



KAFKA ON KUBERNETES: DOES IT REALLY HAVE TO BE <<THE HARD WAY>>?

APRIL, 2019 / NEW YORK, 2019

@GAMUSSA

| #KAFKASUMMIT

| @CONFLUENTINC

RAFFLE, YEAH



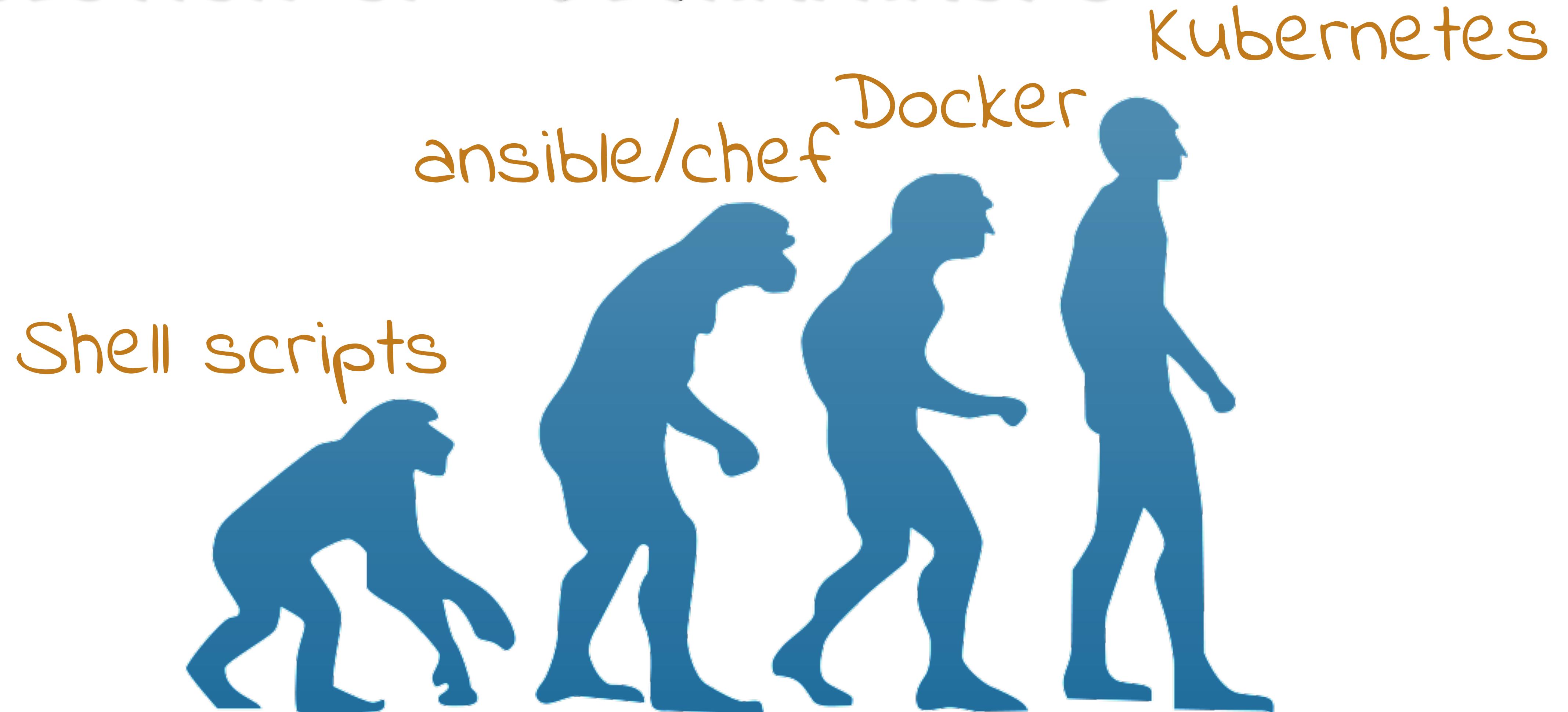
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EVOLUTION OF #DEVKAFKAOPS





Claes Mogren
@claesmogren



"Kubernetes is of course named after the Greek god of spending money on cloud services." - [@QuinnyPig](#)

3:54 PM · Mar 20, 2019 · Twitter Web Client

68 Retweets 233 Likes



@GAMUSSA

|

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**WHO RUN STATELESS
WORKLOADS IN KUBERNETES?
WHO THINKS IT'S A GOOD
IDEA?**

**WHO RUN STATEFUL
WORKLOADS IN KUBERNETES?
WHO THINKS IT'S A GOOD
IDEA?**

KAFKAESQUE WORLD OF KAFKA ON KUBERNETES



A screenshot of a Twitter post from Kelsey Hightower (@kelseyhightower). The post reads: "Kubernetes can only meet stateful workloads half way and I lack the expertise to manage a production configuration of Kafka, RabbitMQ, or Postgres on static infrastructure, let alone a Kubernetes cluster." It was posted at 9:06 AM - 13 Feb 2018. The post has 18 Retweets and 71 Likes. The interface shows a "Following" button.

Kelsey Hightower ✅
@kelseyhightower

Following

Kubernetes can only meet stateful workloads half way and I lack the expertise to manage a production configuration of Kafka, RabbitMQ, or Postgres on static infrastructure, let alone a Kubernetes cluster.

9:06 AM - 13 Feb 2018

18 Retweets 71 Likes

2 18 71



A screenshot of a Twitter post from Gwen (Chen) Shapira (@gwenshap). The post reads: "Stateful apps on Kubernetes basically depend on having great shared storage. This is available in the cloud but incredibly rare on-prem. @psynikal spent few days helping someone with 400ms write latency to figure out why Kafka and ZK are unstable." It was posted at 10:06 PM - 23 Jul 2018. The post has 7 Retweets and 42 Likes. The interface shows a "Following" button.

Gwen (Chen) Shapira
@gwenshap

Following

Stateful apps on Kubernetes basically depend on having great shared storage. This is available in the cloud but incredibly rare on-prem. @psynikal spent few days helping someone with 400ms write latency to figure out why Kafka and ZK are unstable.

10:06 PM - 23 Jul 2018

7 Retweets 42 Likes

4 7 42

#DEVKAFKAOPS



WELL, IT'S TRICKY ©

Translating an existing architecture to Kubernetes

External access to brokers and other components

Persistent Storage options on prem and clouds

Security Configuration and Upgrades



We just need to
deploy **Kafka** on
Kubernetes



We will use
**confluentinc/cp-helm-
charts**

Helm Charts is just a GO
Templates.

How Charts help with
rolling restart?





We will use
StatefulSets
with **OrderedReady**



We need SRE /
Operator knowledge to
manage the platform.
You need Operator!





Show me your
Operator

DEMO

DO KAFKA ON KUBERNETES DEMO



AND EVERYONE LOOSESTHEIR MIND

WHAT JUST HAPPENED?

ZK and Kafka deployed

Security with TLS is configured

External access is configured

Monitoring is enabled



CONFLUENT OPERATOR - AUTOMATED SECURITY CONFIGURATION



SASL PLAIN and Mutual TLS Authentication

Automate configuration of truststores and keystores with secret objects

Automate configuration of Kafka and all Confluent Platform Components

CONFLUENT OPERATOR - SCALE

Automate Scaling:

Spin up new brokers, connect workers &



Distribute partitions to new brokers:

Determine balancing plan

Execute balancing plan

Monitor Resources



```
> cat kafka_new.yml
```

```
## Kafka Cluster
##
kafka:
  name: kafka
  replicas: 5
  version: 5.0.0
```

```
> helm upgrade -f kafka_new.yml --name kafka
```

BE LIKE JUSTIN!



Justin Manchester @JuMaUK · Mar 14
Replies to @gwenshap and @gAmUssA

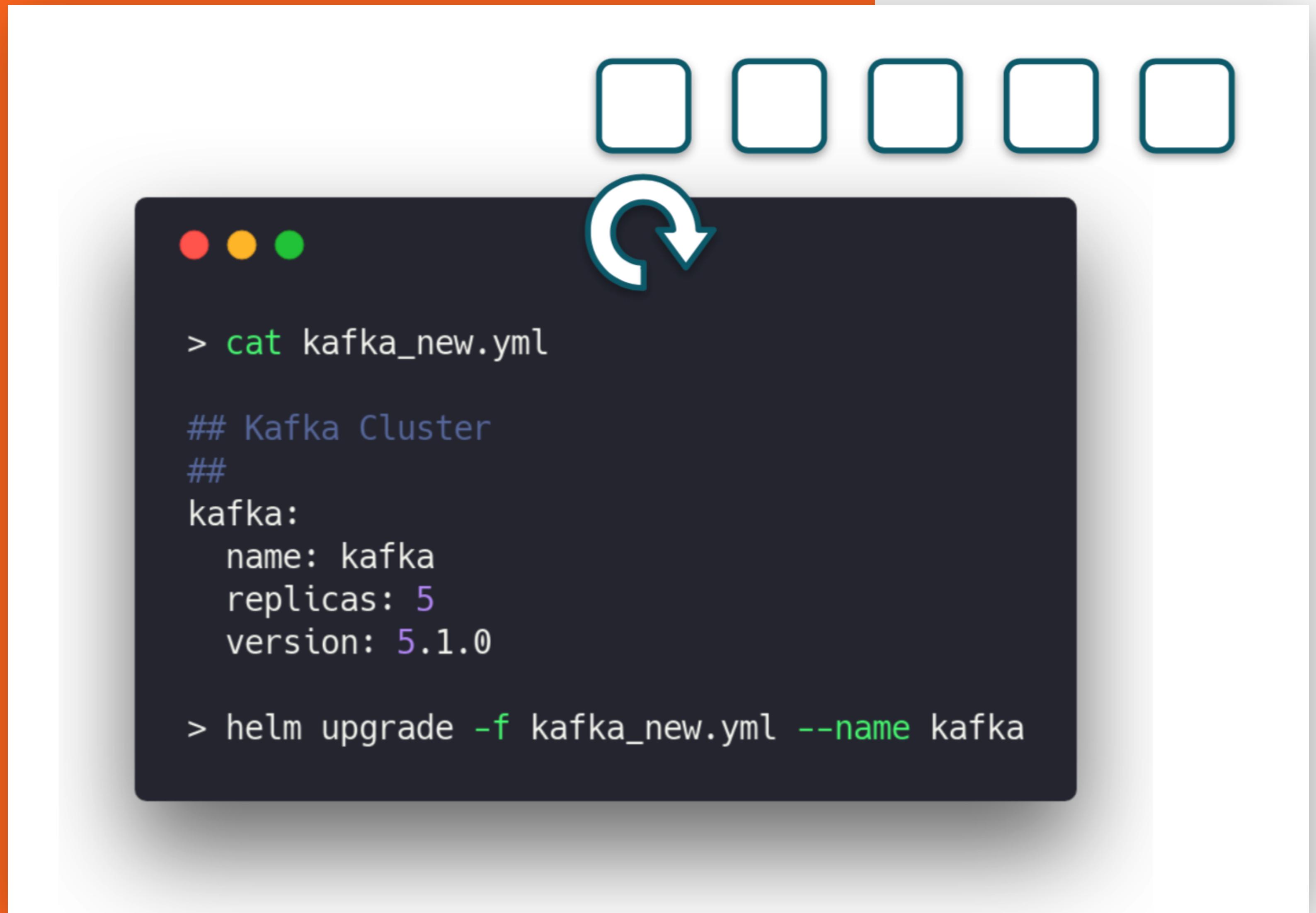
I personally don't find Kafka upgrades hard, but many people do.
Particularly around the concept of rollback. But lack of monitoring, not just
of Kafka, but of the infrastructure, and not understanding resource
contention are massive problems.

1 3 7

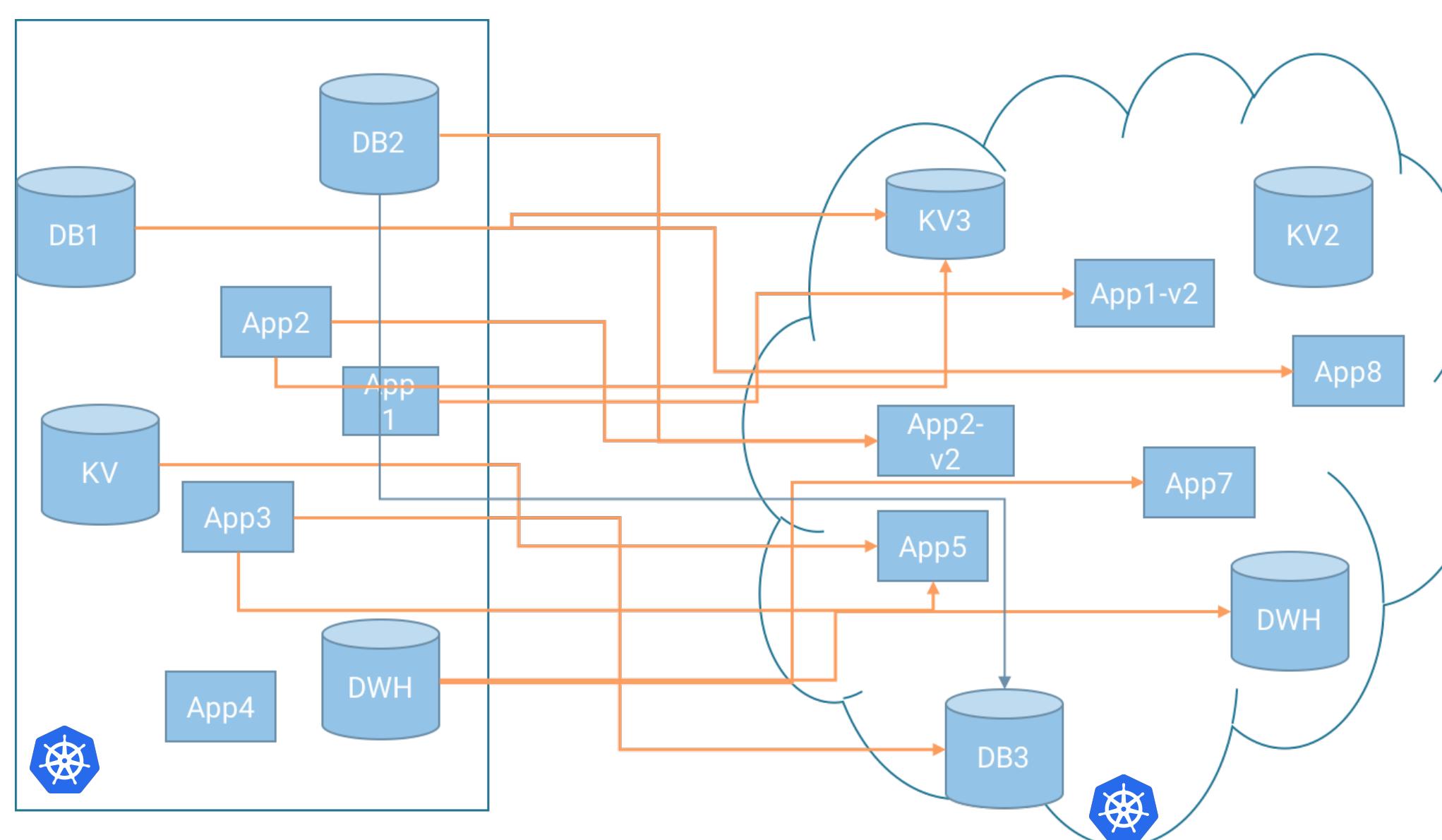
ROLLING UPGRADE

Kafka Broker Upgrades:

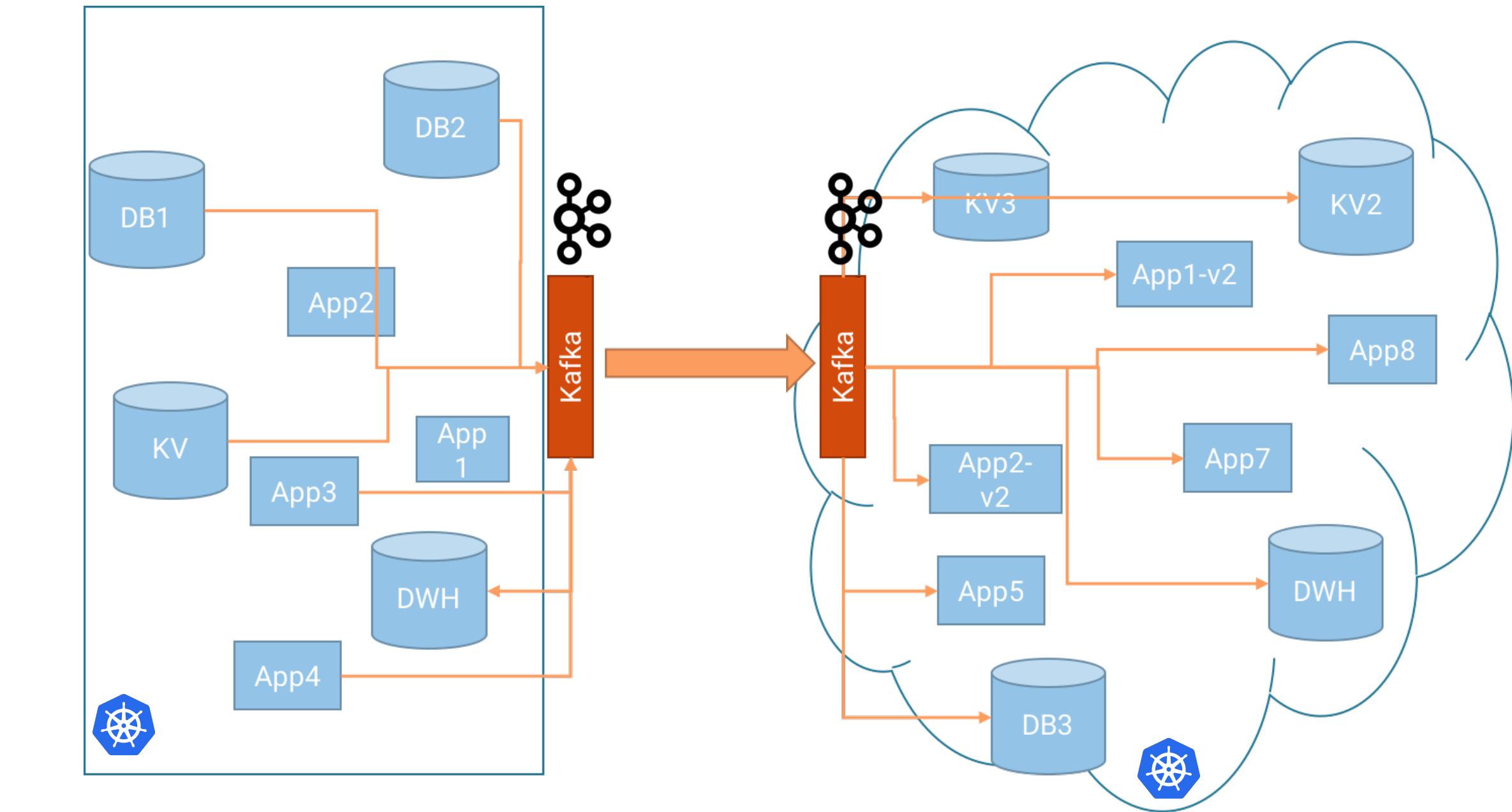
1. Stop the broker, upgrade Kafka
2. Wait for Partition Leader reassignment
3. Start the upgraded broker
4. Wait for zero under-replicated partitions
5. Upgrade the next broker



WILL IT FLY?



VS.



- We are in private Preview Release now
- 24 customers testing the Operator in Preview:
- Global customers
- Banks, Fin Tech, Retailers, Consumer Tech
- We are in the final stages of Preview and about to launch soon

GA PLANS

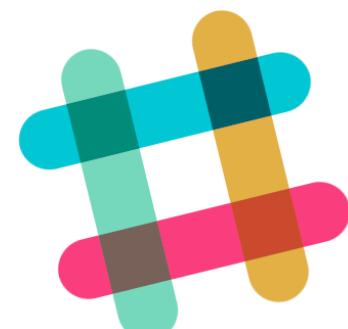




THANKS!

@gamussa
viktor@confluent.io

michael.ng@confluent.io



<https://slackpass.io/confluentcommunity>
#kubernetes

