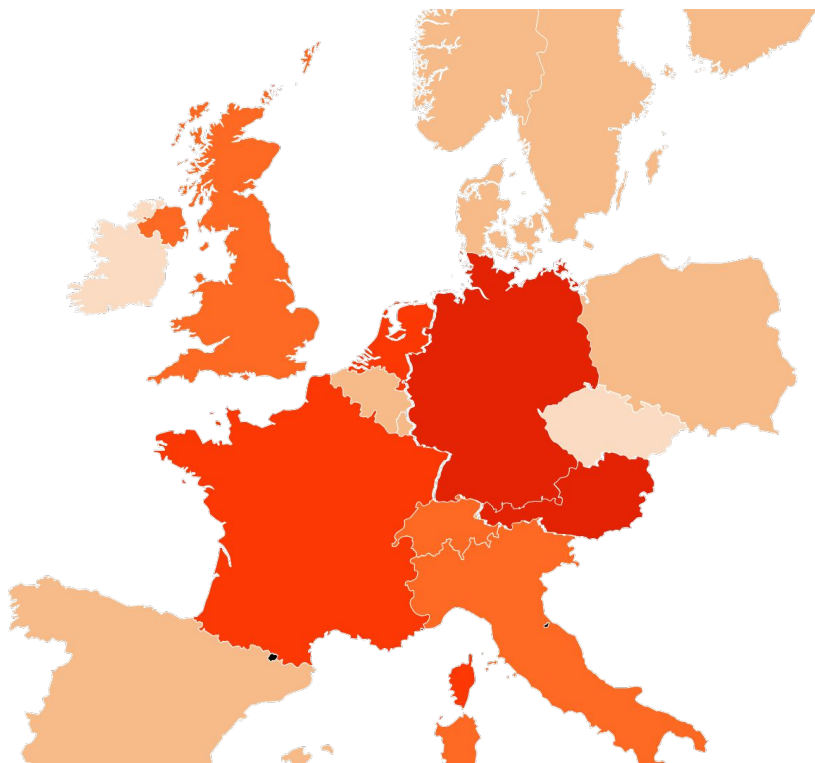
7 fulfillment centers

26 million active customers

5.4 billion € revenue 2018

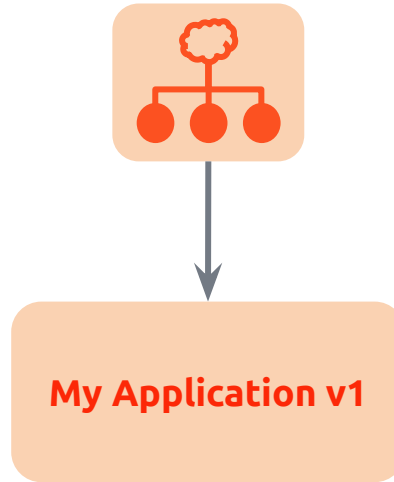
250 million visits per month

15,000 employees in Europe



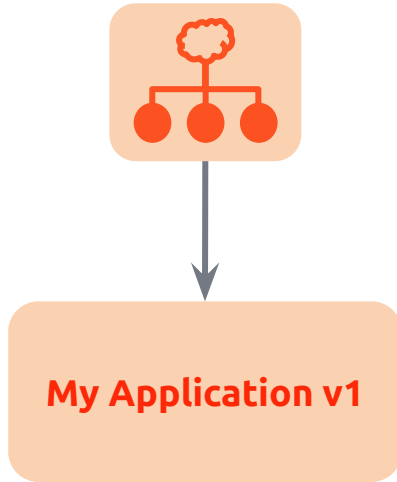
DEPLOYING TO PRODUCTION

`https://my-application.io`

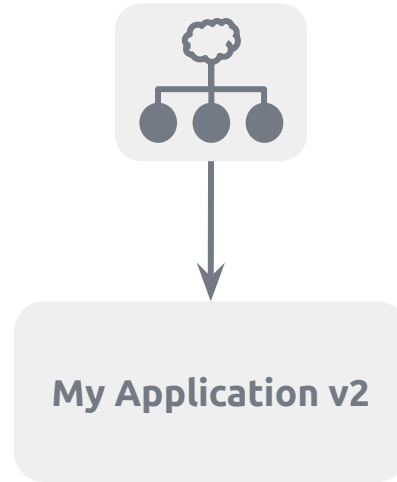


DEPLOYING TO PRODUCTION

`https://my-application.io`



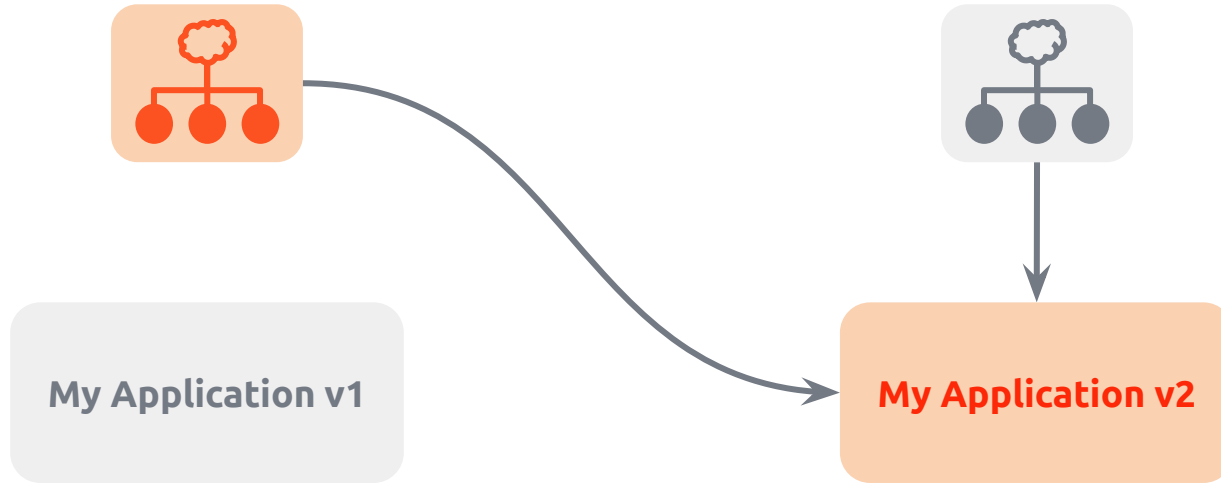
`https://preview-v2.my-application.io`



DEPLOYING TO PRODUCTION (BLUE/GREEN)

`https://my-application.io`

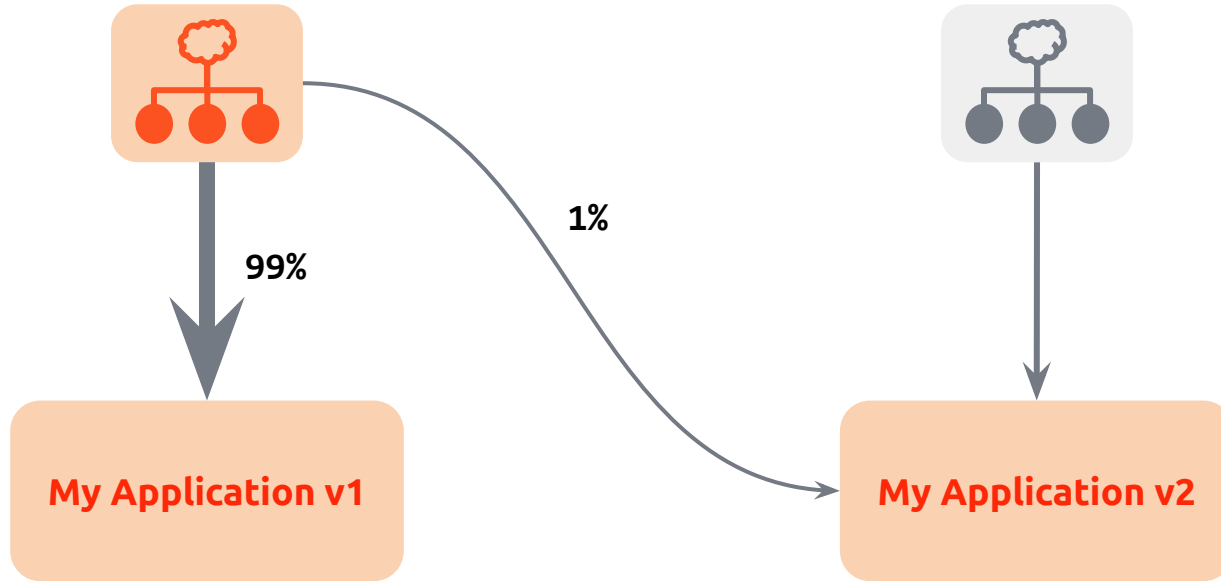
`https://preview-v2.my-application.io`



DEPLOYING TO PRODUCTION (TRAFFIC SWITCHING)

`https://my-application.io`

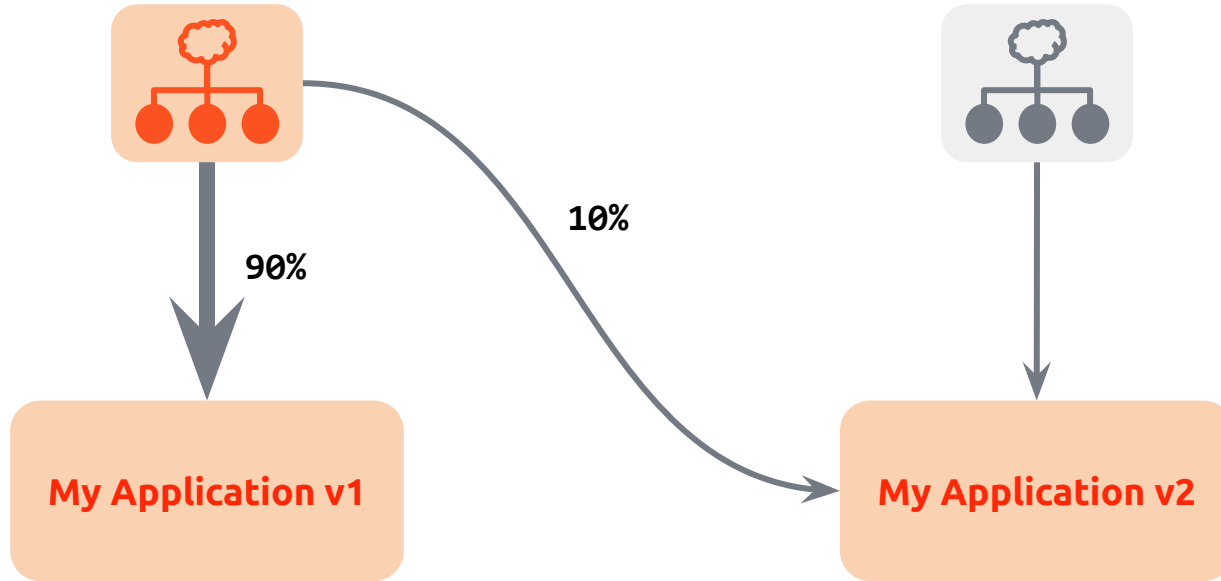
`https://preview-v2.my-application.io`



DEPLOYING TO PRODUCTION (TRAFFIC SWITCHING)

`https://my-application.io`

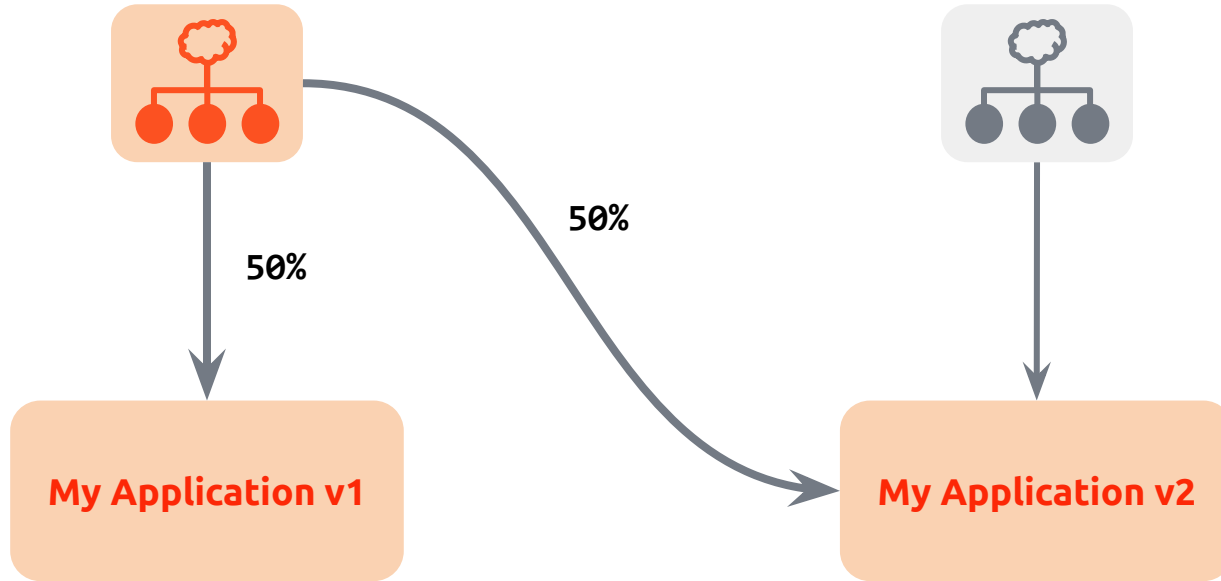
`https://preview-v2.my-application.io`



DEPLOYING TO PRODUCTION (TRAFFIC SWITCHING)

`https://my-application.io`

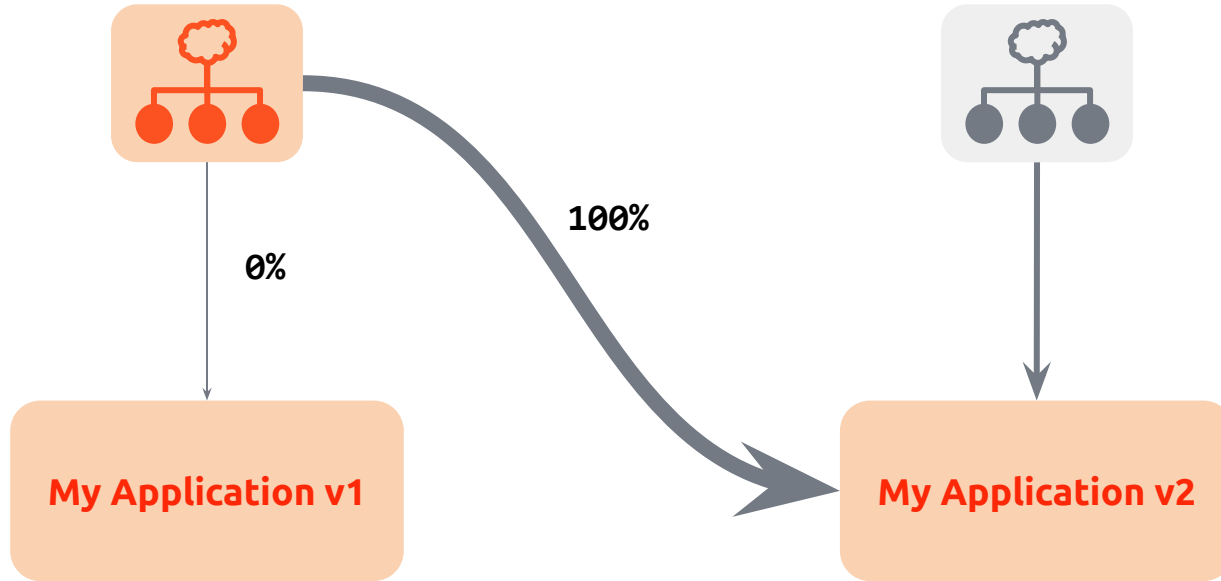
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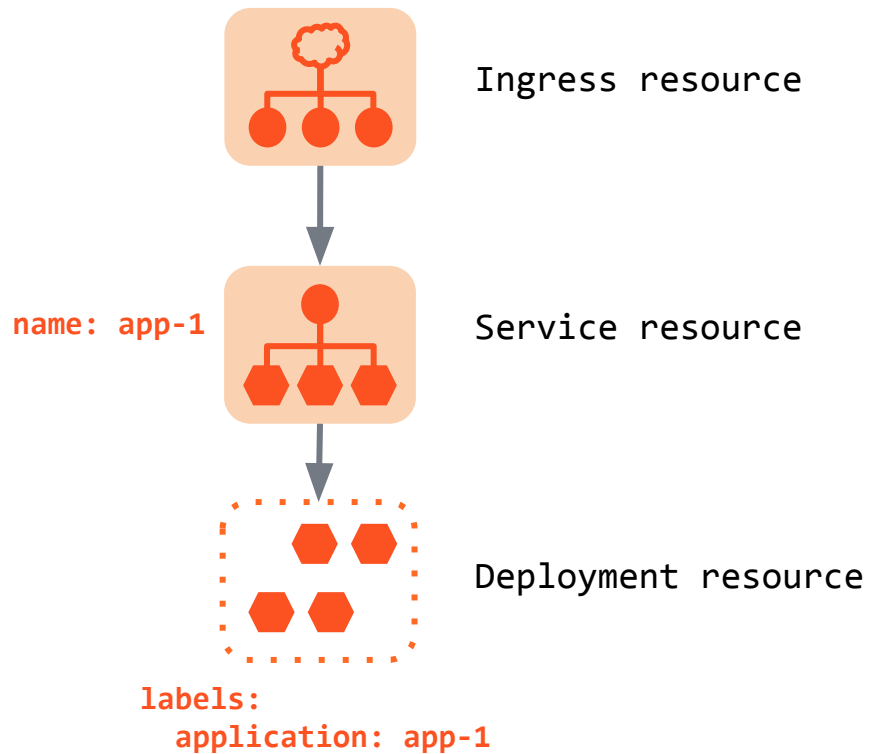
DEPLOYING TO PRODUCTION (TRAFFIC SWITCHING)

`https://my-application.io`

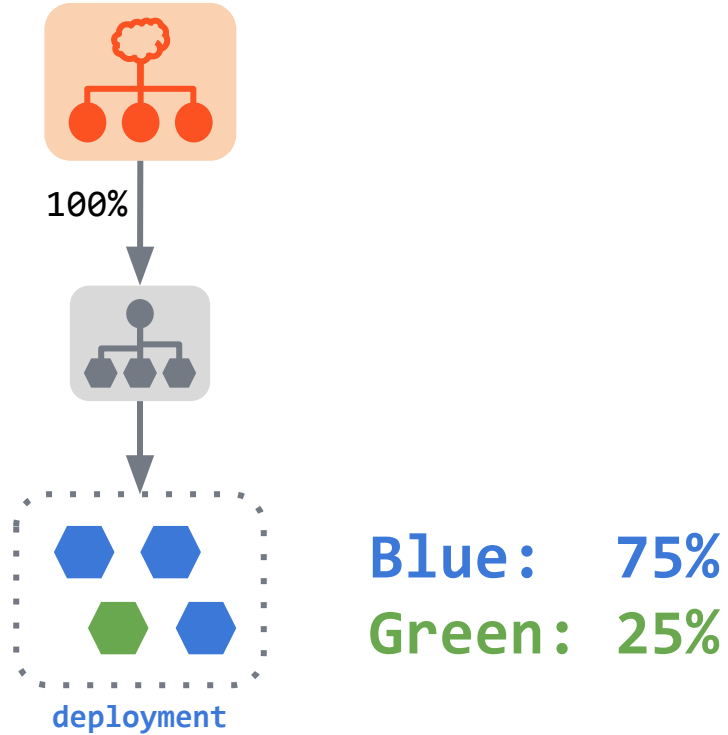
`https://preview-v2.my-application.io`



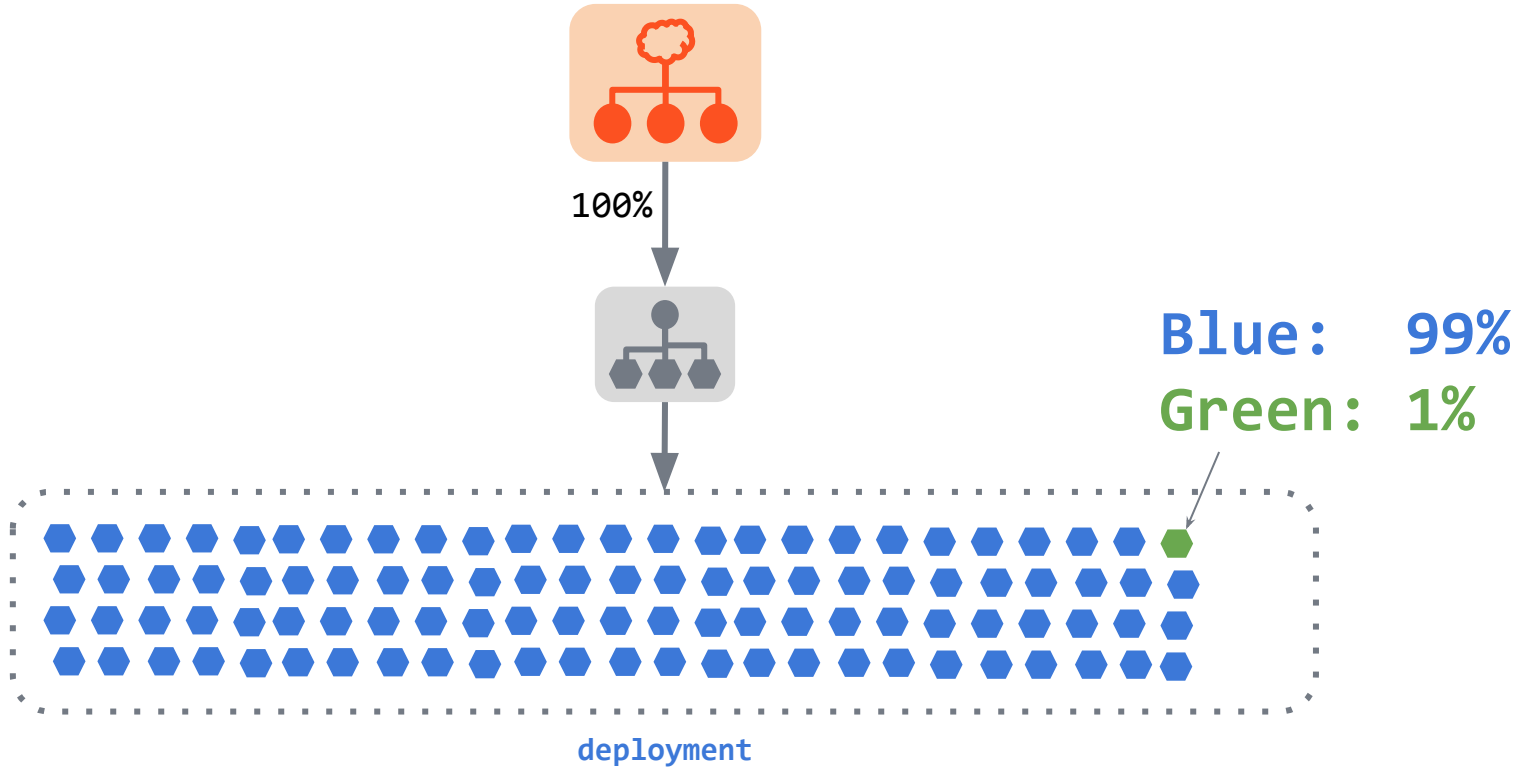
APPLICATION STACK IN KUBERNETES



TRAFFIC SWITCHING ROLLING UPDATE DEPLOYMENT



TRAFFIC SWITCHING ROLLING UPDATE DEPLOYMENT



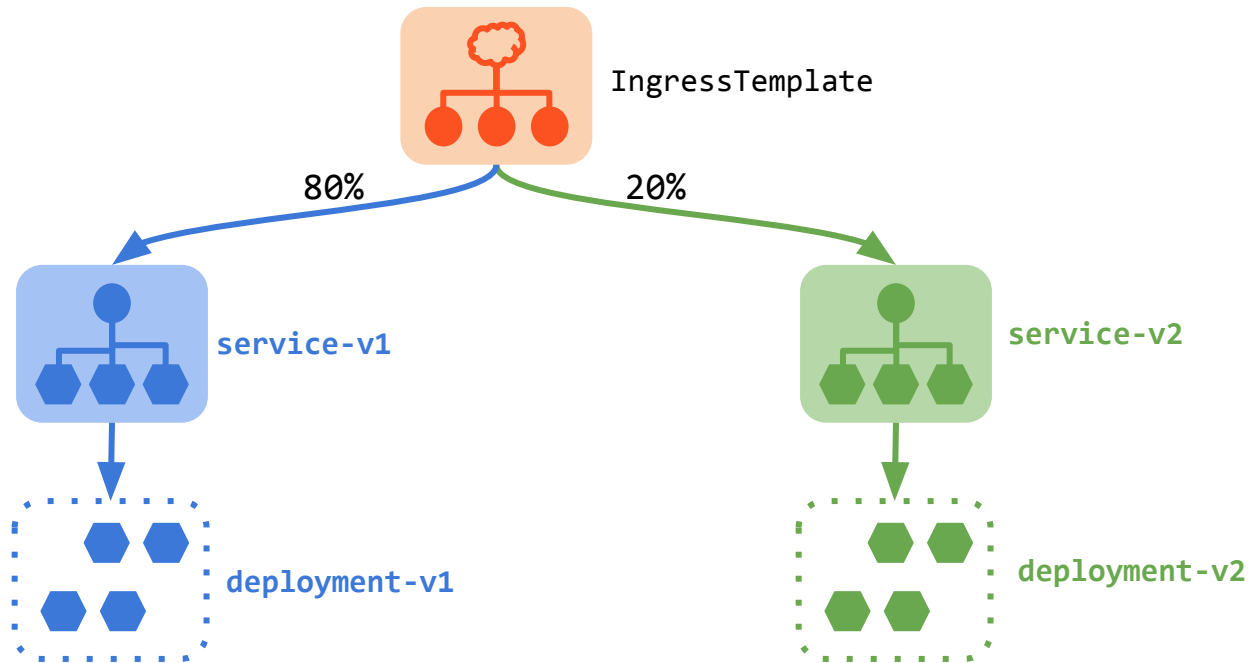
SKIPPER TRAFFIC SUPPORT

```
apiVersion: extensions/v1beta1
kind: Ingress
metadata:
  name: my-app
  annotations:
    zalando.org/backend-weights: |
      {"my-app-v1": 90, "my-app-v2": 10}
spec:
  rules:
  - host: my-app.io
    ...
```

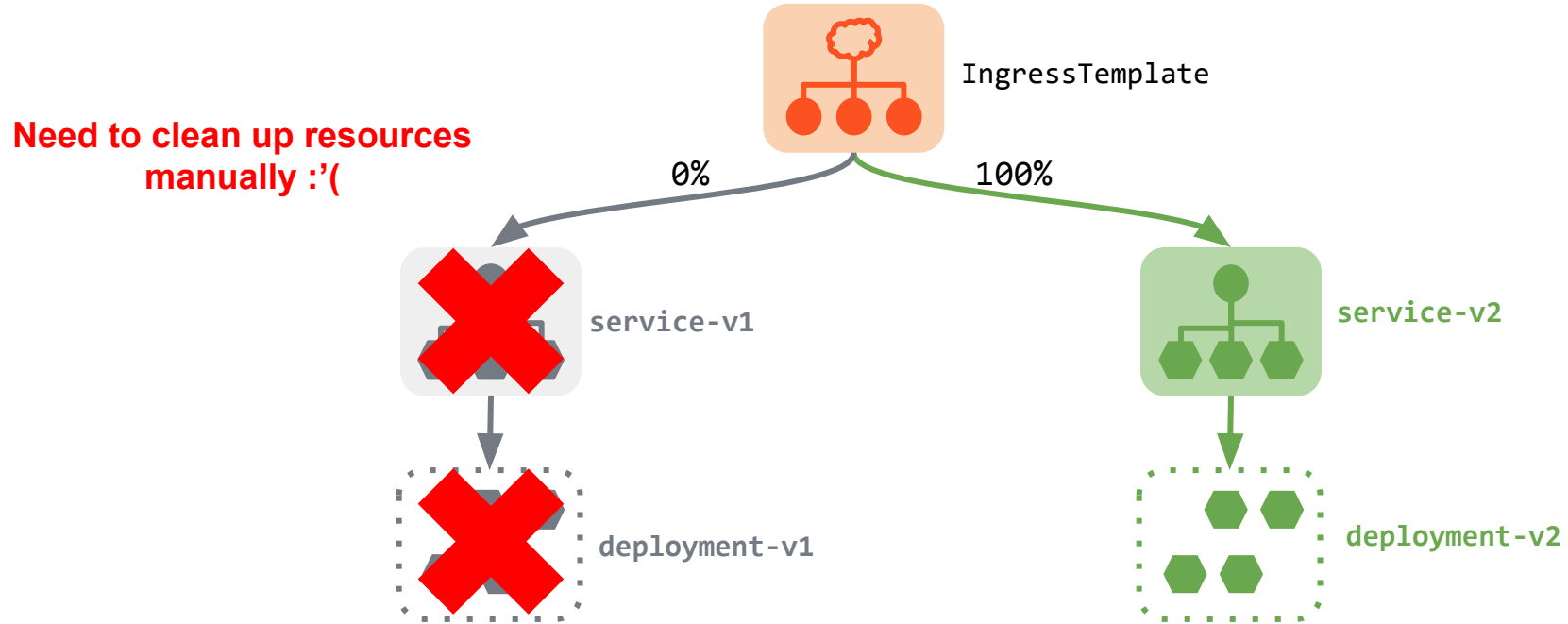


github.com/zalando/skipper

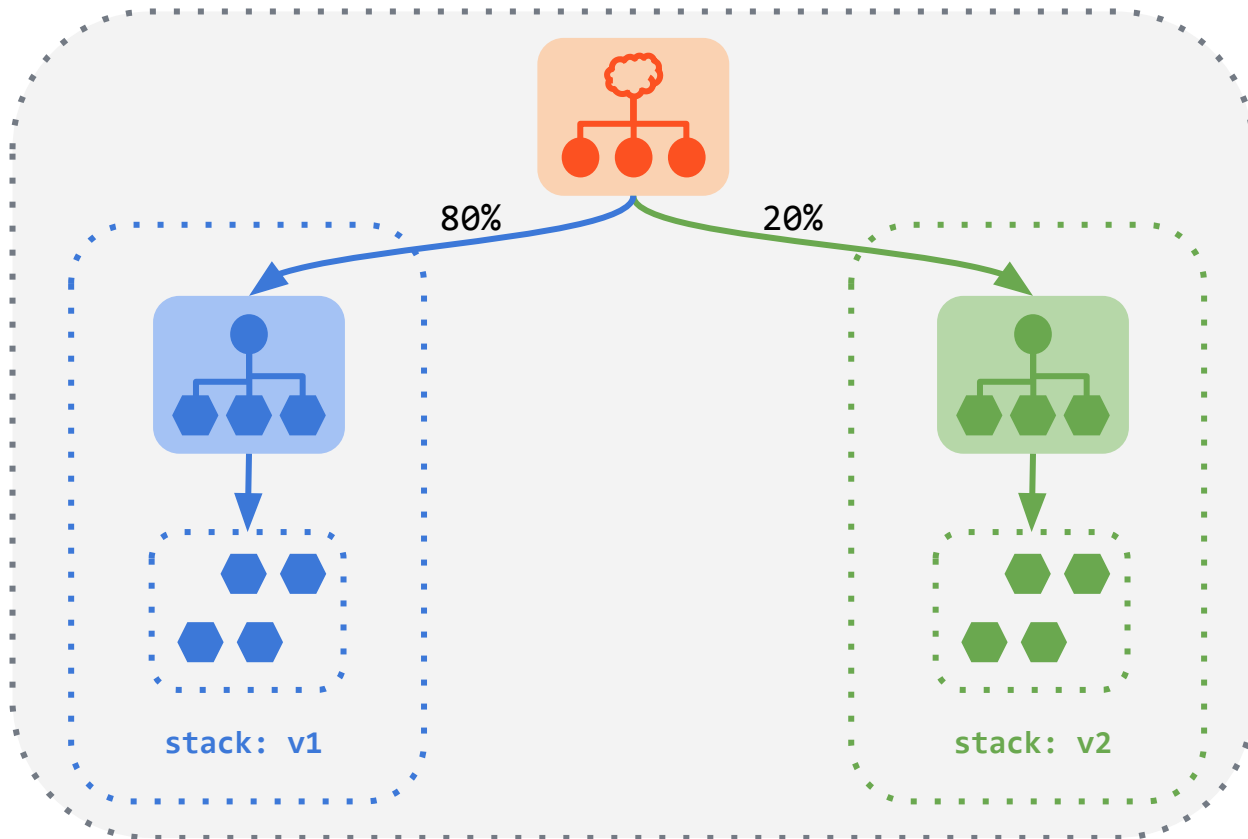
MANUAL TRAFFIC SWITCHING BLUE/GREEN DEPLOYMENT



MANUAL TRAFFIC SWITCHING BLUE/GREEN DEPLOYMENT



TRAFFIC SWITCHING BLUE/GREEN DEPLOYMENT (StackSet)



STACKSET DEFINITION

```
apiVersion: zalando.org/v1
kind: StackSet
metadata:
  name: my-app
spec:
  ingress:
    host: [my-application.io]
  stackTemplate:
    spec:
      version: v1
    podTemplate:
      spec:
        containers:
          ...
```

github.com/zalando-incubator/stackset-controller

DEMO

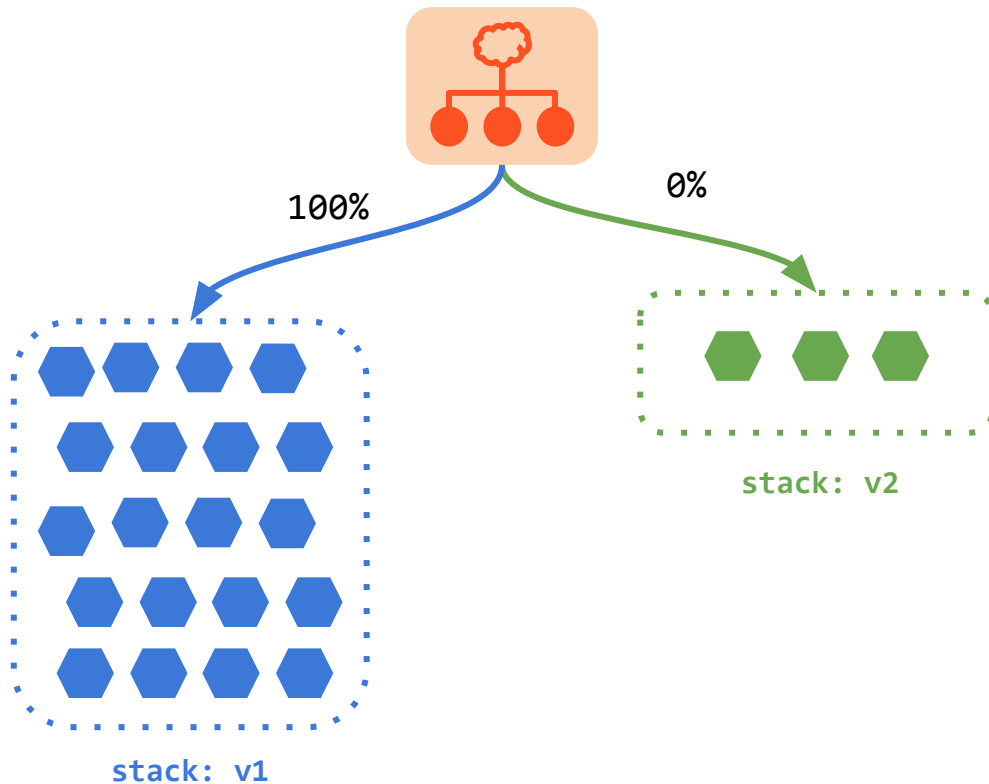




ADDITIONAL FEATURES

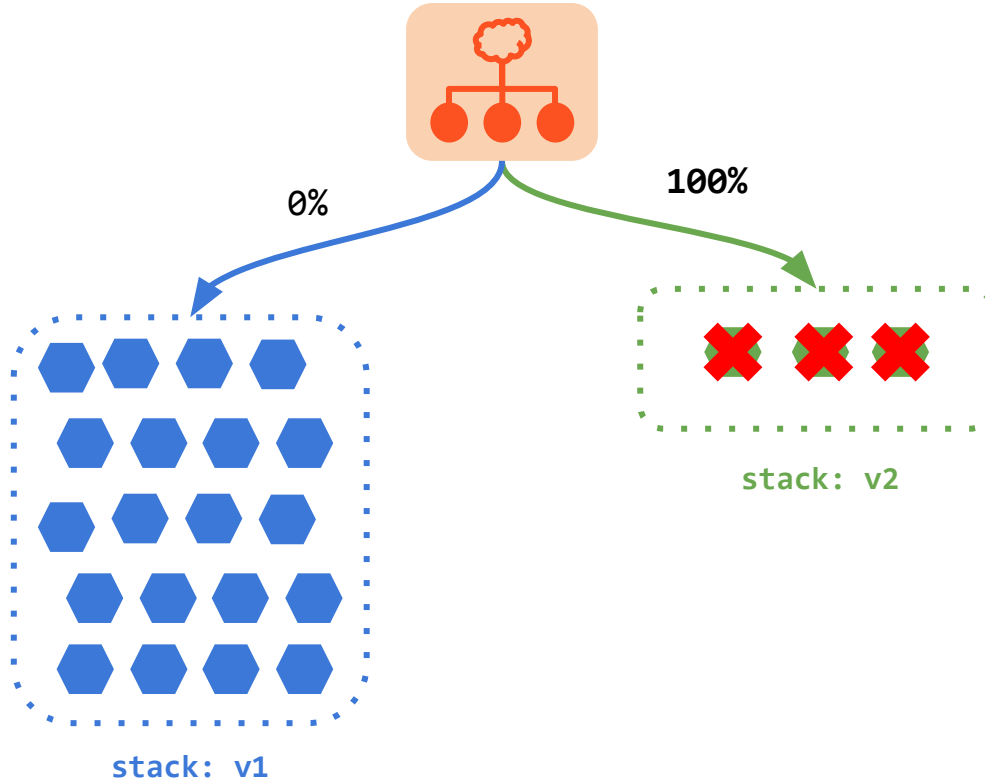
PRESCALE STACKS

HPA:
minReplicas: 3
maxReplicas: 30



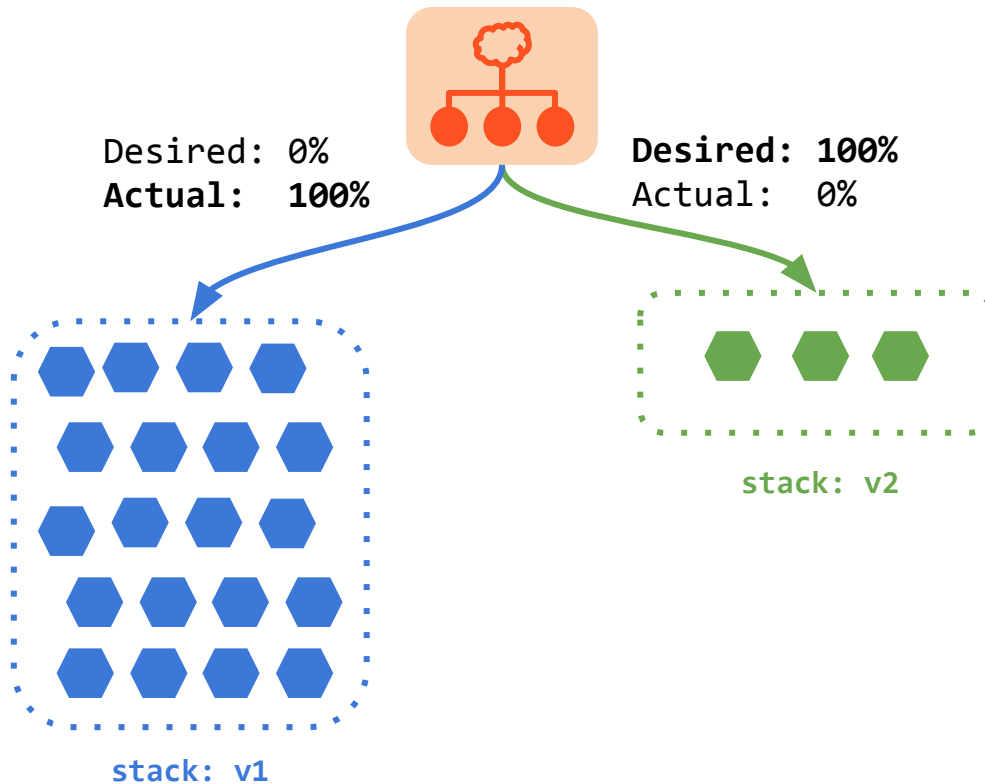
PRESCALE STACKS

HPA:
minReplicas: 3
maxReplicas: 30



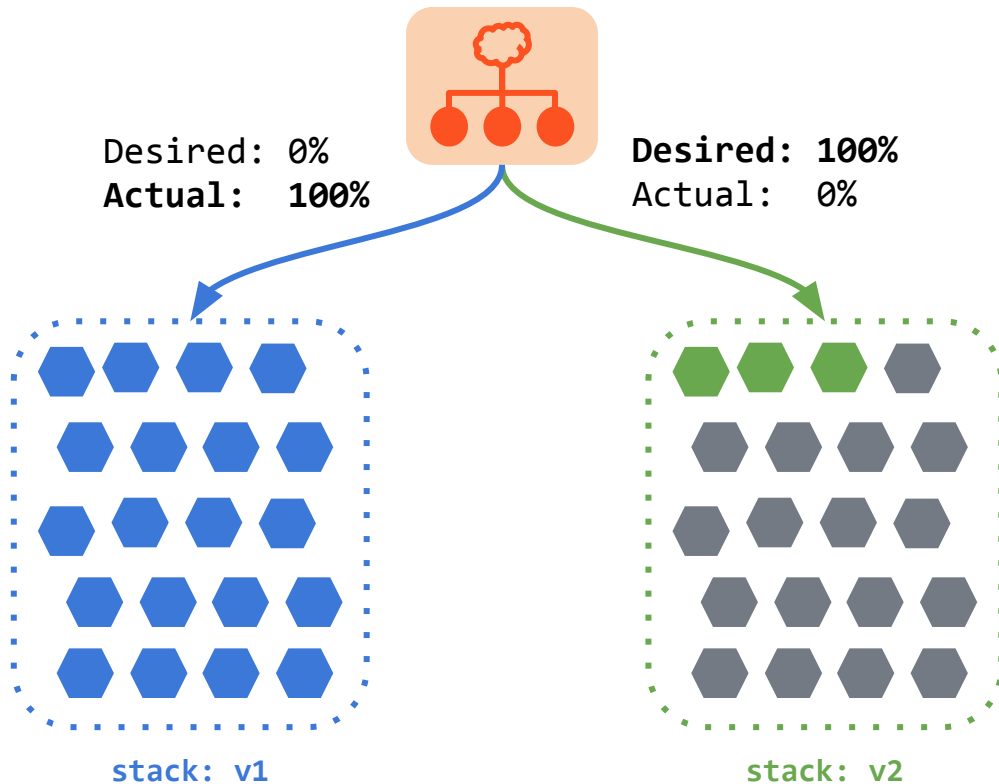
PRESCALE STACKS

HPA:
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maxReplicas: 30

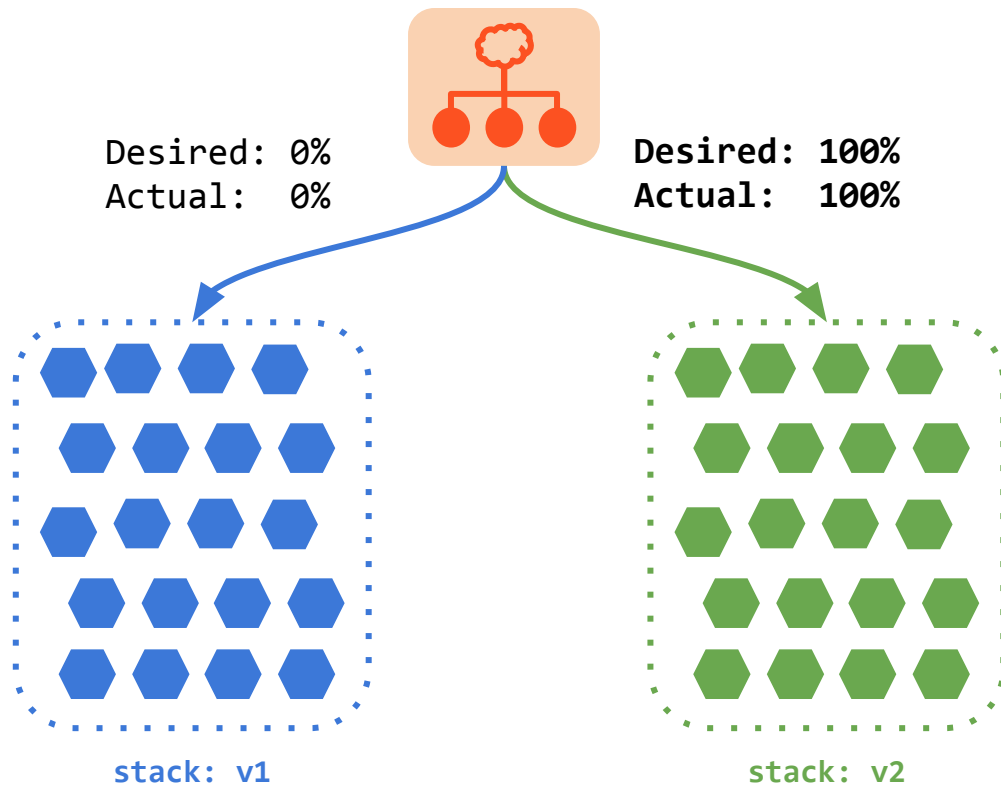


PRESCALE STACKS

HPA:
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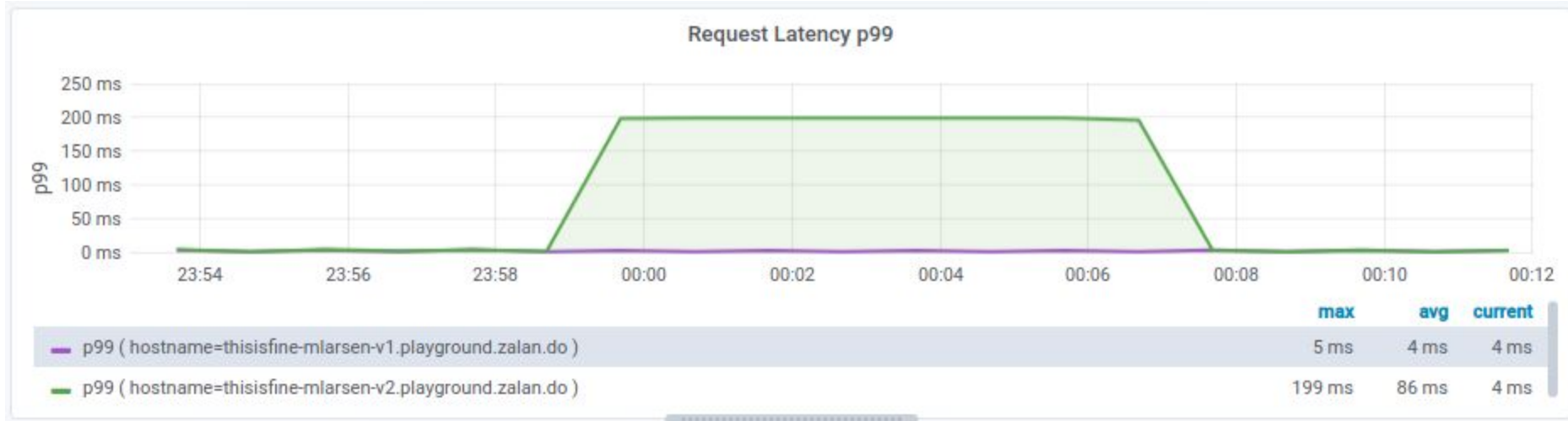
PRESCALE STACKS



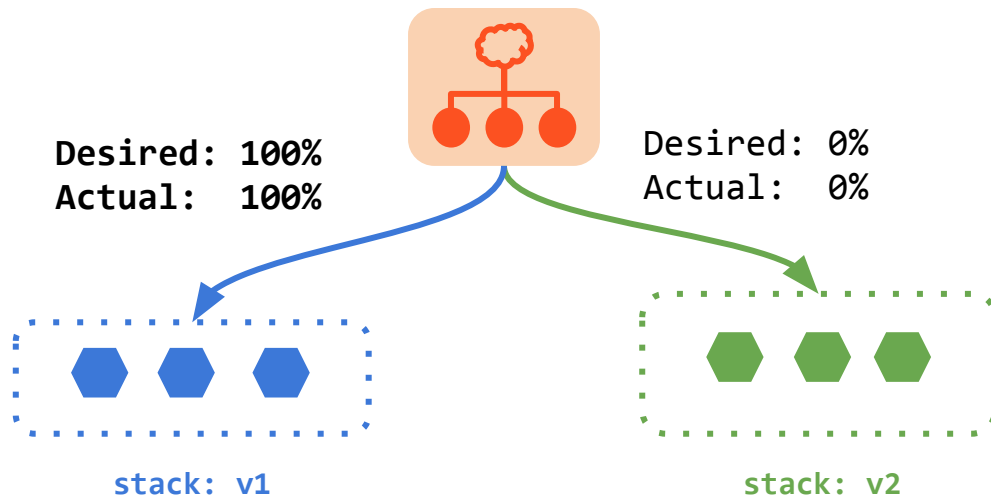


GRADUAL DEPLOYMENTS (AUTOMATIC TRAFFIC SWITCHING)

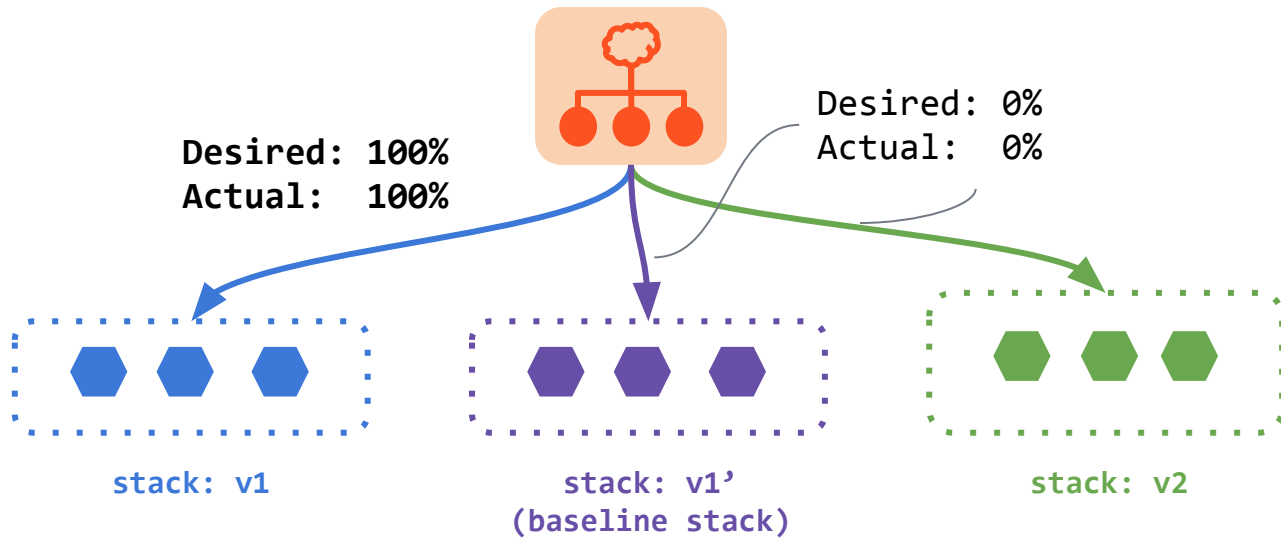
INTEGRATE WITH APPLICATION METRICS



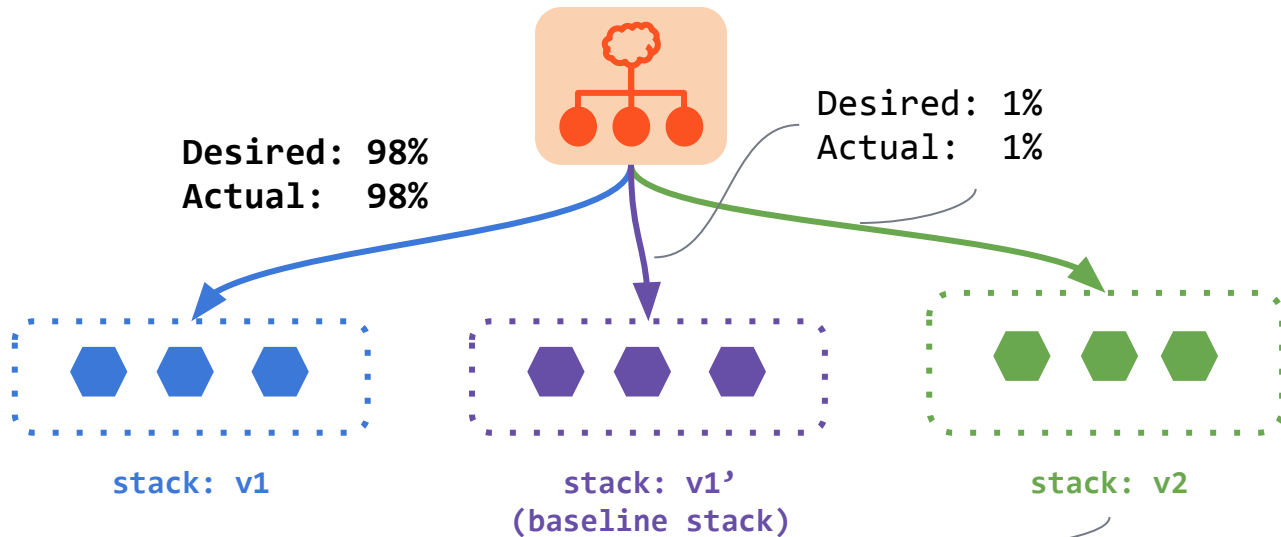
GRADUAL DEPLOYMENTS



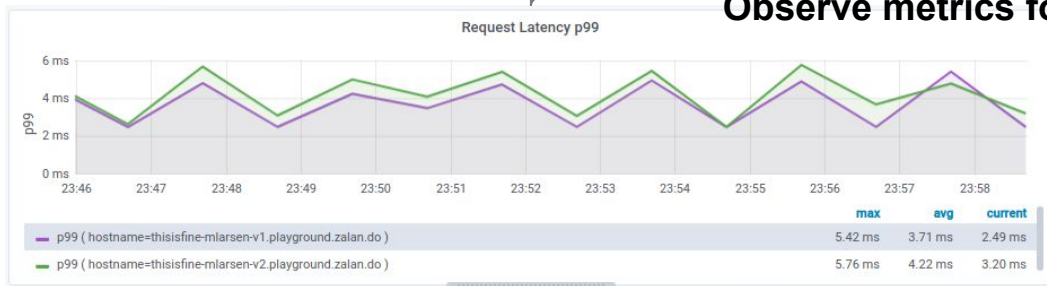
GRADUAL DEPLOYMENTS



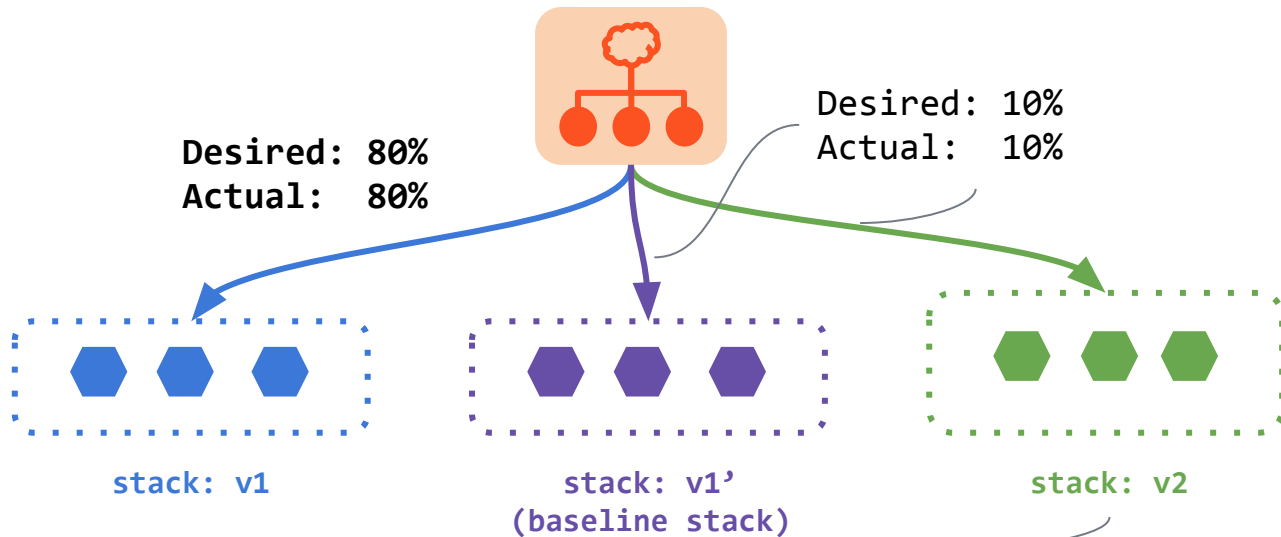
GRADUAL DEPLOYMENTS



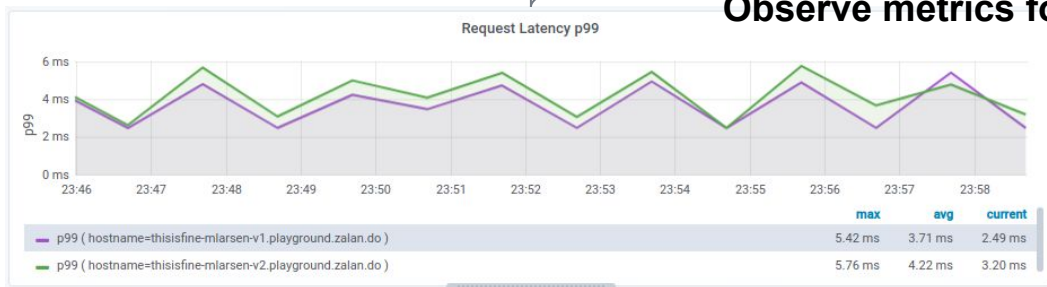
Observe metrics for the two stacks



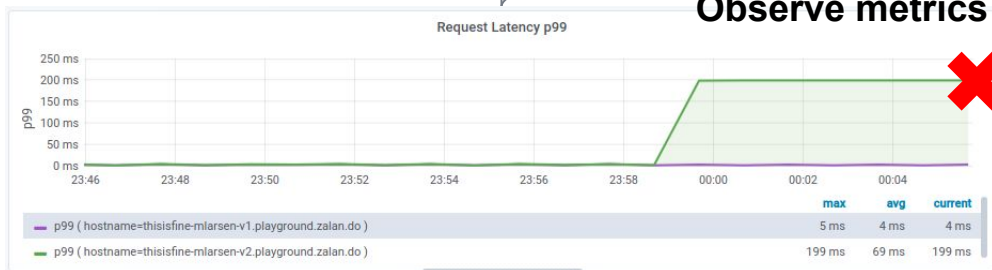
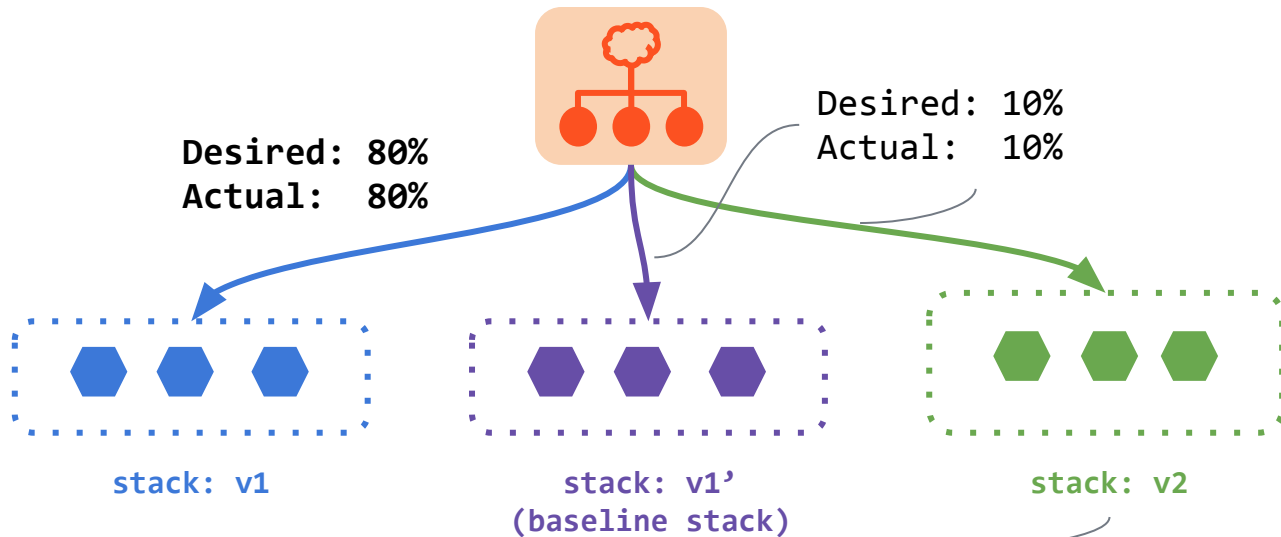
GRADUAL DEPLOYMENTS



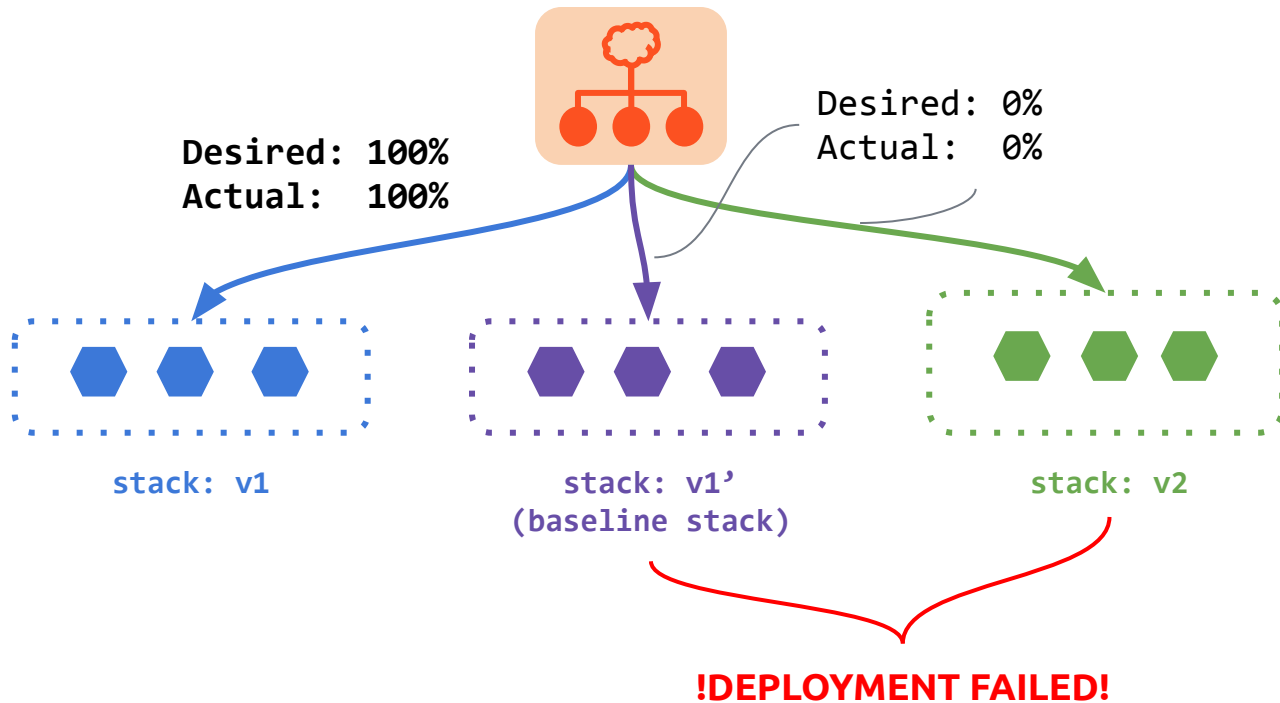
Observe metrics for the two stacks



GRADUAL DEPLOYMENTS



GRADUAL DEPLOYMENTS



OPEN SOURCE

StackSet Controller

github.com/zalando-incubator/stackset-controller

AWS ALB Ingress controller

github.com/zalando-incubator/kube-ingress-aws-controller

Skipper HTTP Router & Ingress controller

github.com/zalando/skipper

External DNS

github.com/kubernetes-incubator/external-dns





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PLATFORM INFRASTRUCTURE

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Illustrations by [@01k](#), [@kcgreenn](#), [@ntakayama](#)



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