PROGRESSIVE DELIVERY: INCREASING THE SPEED OF SOFTWARE DELIVERY

Adobe

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PROGRESSIVE DELIVERY

Progressive Delivery, a History…. Condensed

By Adam Zimman - August 6, 2018

JAMES GOVERNOR'S MONKCHIPS

Towards Progressive Delivery

By James Governor | @monkchips | August 6, 2018

Progressive Delivery is a term that includes deployment strategies that try to avoid the pitfalls of all-or-nothing deployment strategies

New versions being deployed do not replace existing versions but run in parallel for an amount of time receiving live production traffic, and are evaluated in terms of correctness and performance before the rollout is considered successful.

08.47 CEST

Crowdstrike identifies issue behind worldwide outage

Josh Taylor

Cybersecurity software firm Crowdstrike has posted in its support updates that it has identified the issue behind today's massive, global Windows outage.

It is an issue with "content deployment" that has since had those changes reverted and has advised a workaround for affected users.

We are still waiting for confirmation or a statement from Crowdstrike's media team. It's almost midnight in the US, so it's not clear when we might get more detail.

+ Show more

6. Template Instances should have staged deployment

**Findings:** Each Template Instance should be deployed in a staged rollout.

Mitigation: The Content Configuration System has been updated with additional deployment layers and acceptance checks

Staged deployment mitigates impact if a new Template Instance causes failures such as system crashes, false-positive detection volume spikes or performance issues. New Template Instances that have passed canary testing are to be successively promoted to wider deployment rings or rolled back if problems are detected. Each ring is designed to identify and mitigate potential issues before wider deployment. Promoting a Template Instance to the next successive ring is followed by additional bake-in time, where telemetry is gathered to determine the overall impact of the Template Instance on the endpoint.

- Avoiding downtime
- Limit the blast radius
- Shorter time from idea to production

PROGRESSIVE DELIVERY TECHNIQUES

ROLLING UPDATES
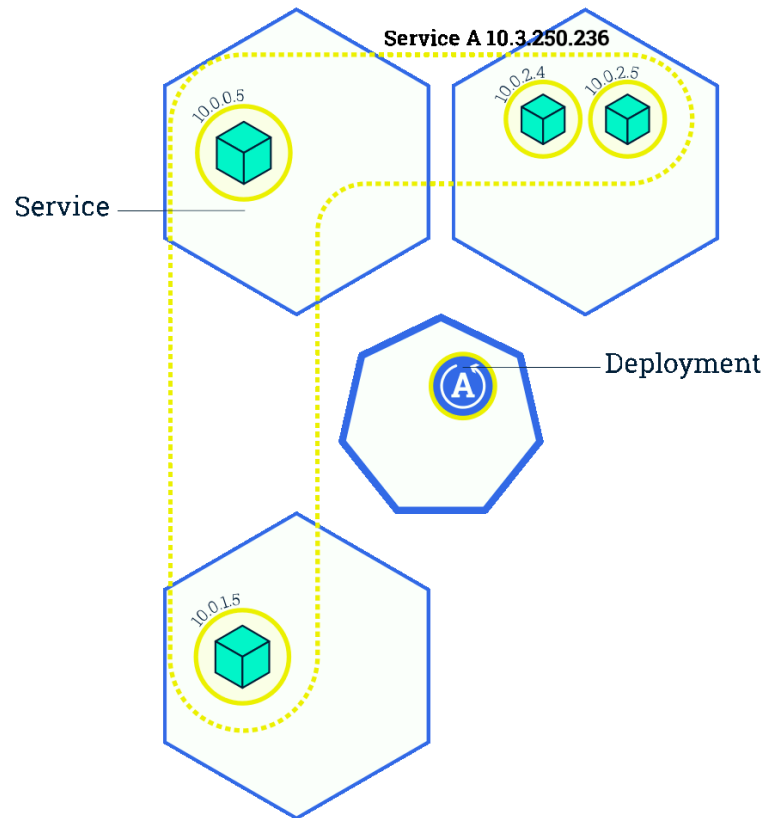
BLUE-GREEN DEPLOYMENT

v1

v2
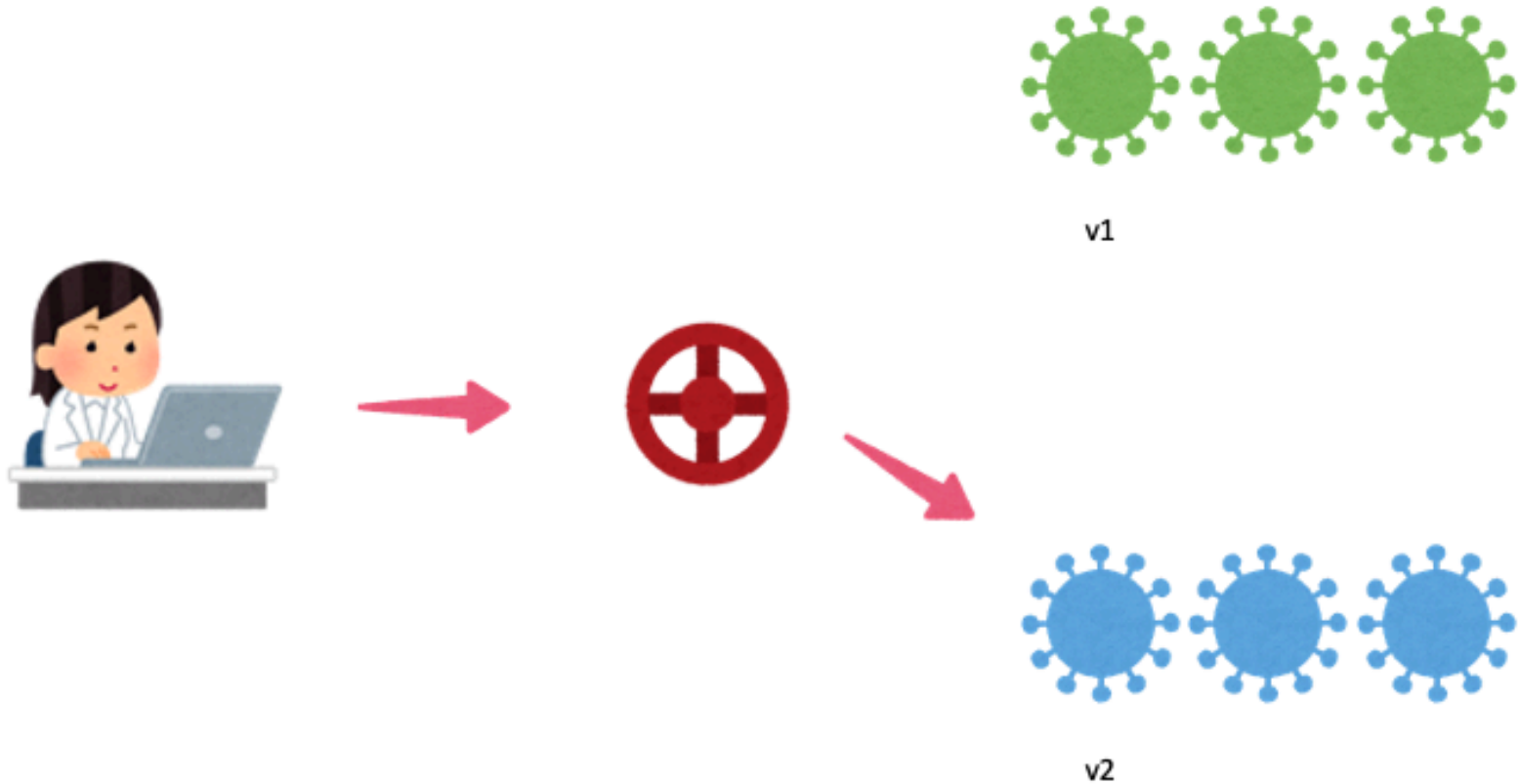
CANARY DEPLOYMENT
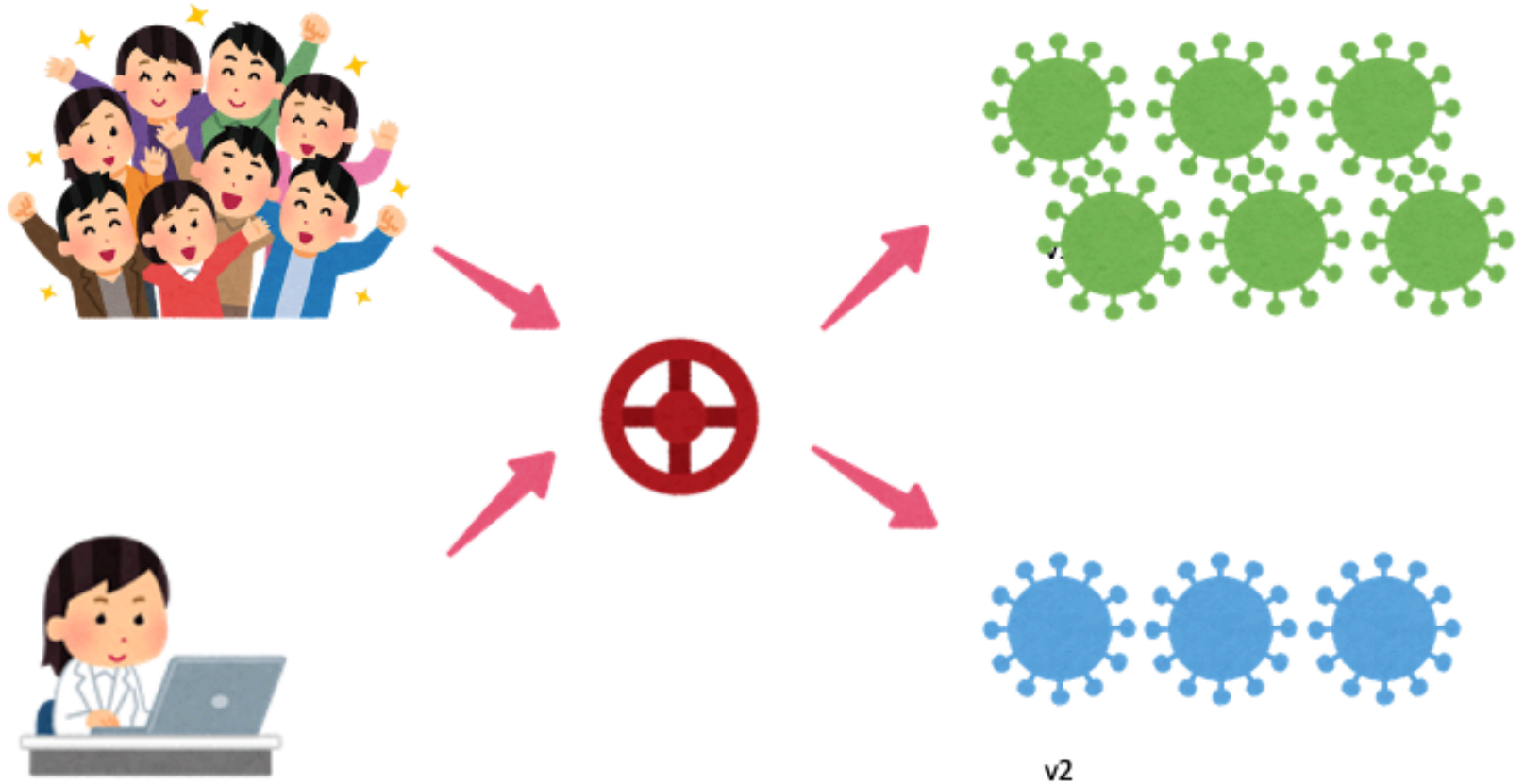
DARK LAUNCHING
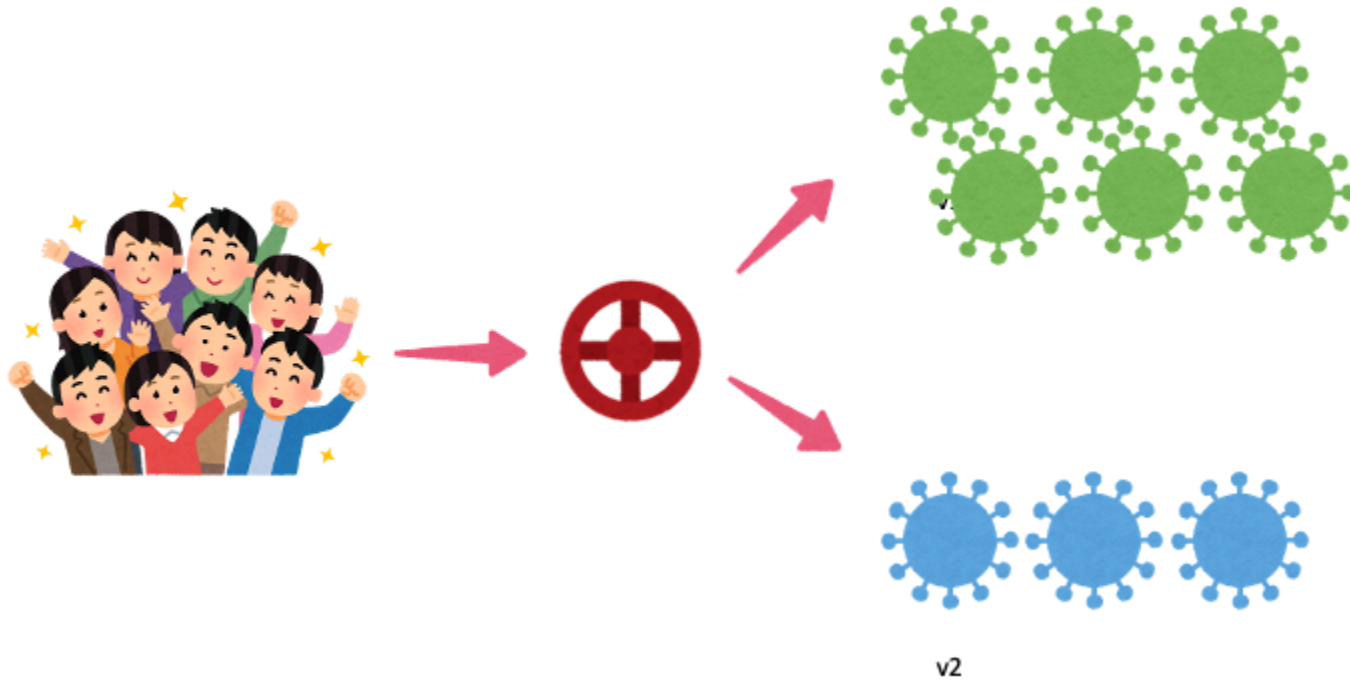
FEATURE FLAGS
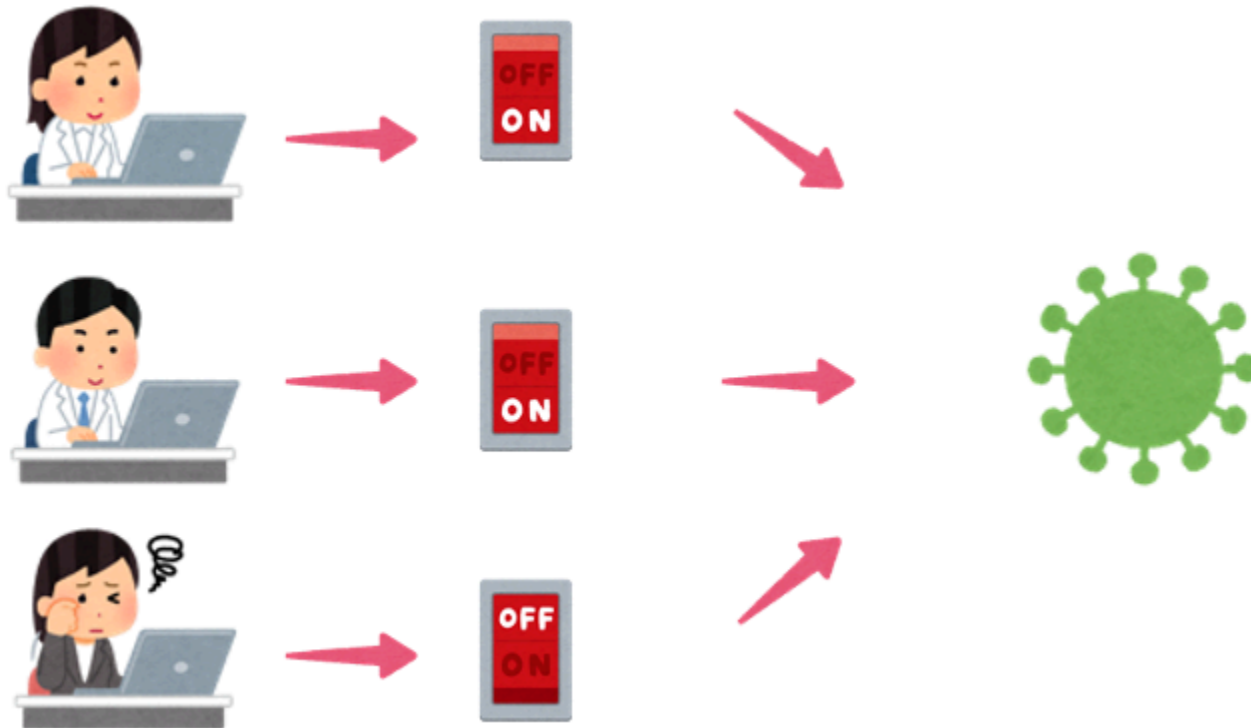
MONITORING IS THE NEW TESTING

Know when users are experiencing issues **in production**

React to the issues **automatically**

To make error is human. To propagate error to all server in automatic way is #devops.

If you haven't automatically destroyed something by mistake, you are not automating enough

PROGRESSIVE DELIVERY IN KUBERNETES

KUBERNETES SERVICE ARCHITECTURE
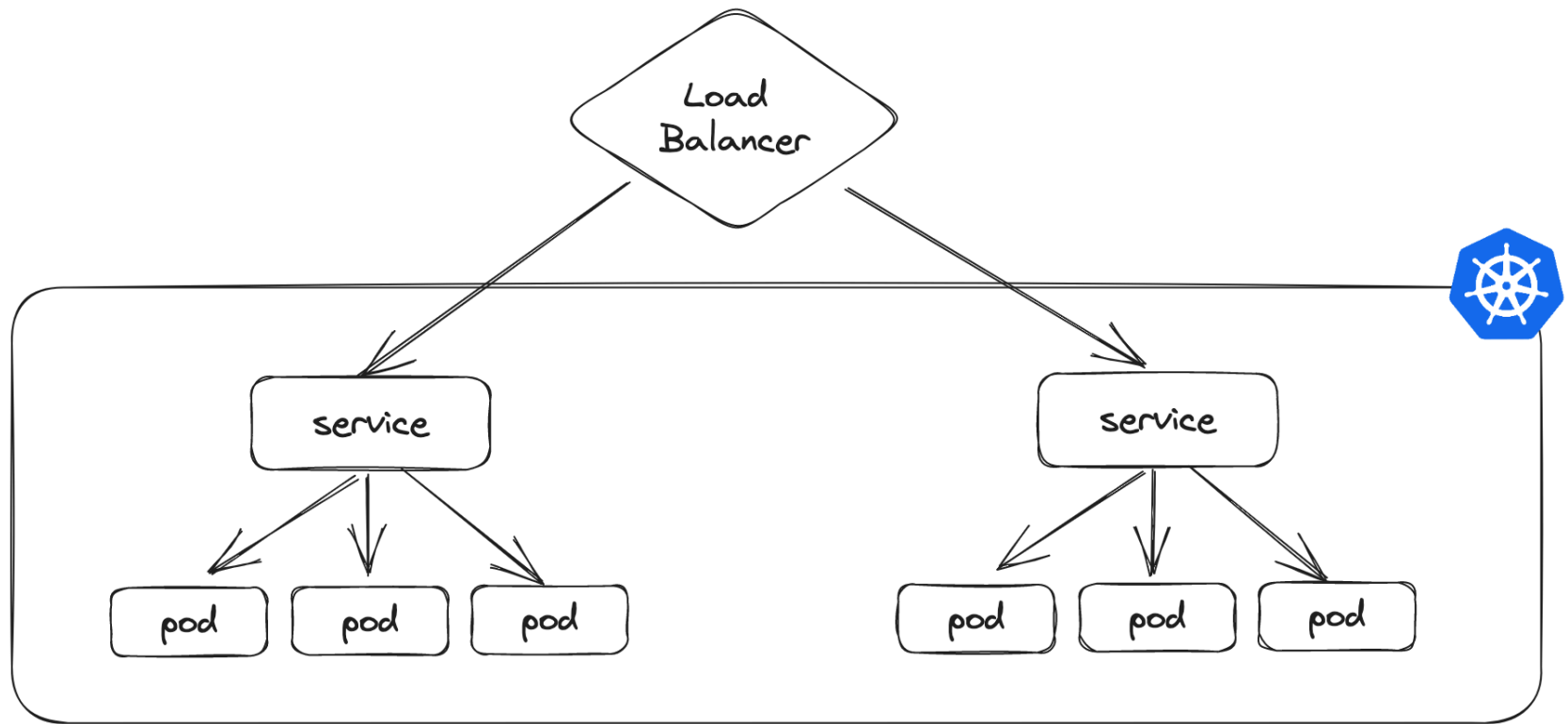
KUBERNETES INGRESS ARCHITECTURE

Ingress
www.example.com.   www.example.com/test   test.example.com

service

service

pod   pod   pod

pod   pod   pod
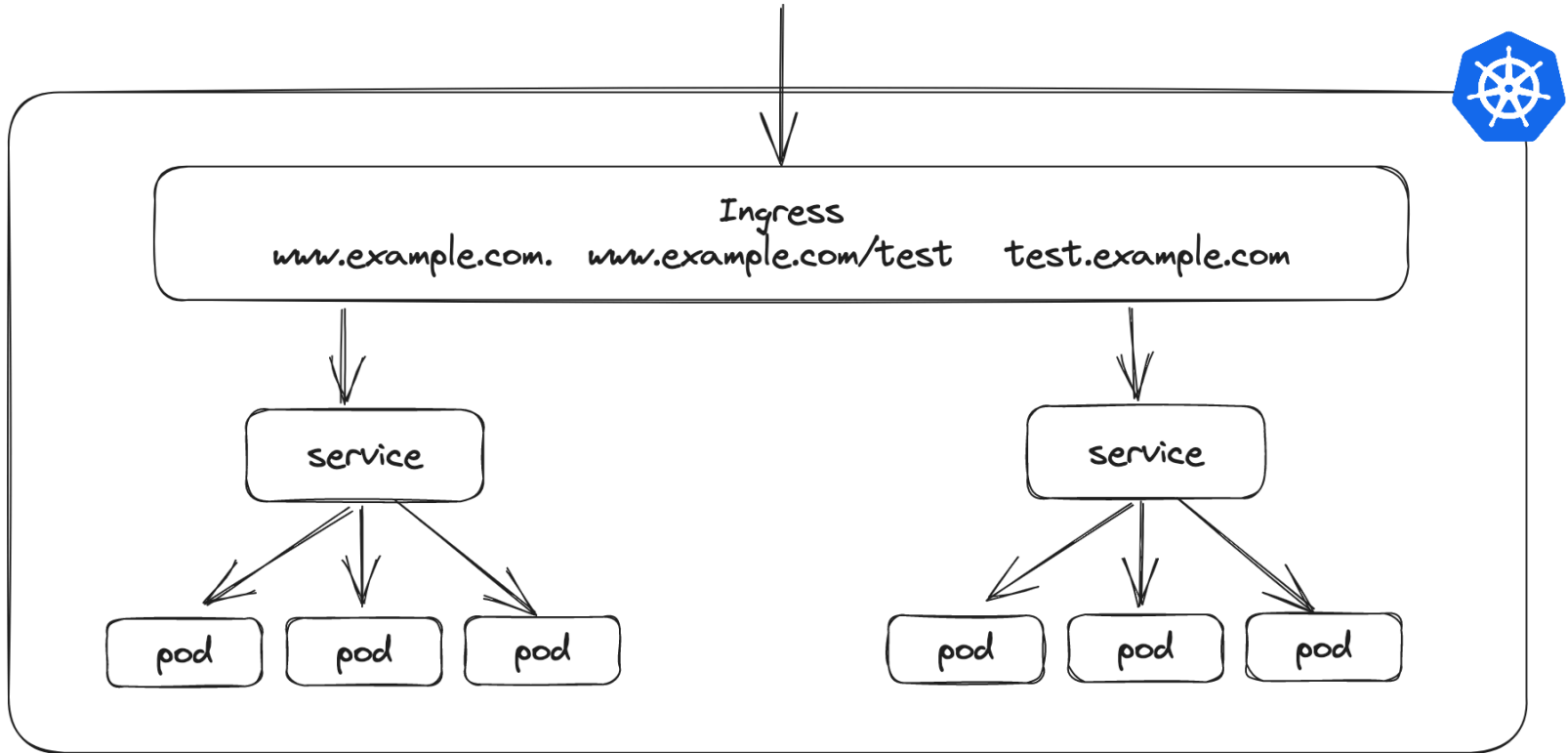
KUBERNETES INGRESS

Ingress controllers:

- AWS
- GCE
- nginx
- Ambassador
- Istio Ingress
- Traefik
- HAProxy
- ...

ARGO ROLLOUTS

ARGO ROLLOUTS

provides advanced deployment capabilities such as blue-green, canary, canary analysis, experimentation, and progressive delivery features to Kubernetes.

ARGO ROLLOUTS

```yaml
icas: 1
ctor:
  tchLabels-
    app: flink-scaffold
  late:
    tadata:
      labels:
        app: flink-scaffold
  containers:
  - name: flink-scaffold
    image: flink-scaffold
    command:
    - /opt/flink/bin/flink
    - run
    - --jobmanager
    - jobmanager:8081
    - /jars/flink-scaffold-1.0-SNAPSHOT.jar
  - name: jobmanager
    image: flink
    ports:
    - containerPort: 6123
      name: jm-rpc
    - containerPort: 6124
      name: blob
    - containerPort: 6125
      name: query
    - containerPort: 8081
      name: jm-ui
    args:
    - jobmanager
    env:
    - name: JOB_MANAGER_RPC_ADDRESS
      value: jobmanager
    resources:
      requests:
        cpu: 2
        memory: "1024Mi"
      limits:
        cpu: 3
        memory: "2048Mi"
  - name: taskmanager
    image: flink
    ports:
    - containerPort: 6121
      name: tm-data
    - containerPort: 6122
```

```yaml
    - name: iceberg
      image: iceberg
      args:
      - jobmanager
      ports:
      - containerPort: 6123
        name: rpc
      - containerPort: 6124
        name: blob
      - containerPort: 6125
        name: query
      - containerPort: 8081
        name: ui
      - containerPort: 6200
        name: ha
      env:
      - name: DOGSTATSD_HOST
        valueFrom:
          fieldRef:
            fieldPath: spec.nodeName
      - name: JOB_MANAGER_RPC_ADDRESS
        value: flink-jobmanager
      resources:
        requests:
          cpu: 2
          memory: "1024Mi"
        limits:
          cpu: 3
          memory: "2048Mi"
```
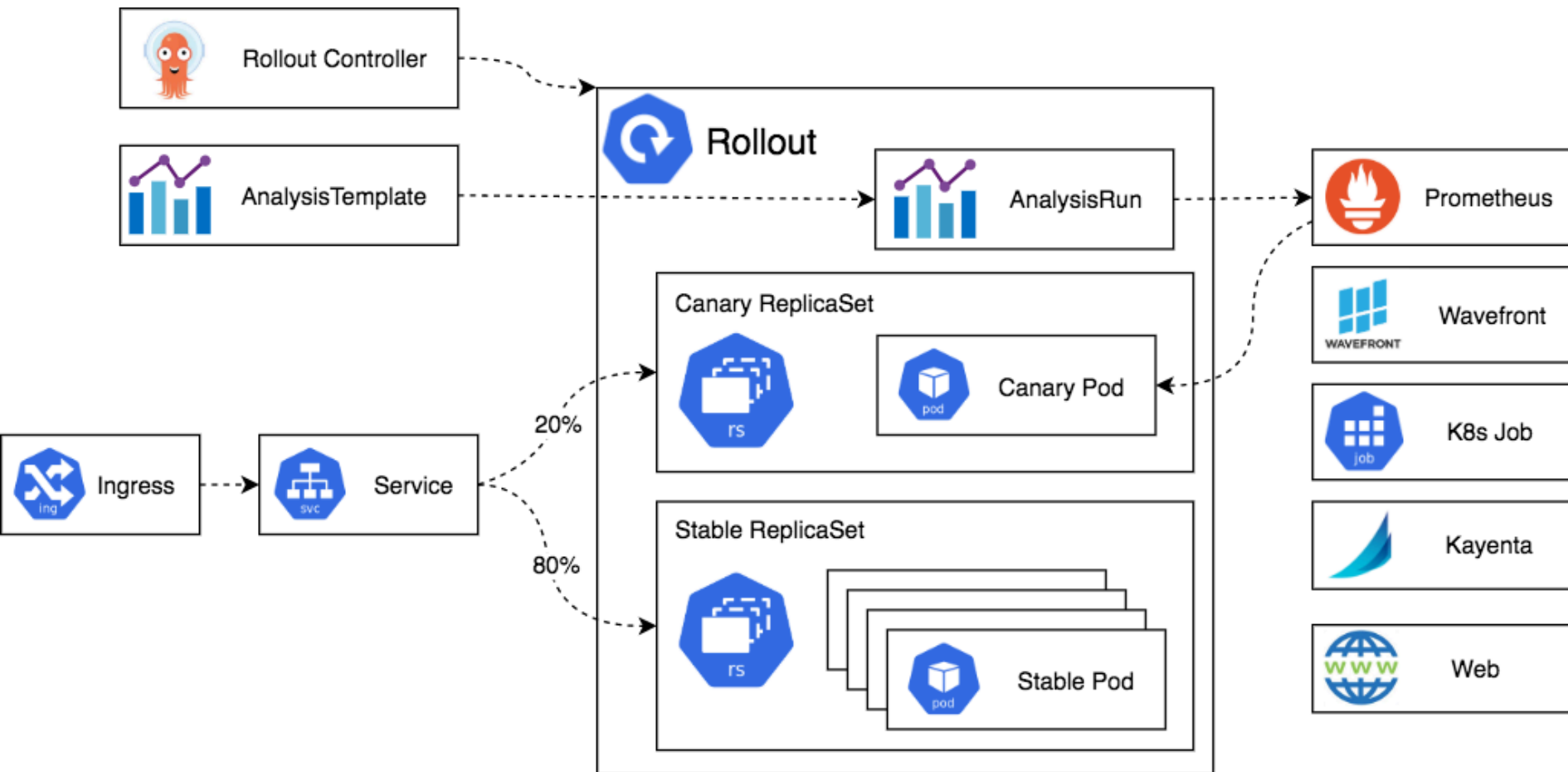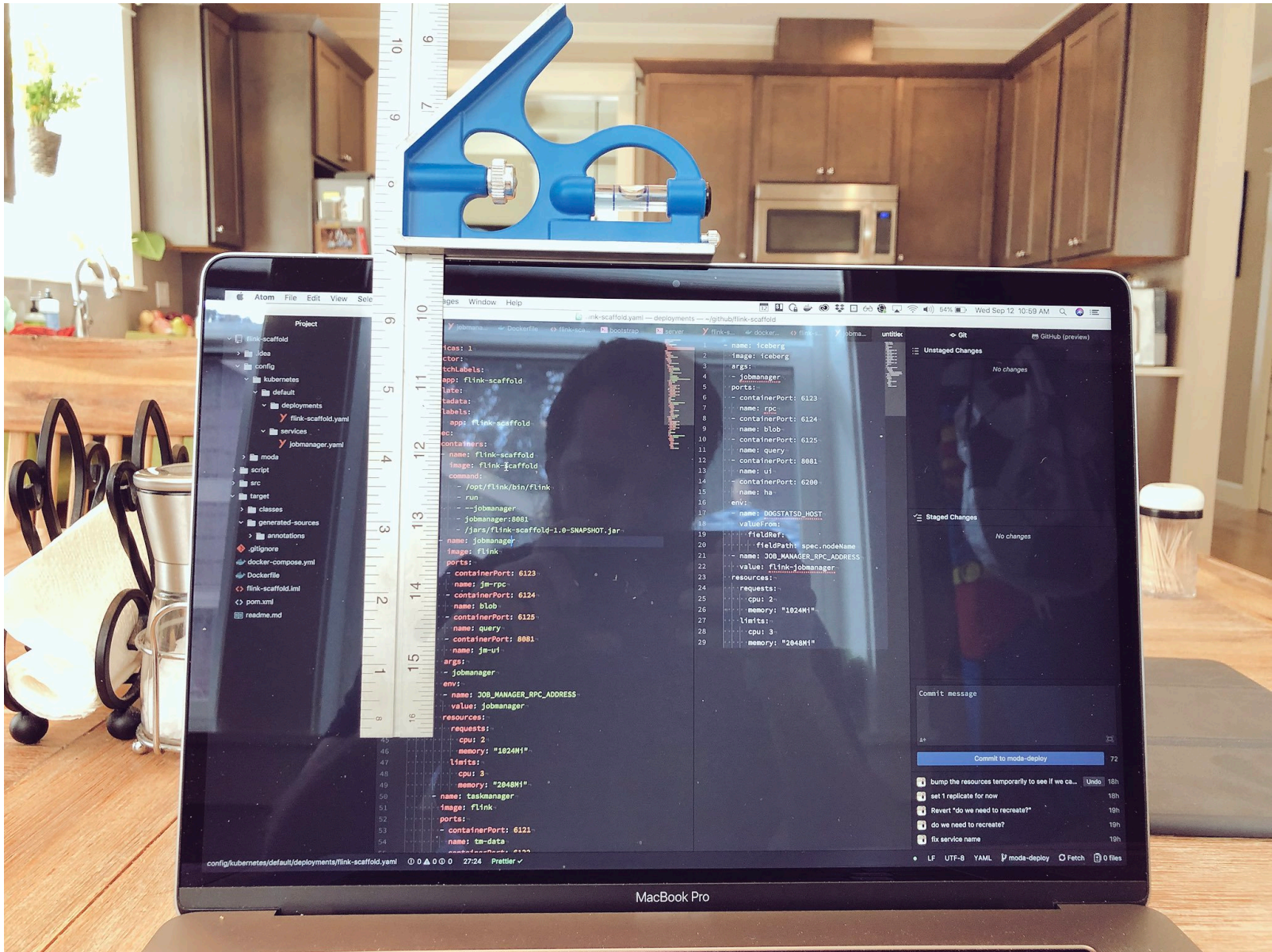
Unstaged Changes

No changes

Staged Changes

No changes

Commit message

Commit to moda-deploy

bump the resources temporarily to see if we ca...   Undo   18h
set 1 replicate for now   18h
Revert "do we need to recreate?"   19h
do we need to recreate?   19h
fix service name   19h

config/kubernetes/default/deployments/flink-scaffold.yaml   27:24   Prettier

1 INITIAL VERSION

Users → **Live traffic** → Load Balancer → Application Version 34

2 NEW VERSION USED BY 10% OF USERS

Users → **Live traffic** → Load Balancer
- 90% → Application Version 34
- 10% → Application Version 35
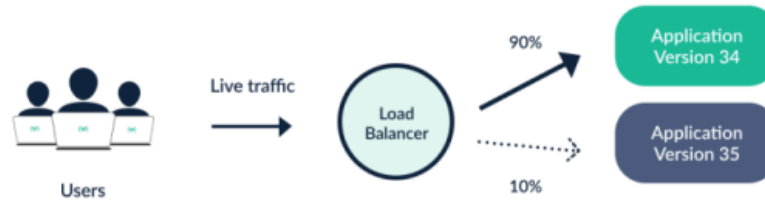
3 NEW VERSION USED BY 33% OF USERS

Users → **Live traffic** → Load Balancer
- 66% → Application Version 34
- 33% → Application Version 35
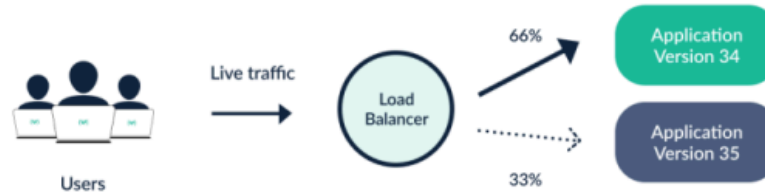
4 NEW VERSION USED BY ALL USERS

Users → **Live traffic** → Load Balancer → 100% → Application Version 35

canary-demo ⏸

RESTART RETRY ⊙ ABORT ⬆ PROMOTE-FULL

Summary

Strategy	🕊 Canary
Step	👣 1/8
Set Weight	⚖ 20
Actual Weight	⚖ 20

Containers ✏

canary-demo argoproj/rollouts-demo:green

📦 Add more containers to fill this space!

Revisions

Revision 9 ⌃

argoproj/rollouts-demo:green 🕊 canary

canary-demo-68f96454b6 ✅

✅

Revision 8 ↺ ROLLBACK ⌃

argoproj/rollouts-demo:yellow

Steps

🎯 Set Weight: 20%

⏸ Pause

🎯 Set Weight: 40%

⏸ Pause: 10s

🎯 Set Weight: 60%

⏸ Pause: 10s

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