



Progressive Delivery with Argo Rollouts

at #SCaLE22x

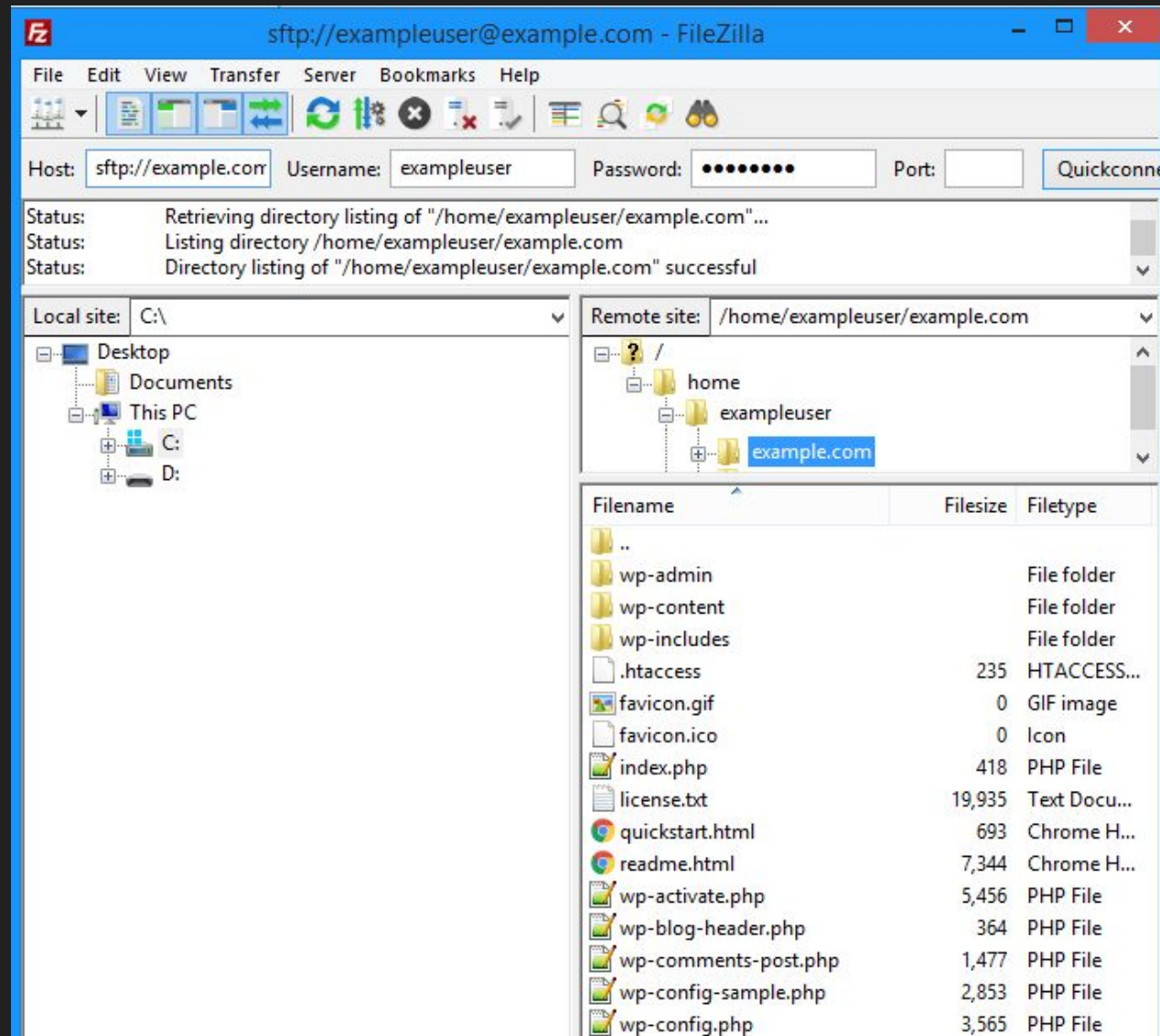
red.ht/scale-rollouts

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Dev. Advocate
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Head of Community
Akuity

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Dev. Advocate & TMM
Red Hat

How it started...



Attendee Survey

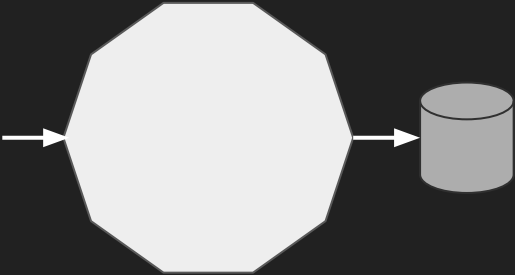
Do you feel comfortable using:

- Git
- Docker or podman
- Kubernetes
- Jenkins
- ArgoCD
- "GitOps"
- Blue/Green deployments
- Canary deployments

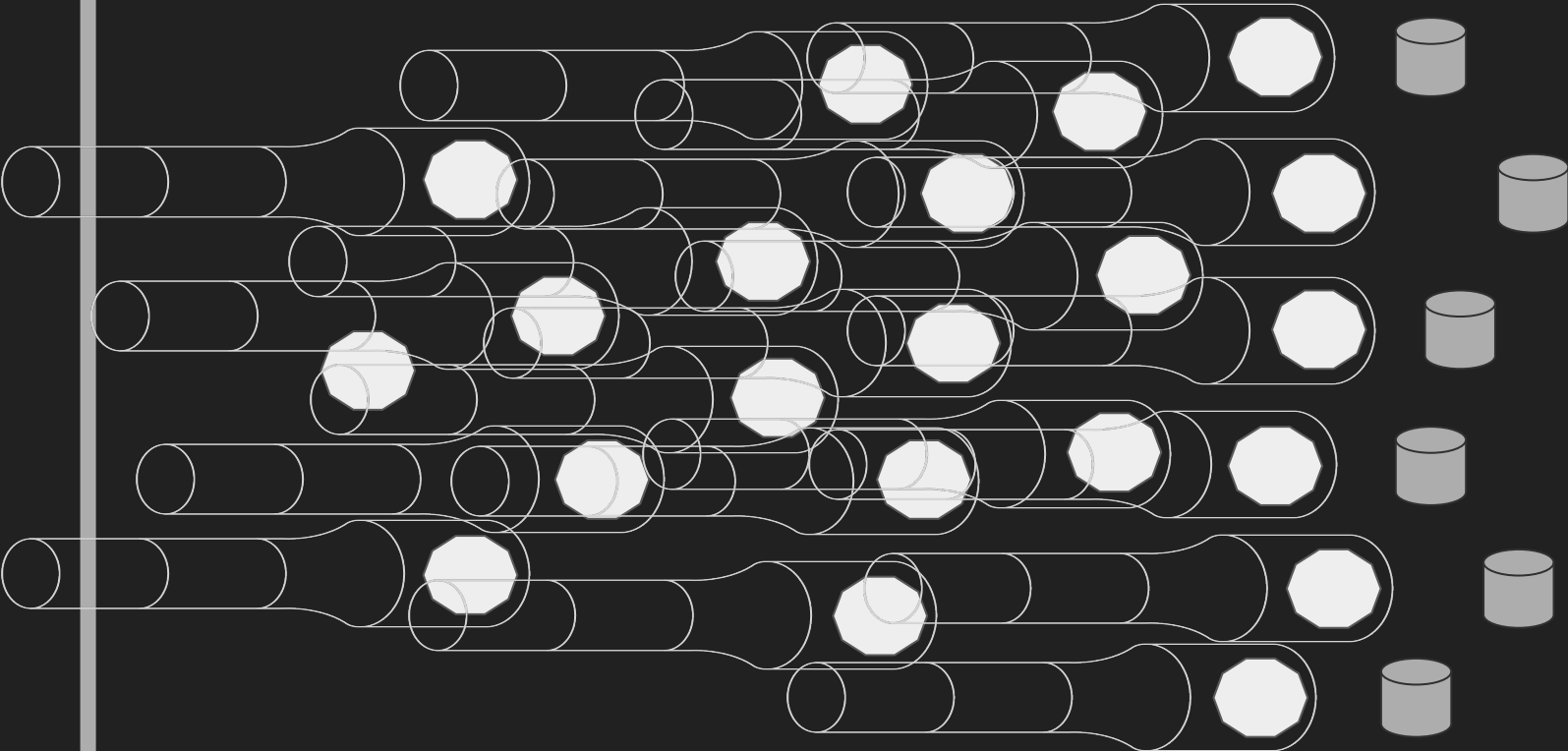
CI / CD



Every 4 months

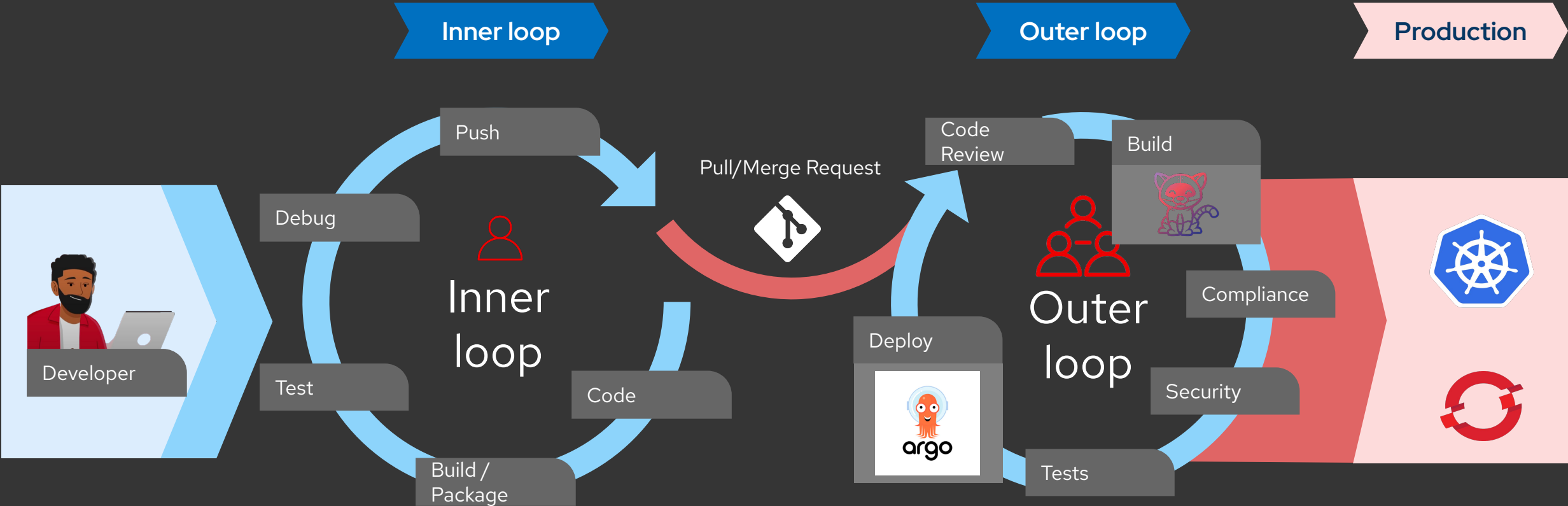


Every week/day/hour



OPENSIFT

Continuous Developer Flow



**WHEN YOU IMPLEMENTED A NEW
FEATURE IN YOUR SYSTEM**



What is GitOps?



Git is the
single source
of truth

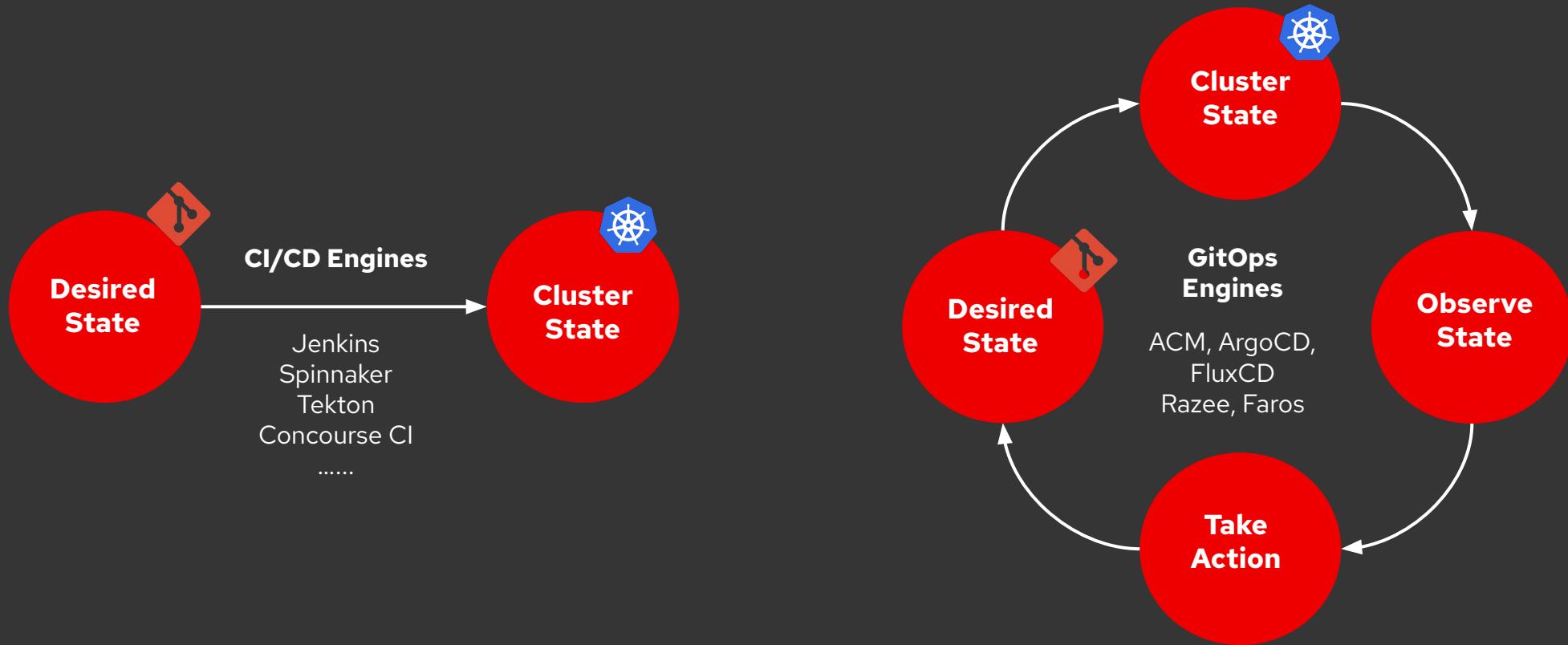


Treat
everything as
code



Operations
through Git
workflows

CI/CD versus GitOps



Progressive Delivery



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What is Progressive Delivery?

- No Big Bang
- Deploy \neq Release
- Metrics
- Subset of Users

Why Progressive Delivery?

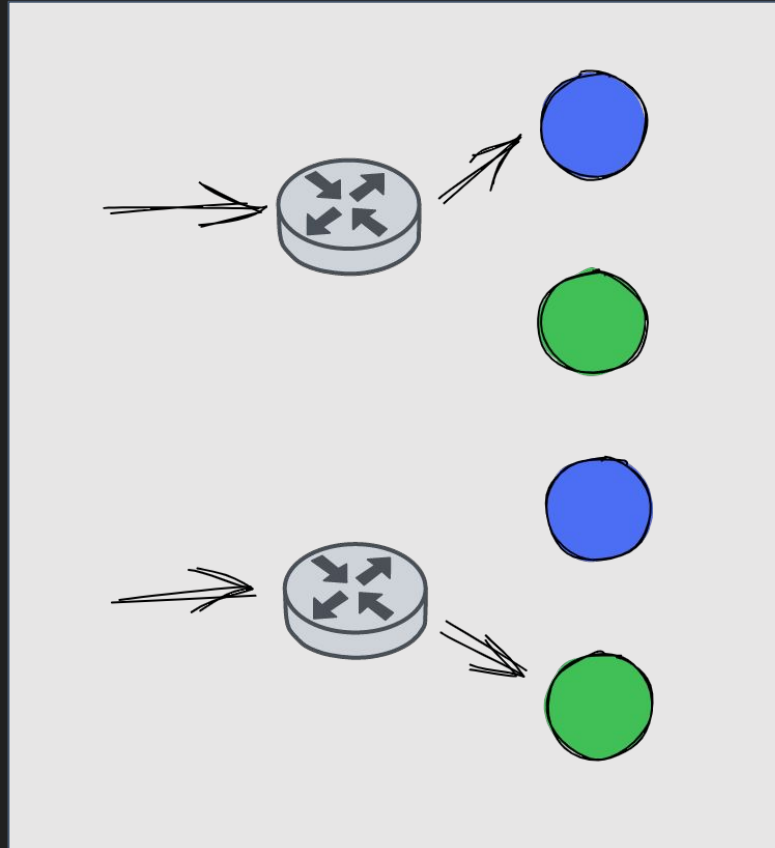
- Decreases Downtime
- Limits the Tragedy
- Deploy & Release to Production faster
- Less mocking or setting up unreliable 'fake' services

Delivery Techniques



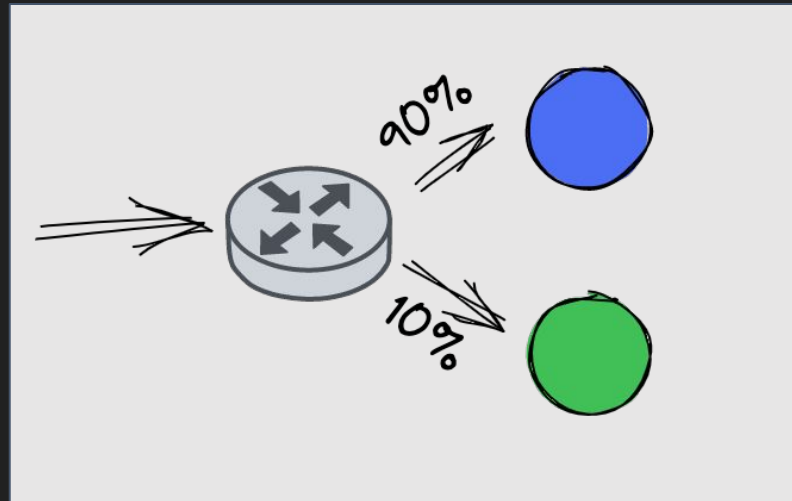
Blue Green Deployment

- All Or Nothing
- Quick Rollback



Canary Releases

- Small Percentage
- Increase depending on success metrics





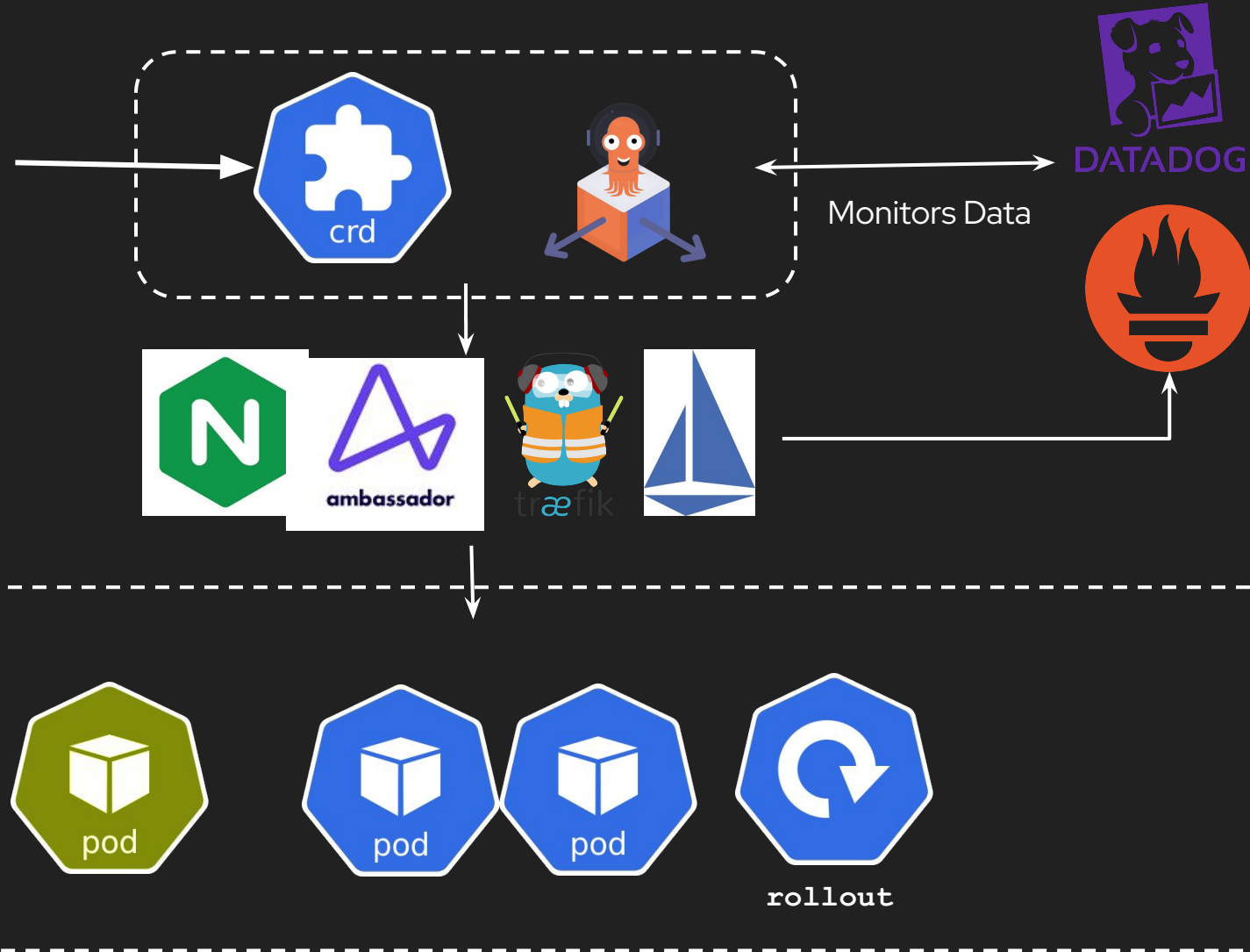
Argo Rollouts

Argo Rollouts

- Rollouts is a drop-in replacement for Kubernetes Deployment with advanced capabilities for Progressive Delivery
- Supports two types of deployment strategies:
 - Blue-Green
 - Canary
- Integrates with a variety of traffic management solutions to shape traffic
- Automates deployment and rollbacks with advanced analysis capabilities

Argo Rollouts

ArgoCD detects change



Rolling out automatically

```
apiVersion: argoproj.io/v1alpha1
kind: Rollout ←
metadata:
  name: rollouts-demo
  labels:
    app: rollouts-demo
spec: ←
  strategy:
    canary:
      steps:
        - setWeight: 20
        - pause:
            duration: "1m"
        - setWeight: 50
        - pause:
            duration: "2m"
      canaryService: rollouts-demo-canary
      stableService: rollouts-demo-backend
      trafficRouting:
        istio:
          virtualService:
            name: rollout-vsfc
            routes:
              - primary ←
  ...
```



"Smart" Progressive Delivery Based on Metrics



Metrics Based Rollouts

```
strategy:

  canary:
    analysis:
      args:
        - name: service-name
          value:
rollouts-demo-canary.canary.svc.cluster.local
      templates:
        - templateName: success-rate
      canaryService: rollouts-demo-canary
      stableService: rollouts-demo-stable
      trafficRouting:
        istio:
          virtualService:
            name: rollout-vsvc
            routes:
              - primary

    steps:
      - setWeight: 30
      - pause: { duration: 20s }
      - setWeight: 40
      - pause: { duration: 10s }
      - setWeight: 60
      - pause: { duration: 10s }
      - setWeight: 80
      - pause: { duration: 5s }
      - setWeight: 90
      - pause: { duration: 5s }
      - setWeight: 100
      - pause: { duration: 5s }
```

Metrics Based Rollouts

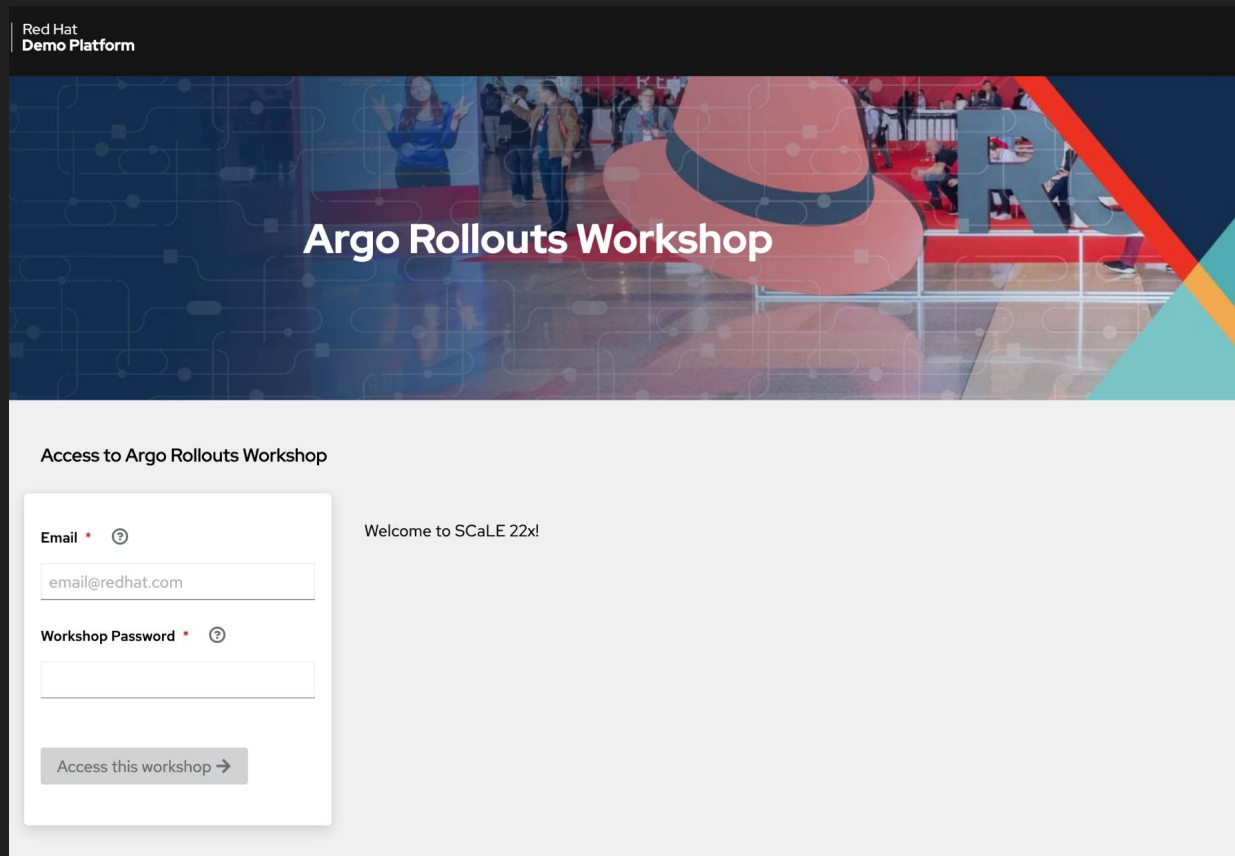
```
apiVersion: argoproj.io/v1alpha1
kind: AnalysisTemplate
metadata:
  name: success-rate ←
spec:
  args:
  - name: service-name
  metrics:
  - name: success-rate
    interval: 10s
    successCondition: len(result) == 0 || result[0] >= 0.95
    failureLimit: 2
  provider:
    prometheus:
      address: https://internal:demo@prometheus.istio-system.svc.cluster.local:9090
      query: |
        sum(irate(istio_requests_total{
          reporter="source",
          destination service=~"{{args.service-name}}",
          response_code!~"5.*"}[30s])
        )
```

Workshop

Workshop Registration

red.ht/workshop-rollout

- Provide a unique email address (addresses are not collected)
- The password is "rollout"



Red Hat
Demo Platform

Argo Rollouts Workshop

Access to Argo Rollouts Workshop

Email * ⓘ

Workshop Password * ⓘ

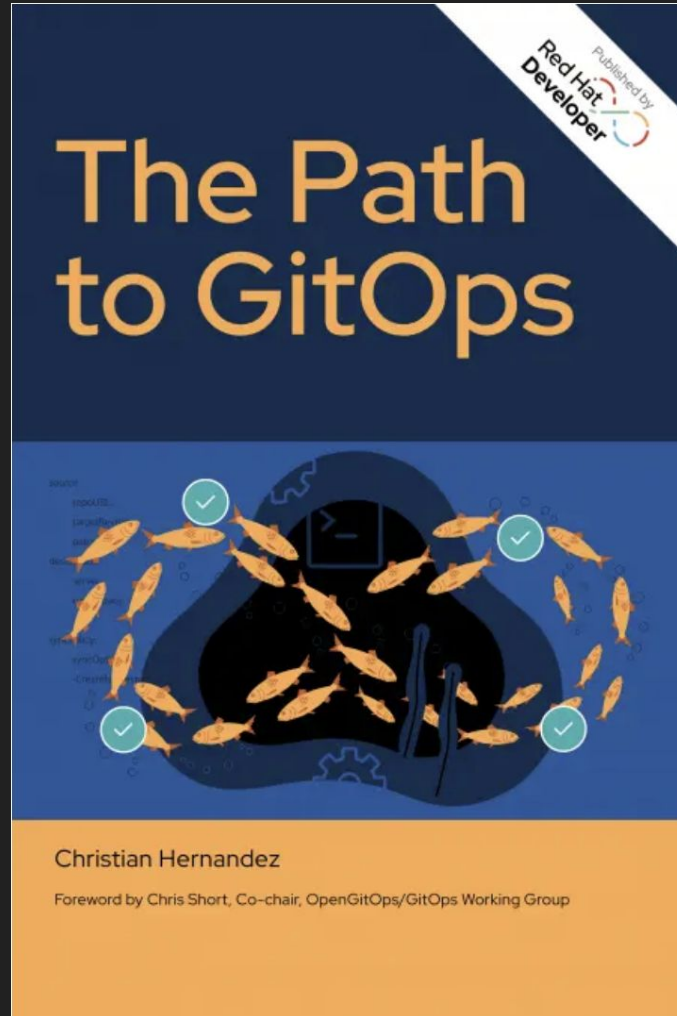
[Access this workshop →](#)

Welcome to SCaLE 22x!

WorkShop URL

Workshop content permalink:

<https://openshift demos.github.io/argo-rollouts-workshop/argo-rollouts-workshop/main/index.html>

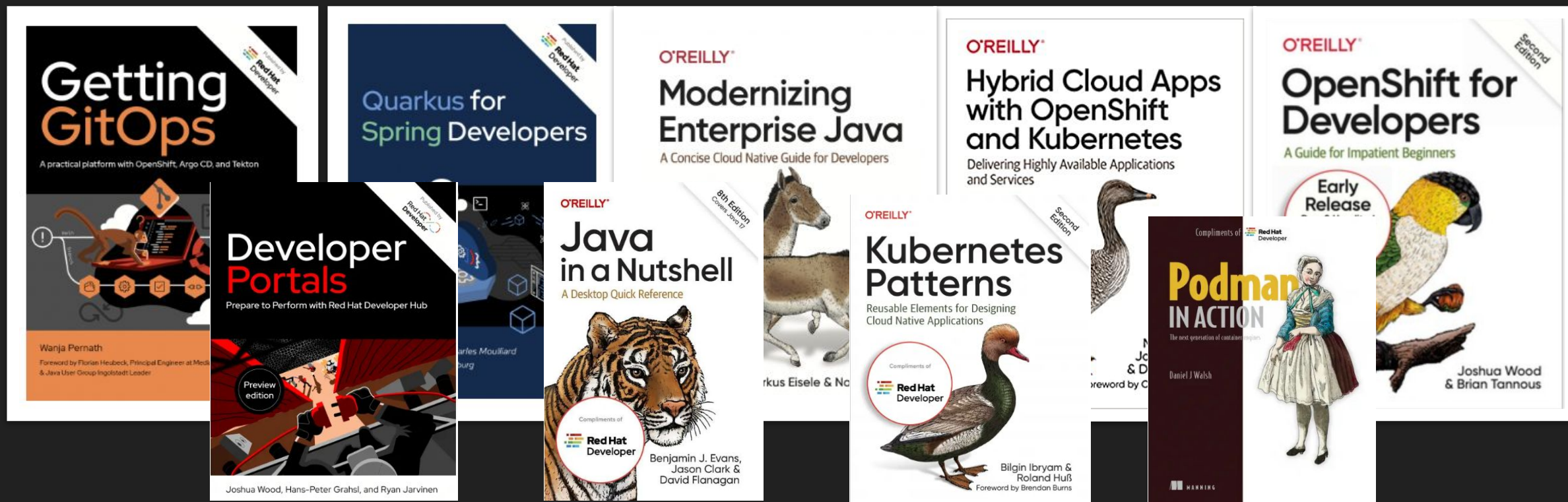


<https://developers.redhat.com/e-books/path-gitops>



Free Developer e-Books & tutorials!

developers.redhat.com/eventtutorials





Thank you!

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