



**KubeCon**



**CloudNativeCon**

North America 2017

# Don't Hassle Me I'm Stateful

Jeff Bornemann, Senior Consultant, Red Hat  
Michael Surbey, Solution Architect, Red Hat

# Agenda

- What are StatefulSets?
- Problem statement
- Live demo

# >: man presentation

Questions at any time

Discussion, not a lecture

# What are StatefulSets?

Introduced in Kubernetes 1.3 (alpha) as `PetSet`  
Kubernetes 1.5 as `StatefulSet` (beta)  
GA in 1.9

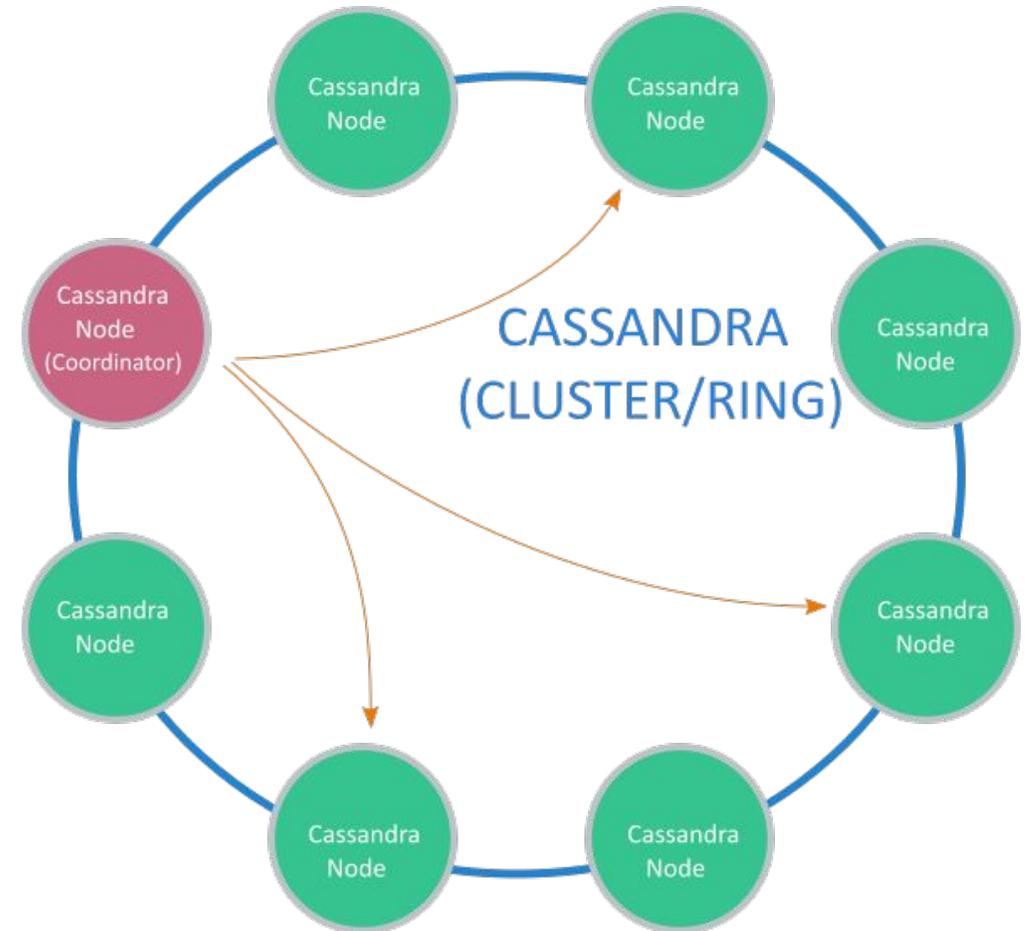
# What are StatefulSets?

- Greater pod identity
- Stable replica storage
- Pod replica network address
- Ordered start-up

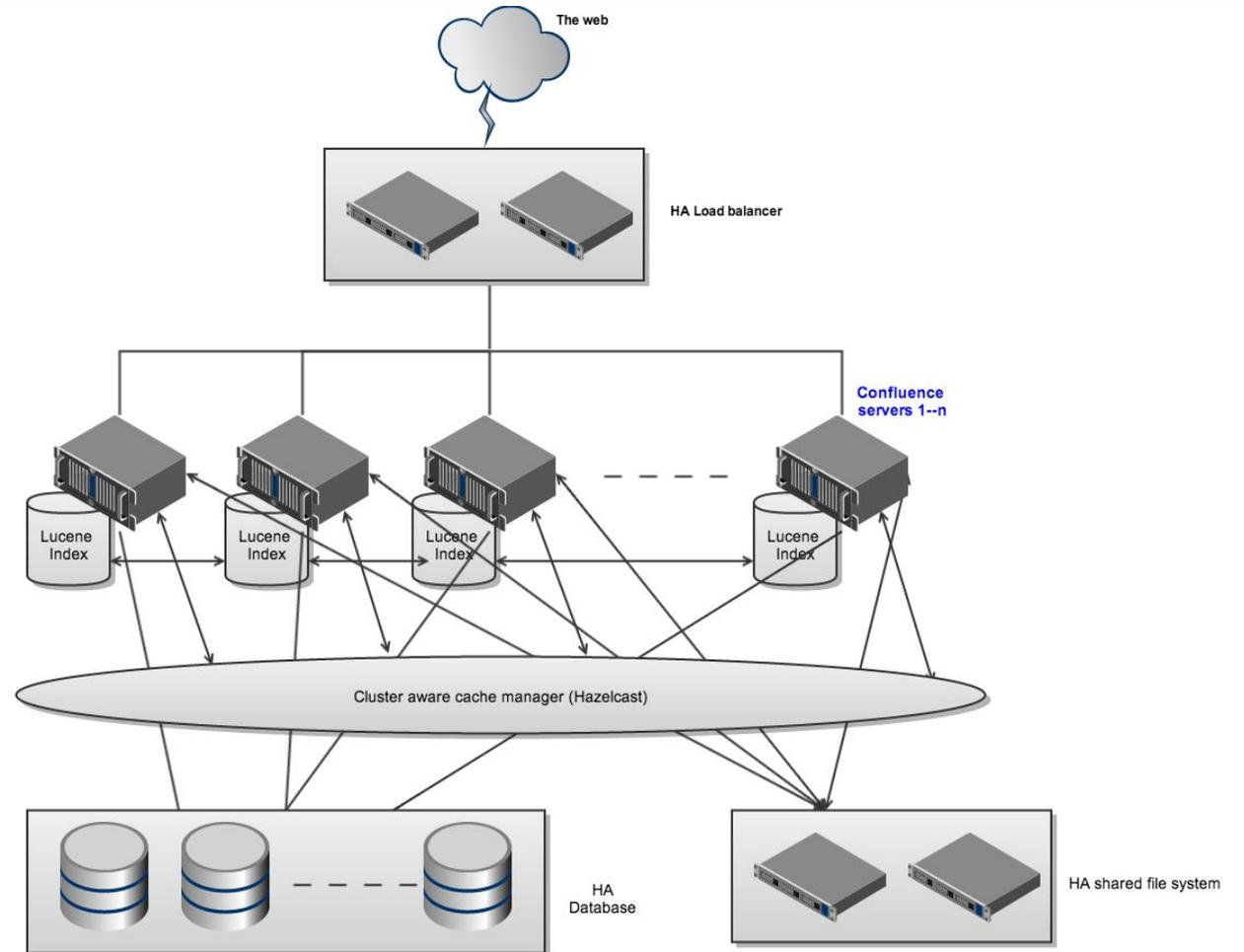
# What problem do they solve?

- Migration pain of vendor applications
- Storage with scale
- Chatty clusters
- Ordered cluster entry

# Cassandra Cluster



# Confluence Data Center



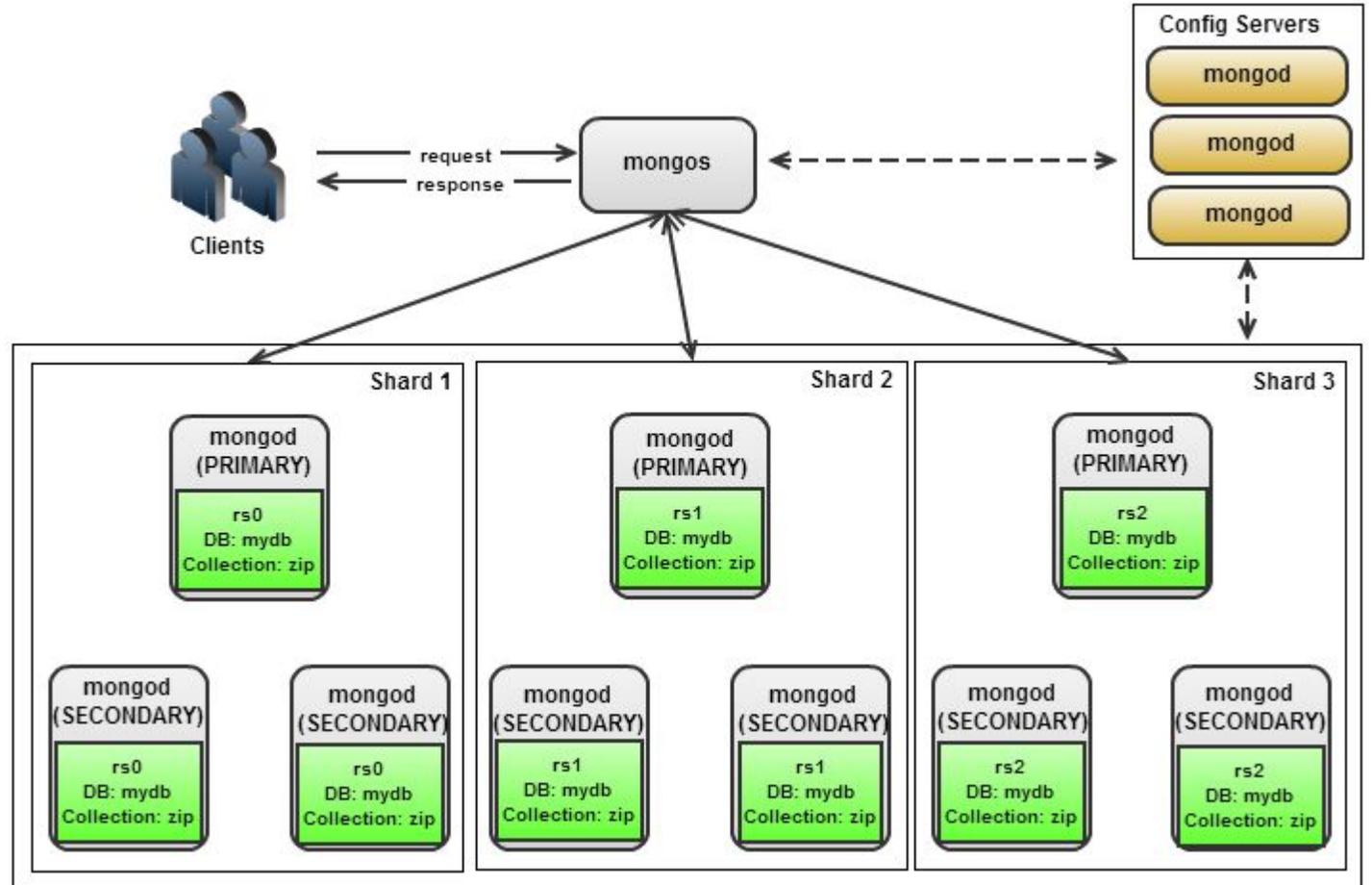
# How do we scale?

What if I want to add a new node to Cassandra or Confluence?

# Why?

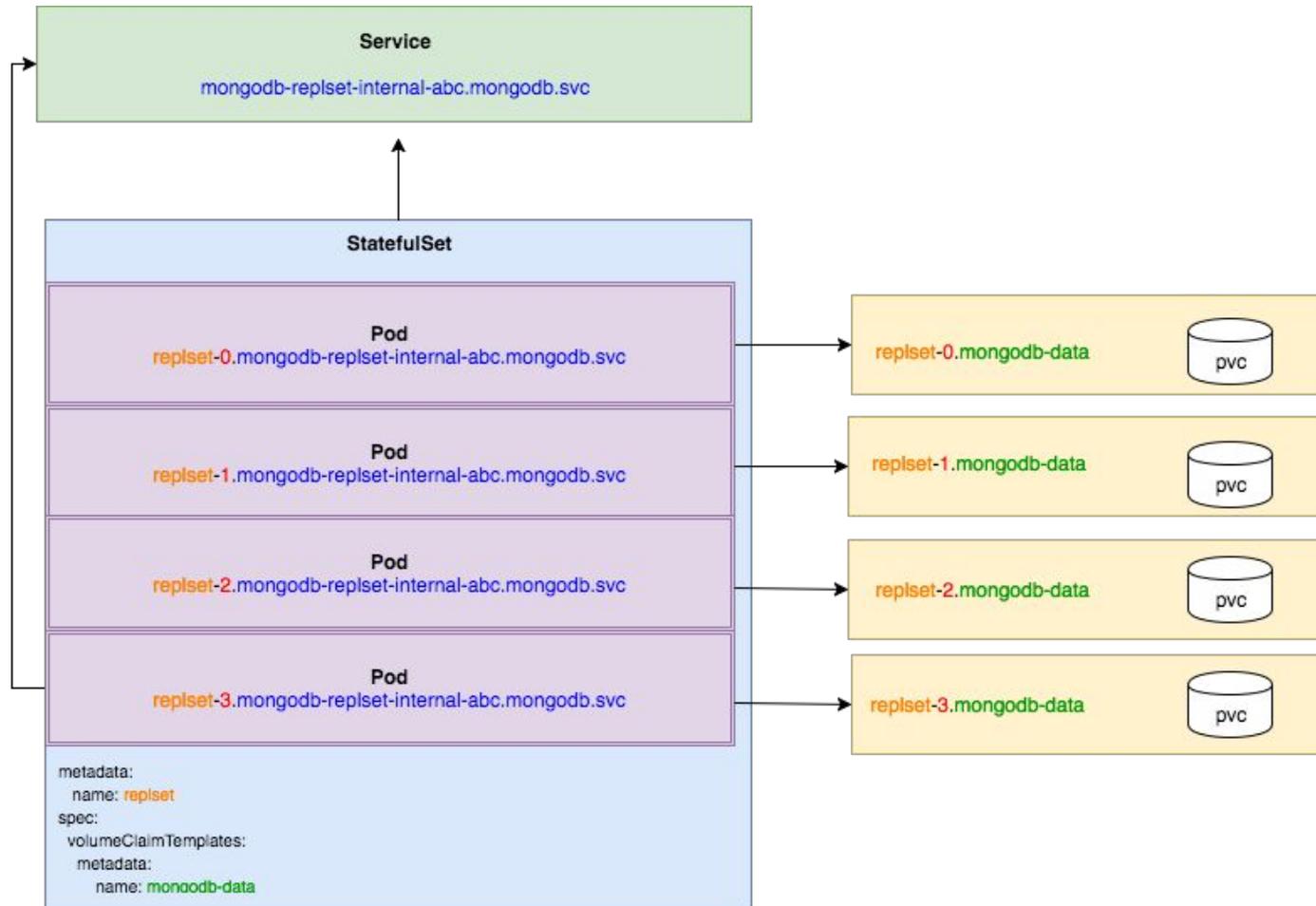


# MongoDB as an example

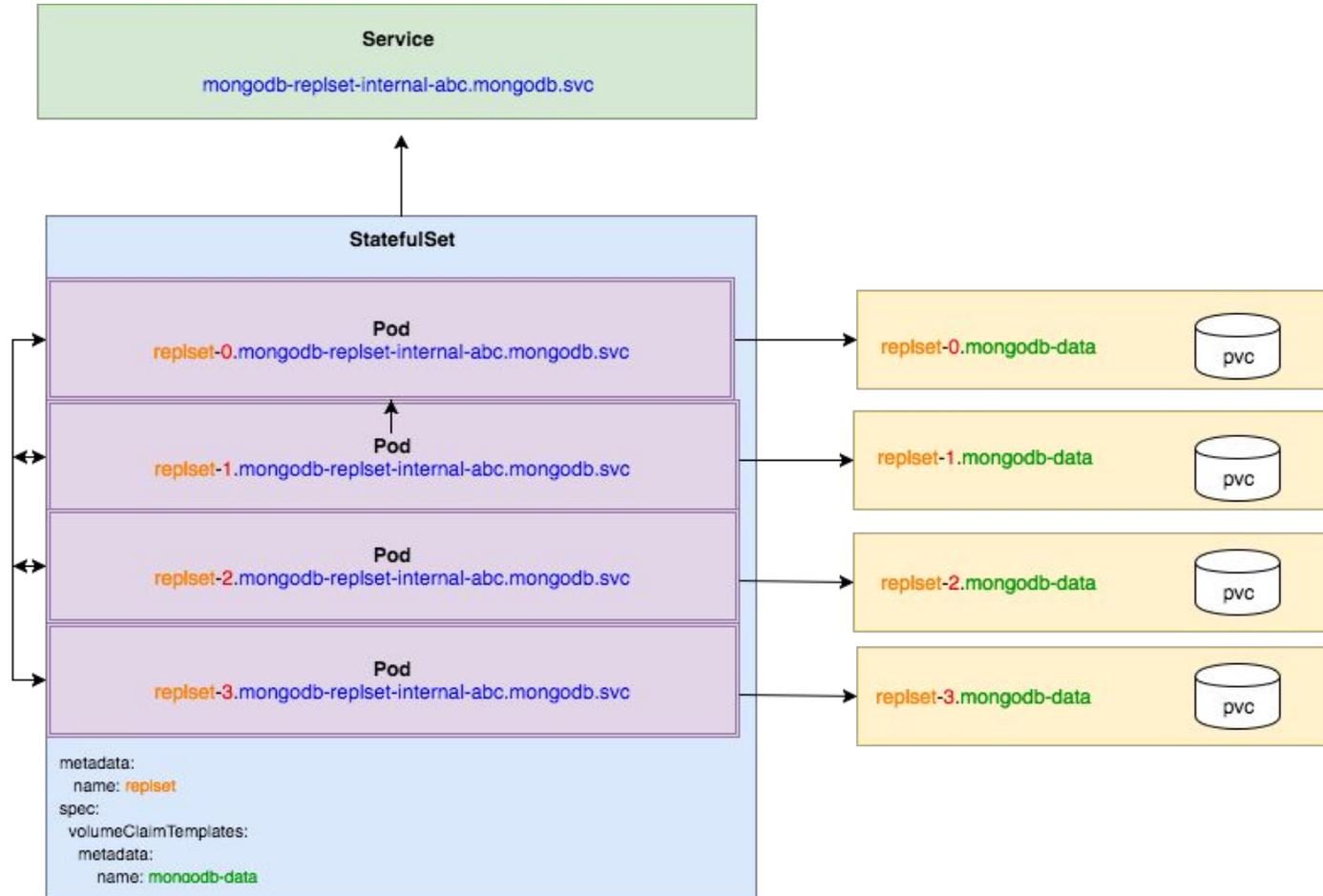


# Live demo #1

# MongoDB Replica Set



# MongoDB Replica Set



# Live demo #2

# Ordered startup

mongodbreplsetdef-0 -> Ready  
mongodbreplsetdef-1 -> Ready  
mongodbreplsetdef-2 -> Ready  
mongodbreplsetdef-3 -> Ready  
mongodbreplsetdef-n -> Ready

# Network Identity

mongodbreplsetabc-n.mongodb-replset-internal.mongodb.svc

(name)-(index).(service name)

# Stable Storage

- Pod replicas map to PVCs
- PVCs are retained on StatefulSet deletion

# Now, and the future

- Deployments
  - Pod Management.
    - OrderedReady
    - Parallel
  - Update Strategy
    - OnDelete
    - RollingUpdate
  - Partitions

# Questions?

Want to deploy this demo yourself?

<https://github.com/redhat-cop/containers-quickstarts/tree/master/mongo-statefulset>

# Thank you!

Enjoy the rest of your conference, and have a safe trip home!