Containers, DevOps, Apache Mesos and Cloud

Reshaping how we develop and delivery software

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Are your applications ready?

Expect an impact on your application architecture

Fault tolerant
Scalable
Elastic
Multi-tenant

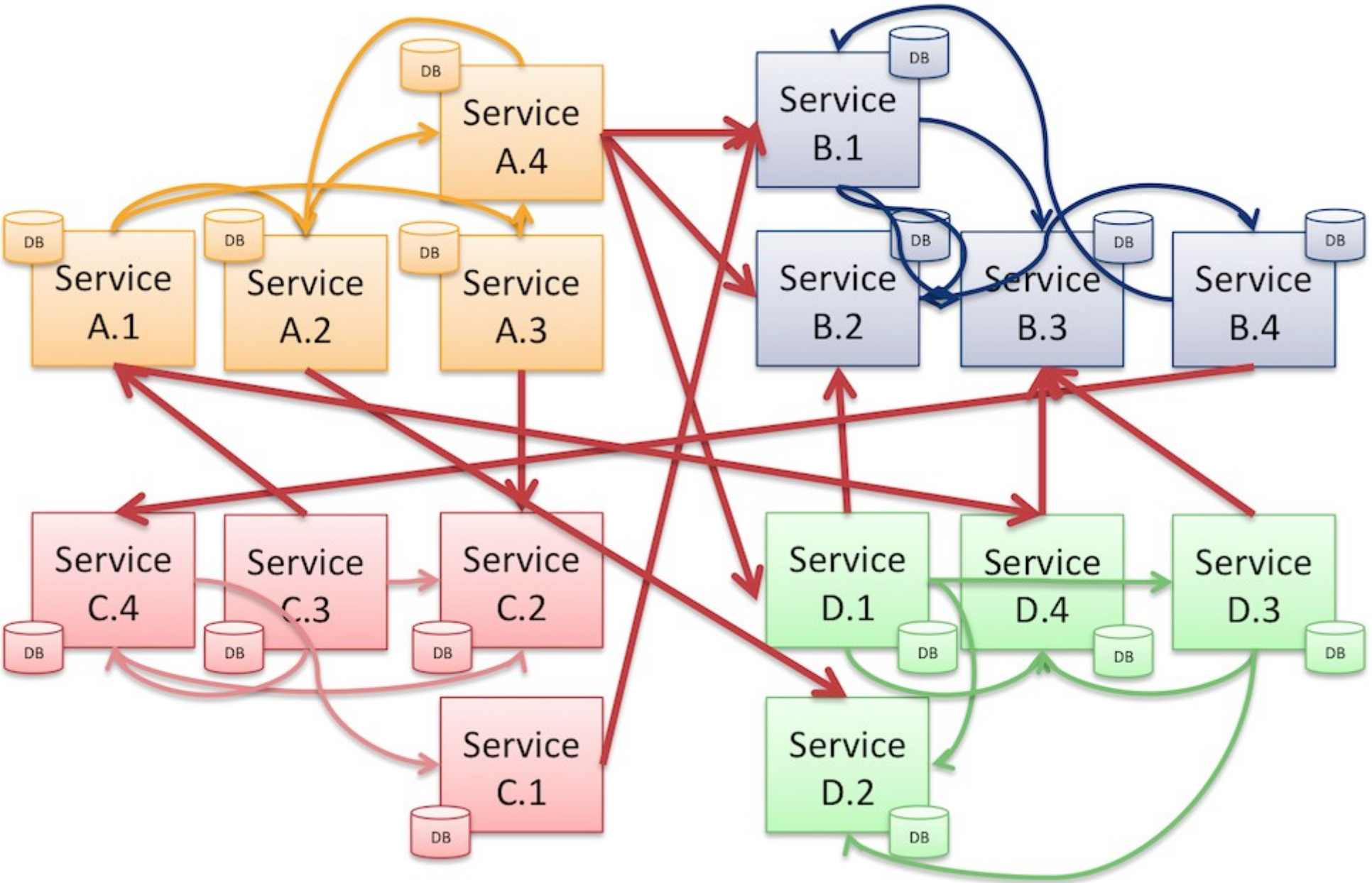
Decompose the applications into self-contained services

Be stateless (As much as possible)

NFR's are king, be aware on latency, throughput, etc...


!!!MICROSERVICES!!!

Microservices...



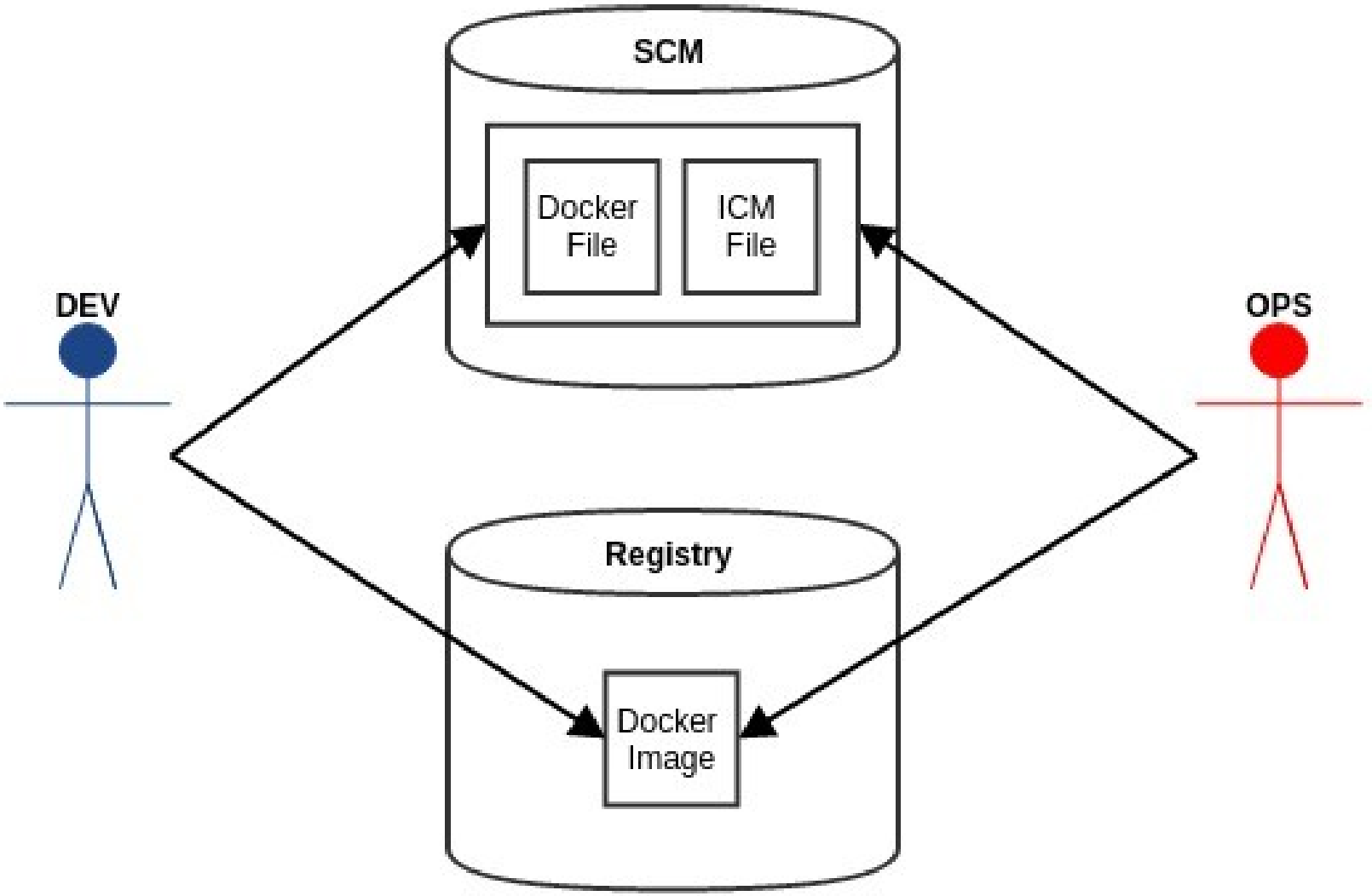
… or more Spaghetti

Why Use Containers?

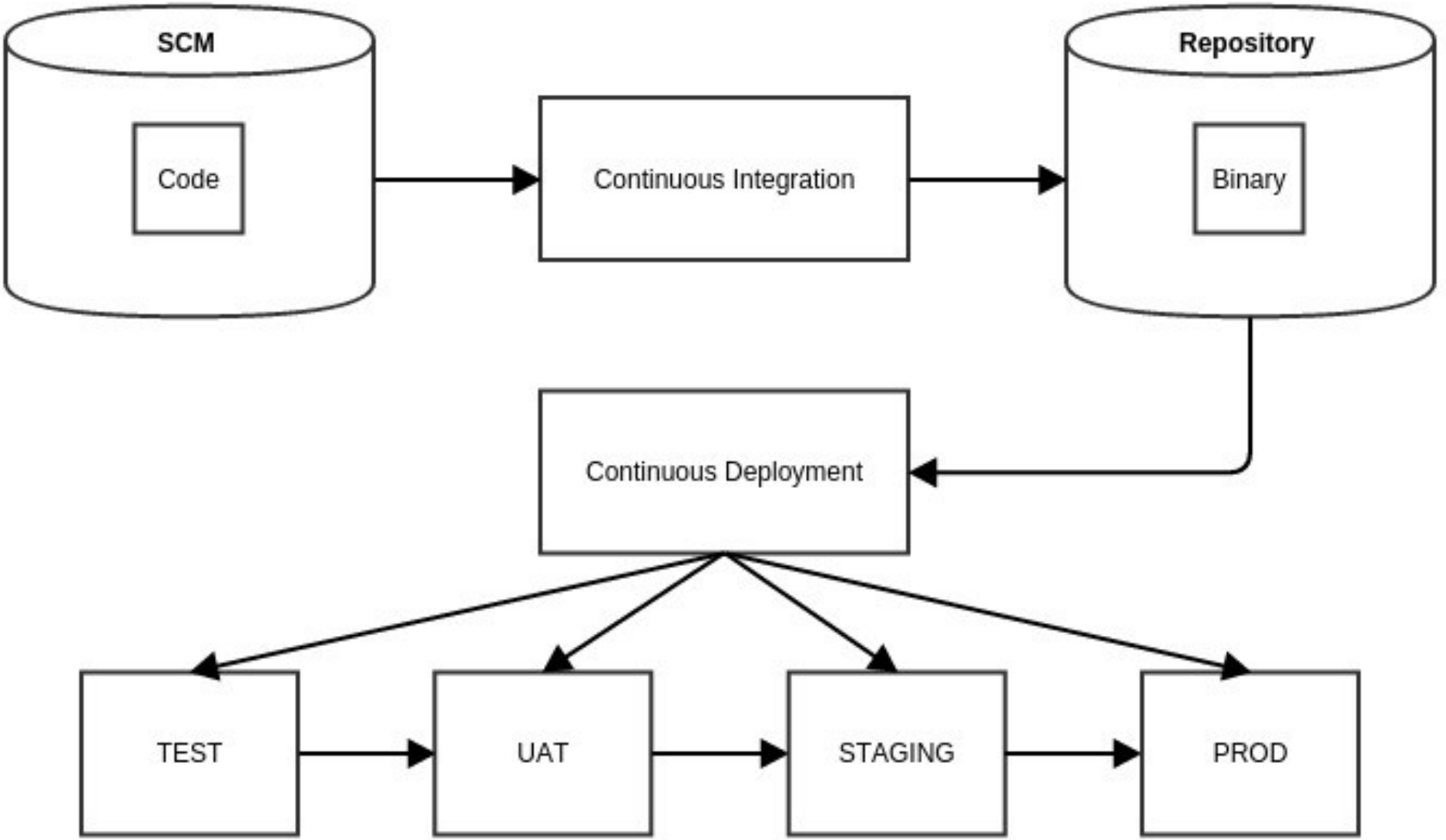
“There are 17 million shipping containers in existence, packed with every physical good imaginable. Every single one of them can be loaded onto the same boats, by the same cranes, in the same facilities, and sent anywhere in the World with incredible efficiency. It is embarrassing to think that a 30 ton shipment of coffee can safely travel half-way across the World in less time than it takes a software team to deliver its code from one datacenter to another sitting 10 miles away.”

5th principle of Open Container Initiative - https://github.com/opencontainers/specs/blob/master/principles.md

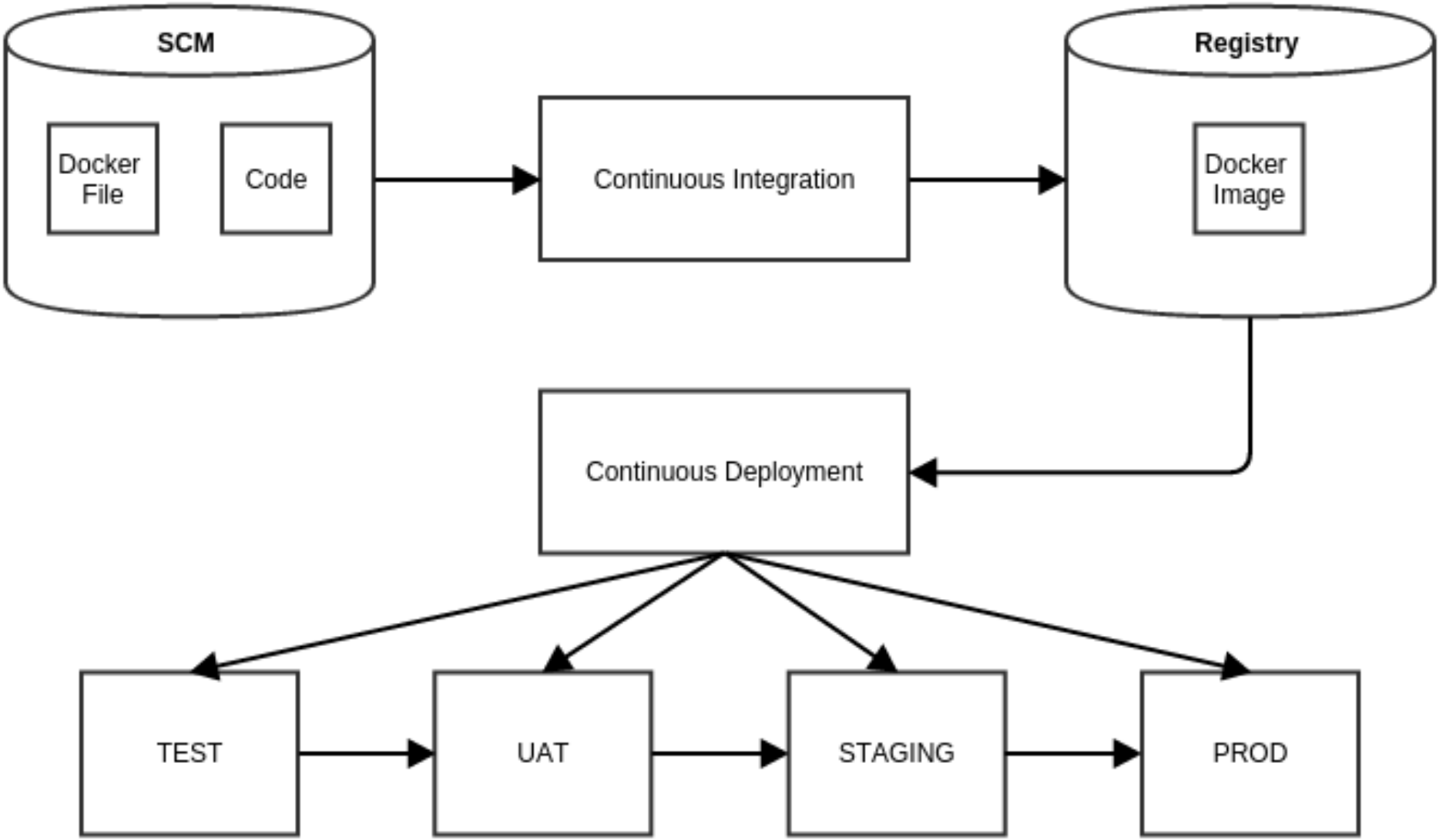
Collaboration @ Container



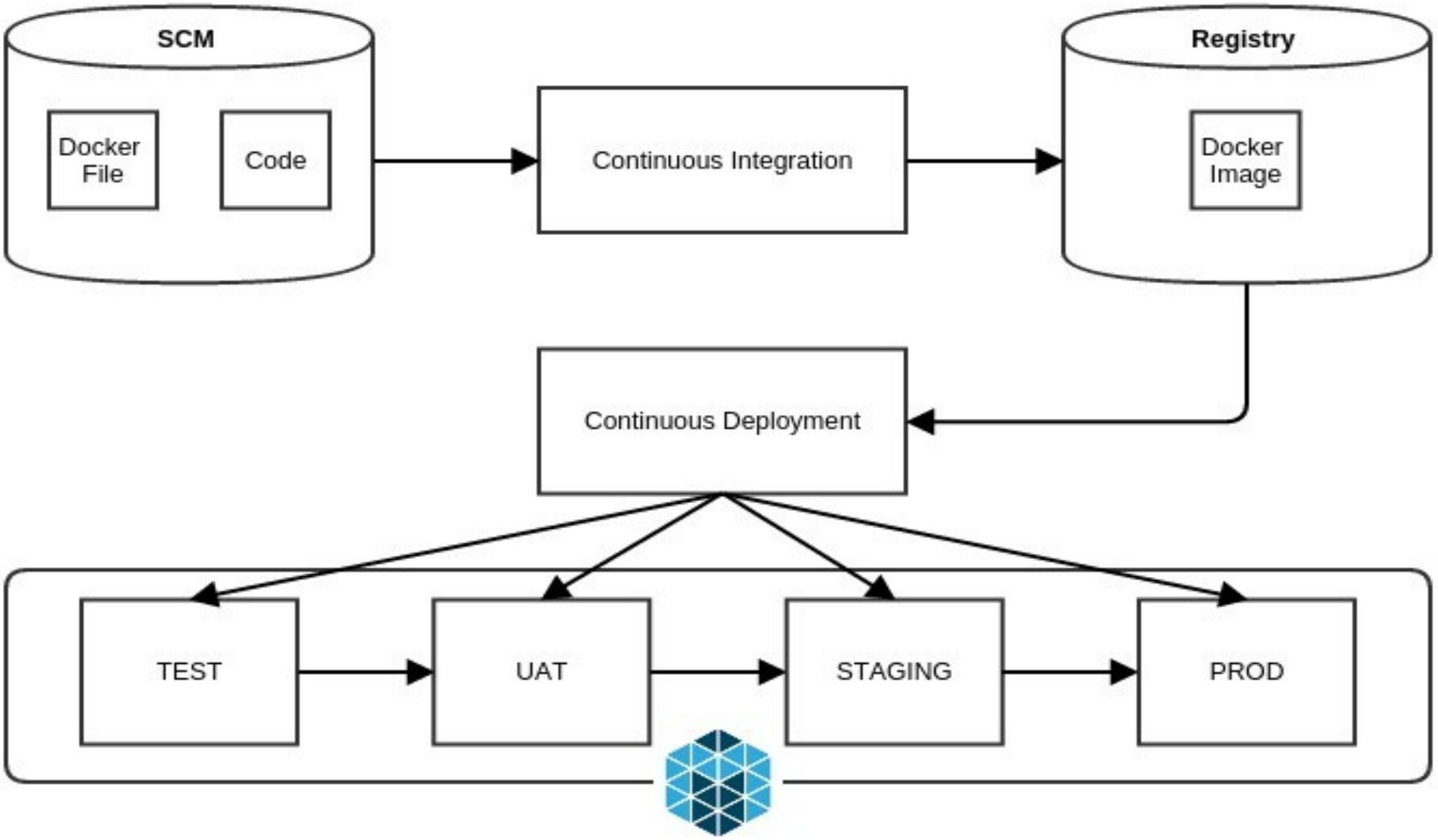
Your usual Delivery Pipeline...



… Is now Baking your image



And potentially can use all your computing power



Introducing Apache Mesos

Program against your datacenter like it's a single pool of resources

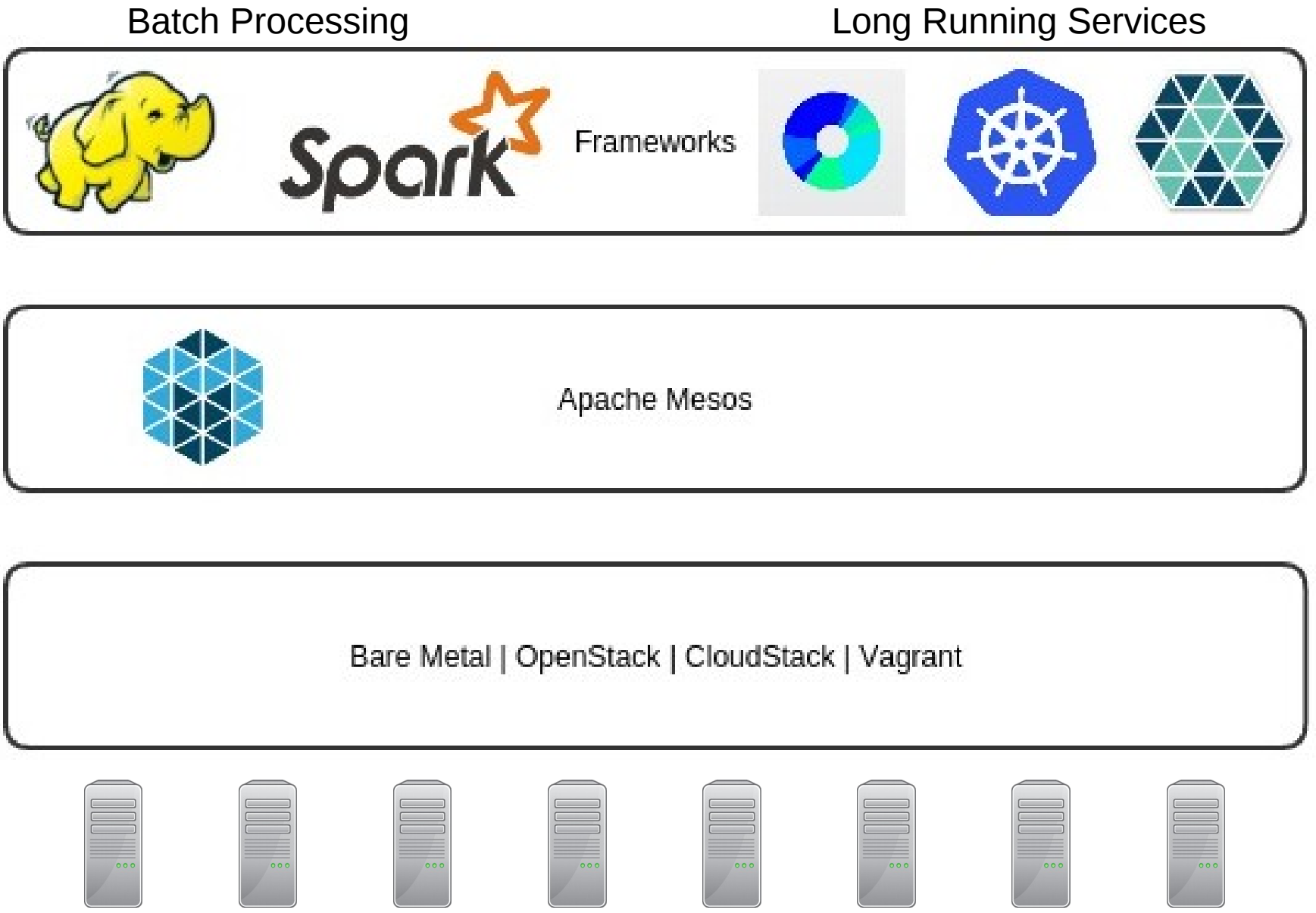
"Apache Mesos abstracts CPU, memory, storage, and other compute resources away from machines (physical or virtual), enabling fault-tolerant and elastic distributed systems to easily be built and run effectively."

http://mesos.apache.org/

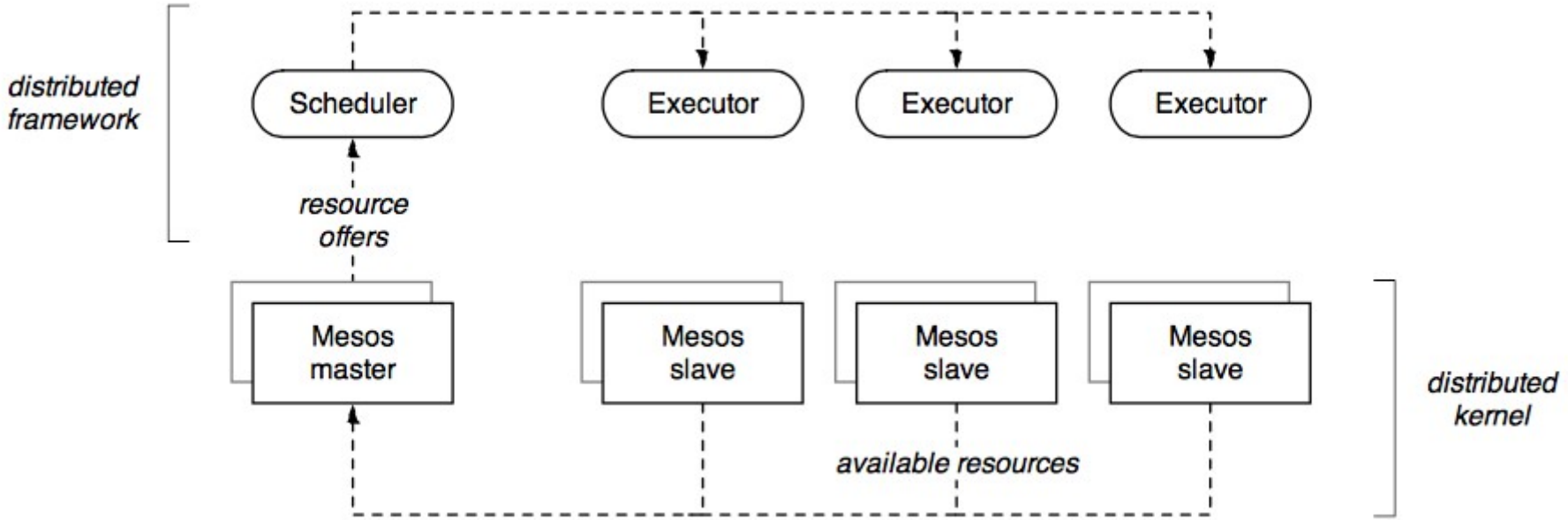
Used by Twitter, AirBNB, eBay, Netflix, Apple and many others

http://mesos.apache.org/documentation/latest/powered-by-mesos/

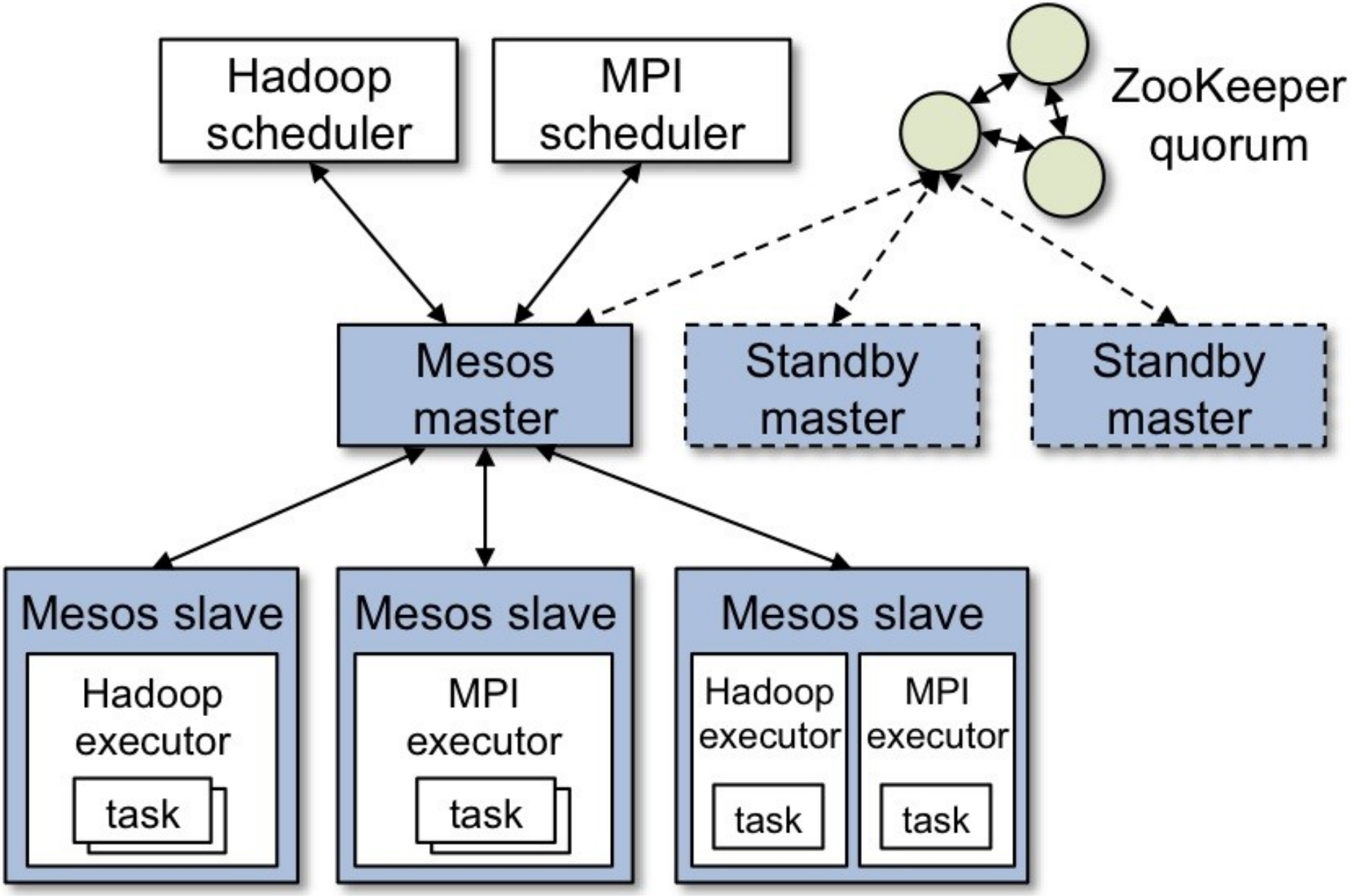
Apache Mesos Overview



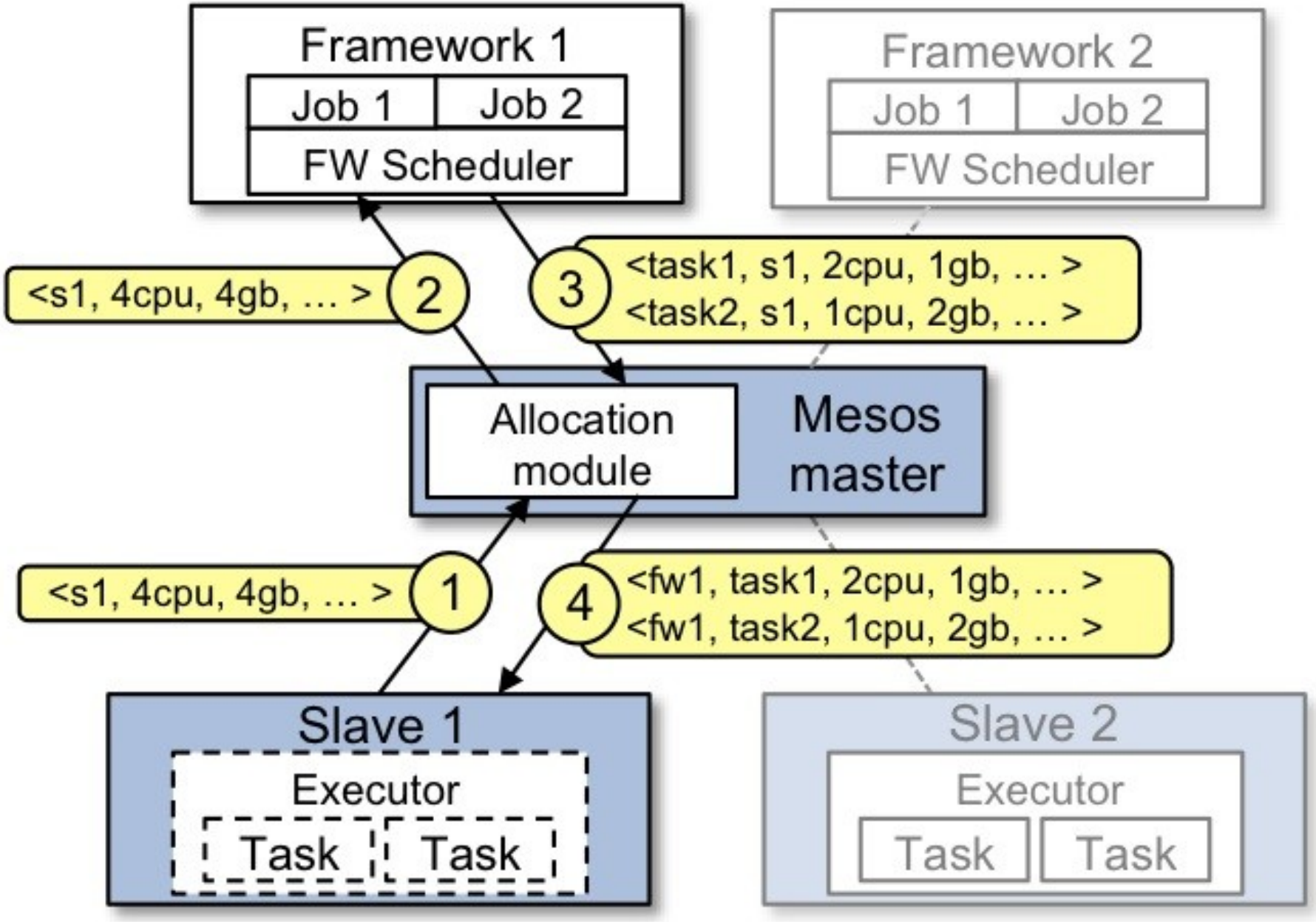
Way of work


distributed framework
Scheduler
Executor
Executor
Executor
resource offers
Mesos master
Mesos slave
Mesos slave
Mesos slave
available resources
distributed kernel

Apache Mesos Architecture

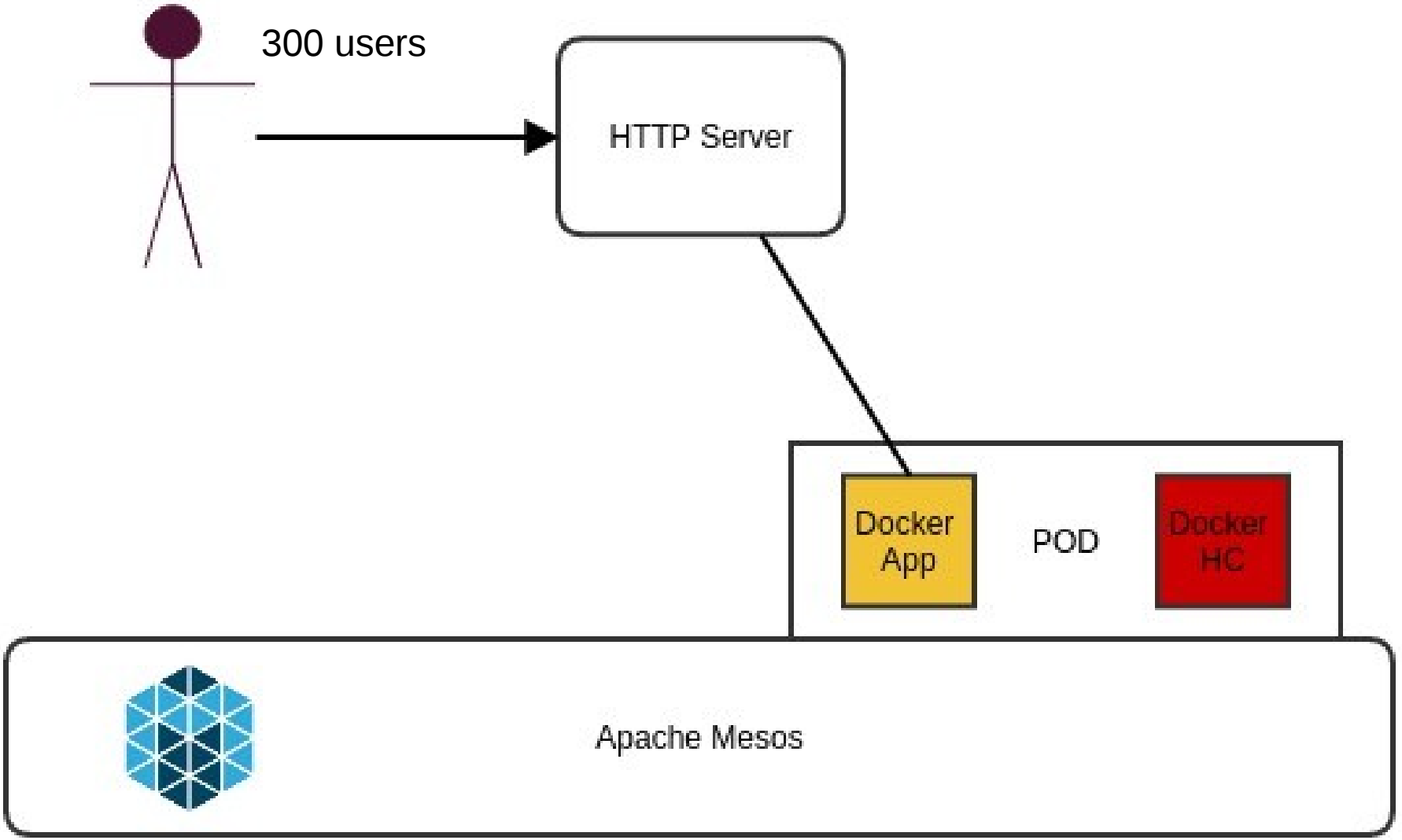


Resource Offer example

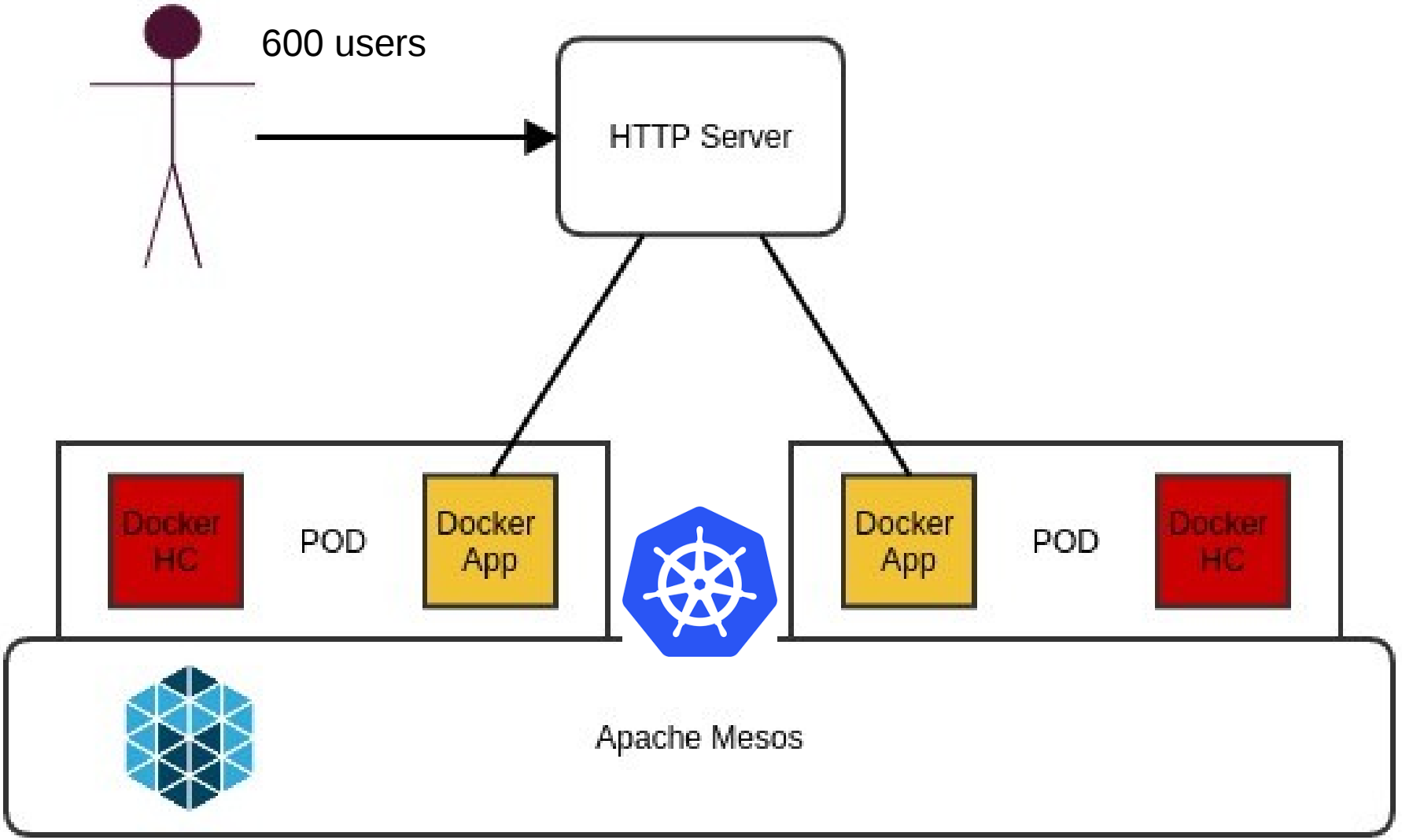


Auto-Scale

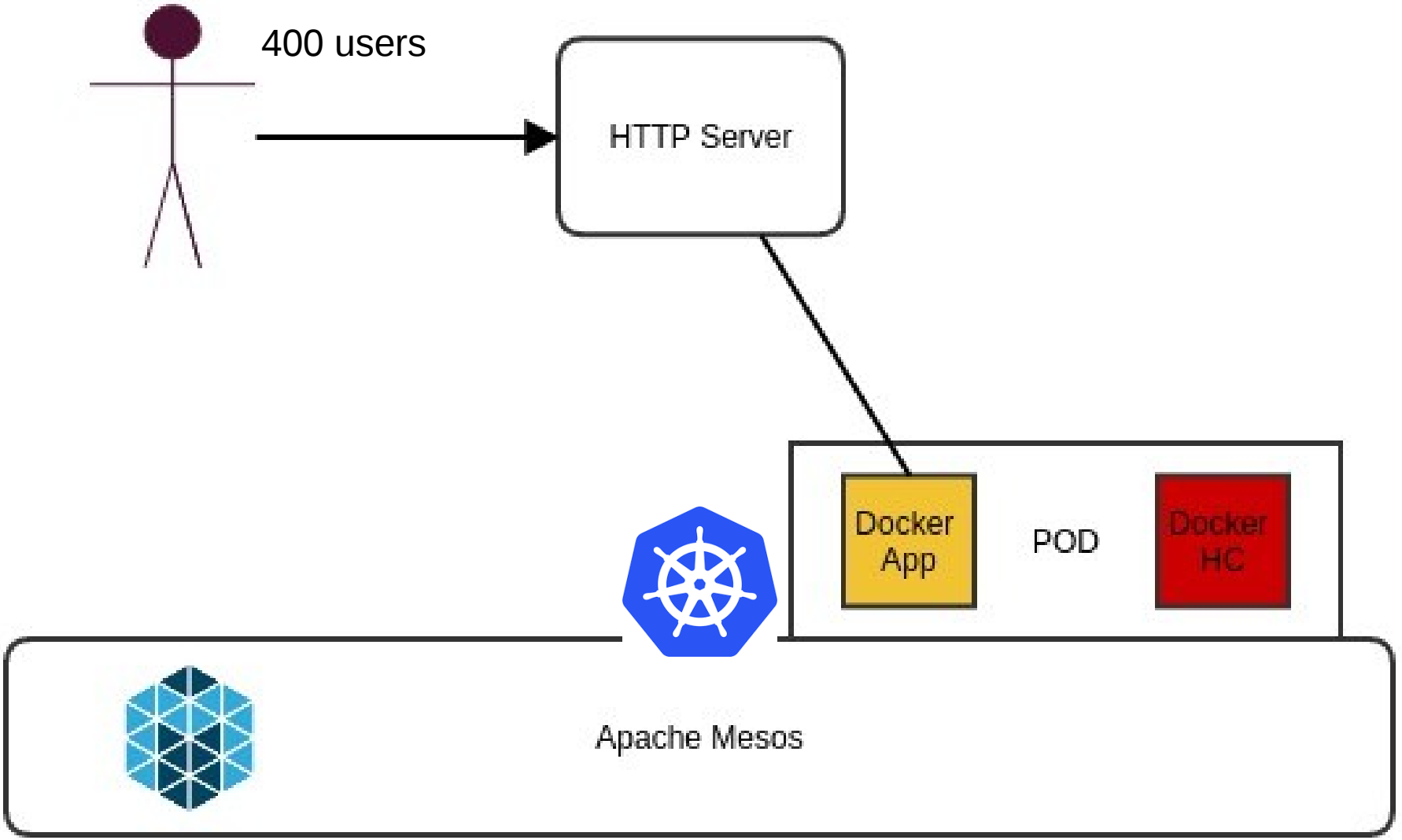
Application



Autoscaling UP

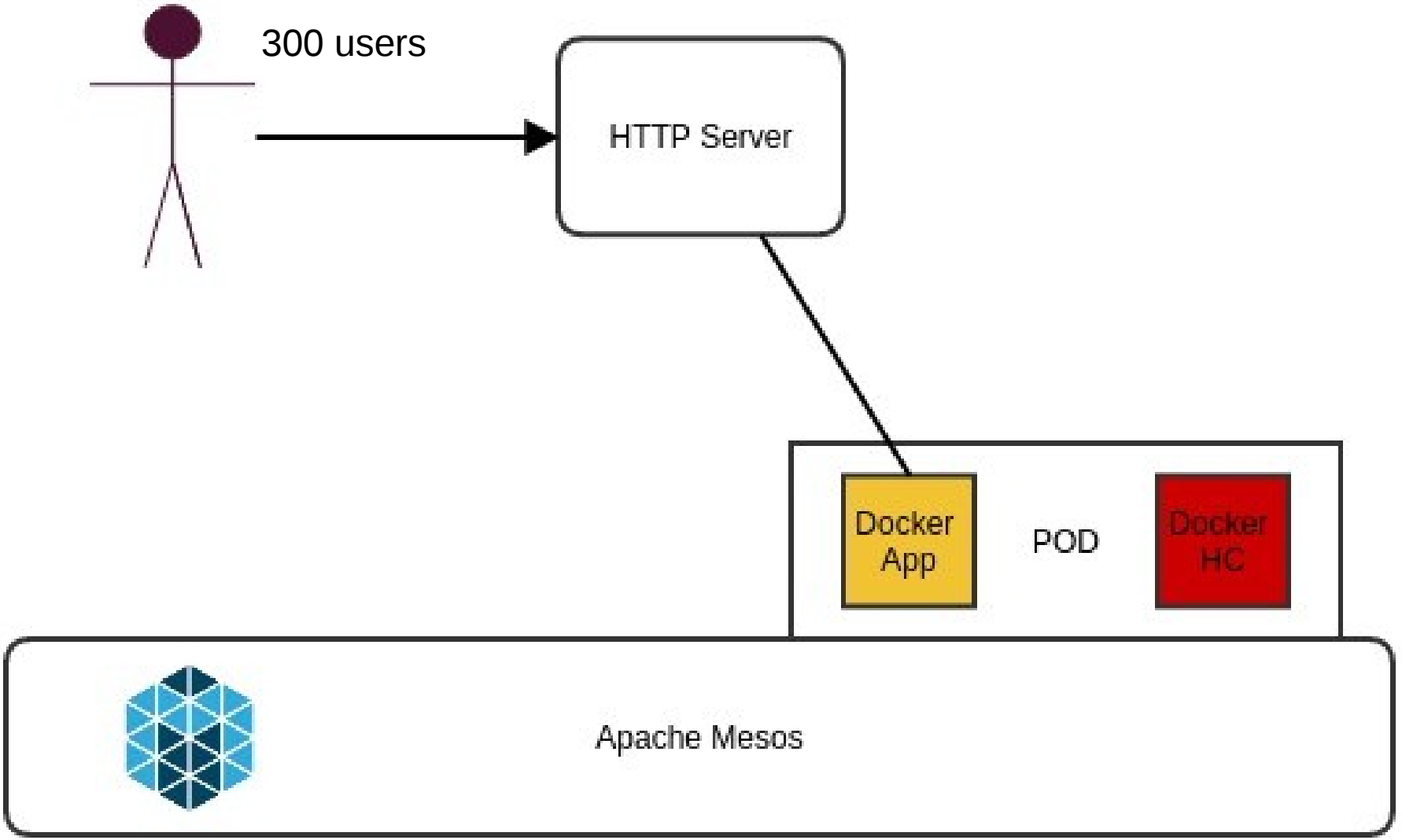


Autoscaling DOWN

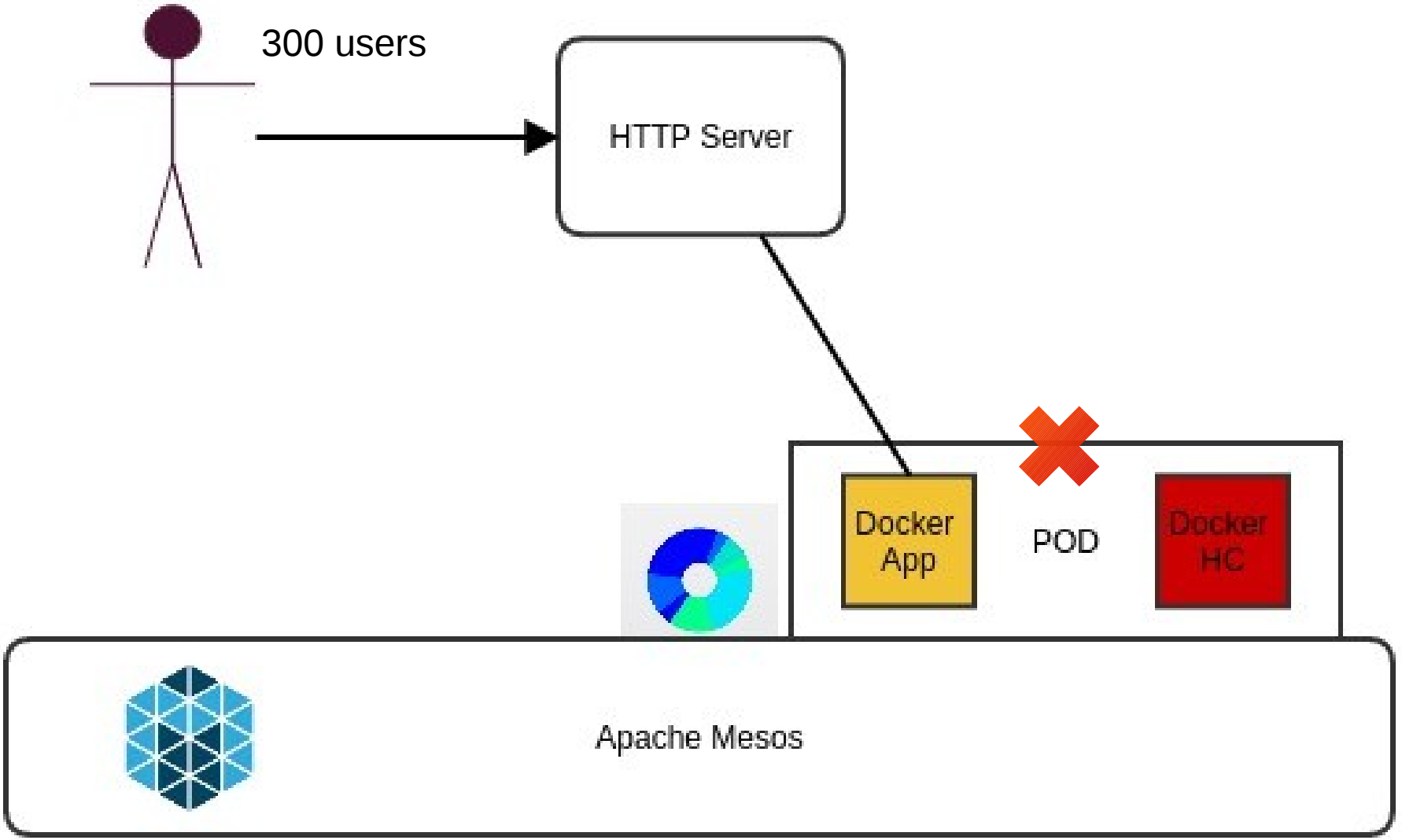


High Availability

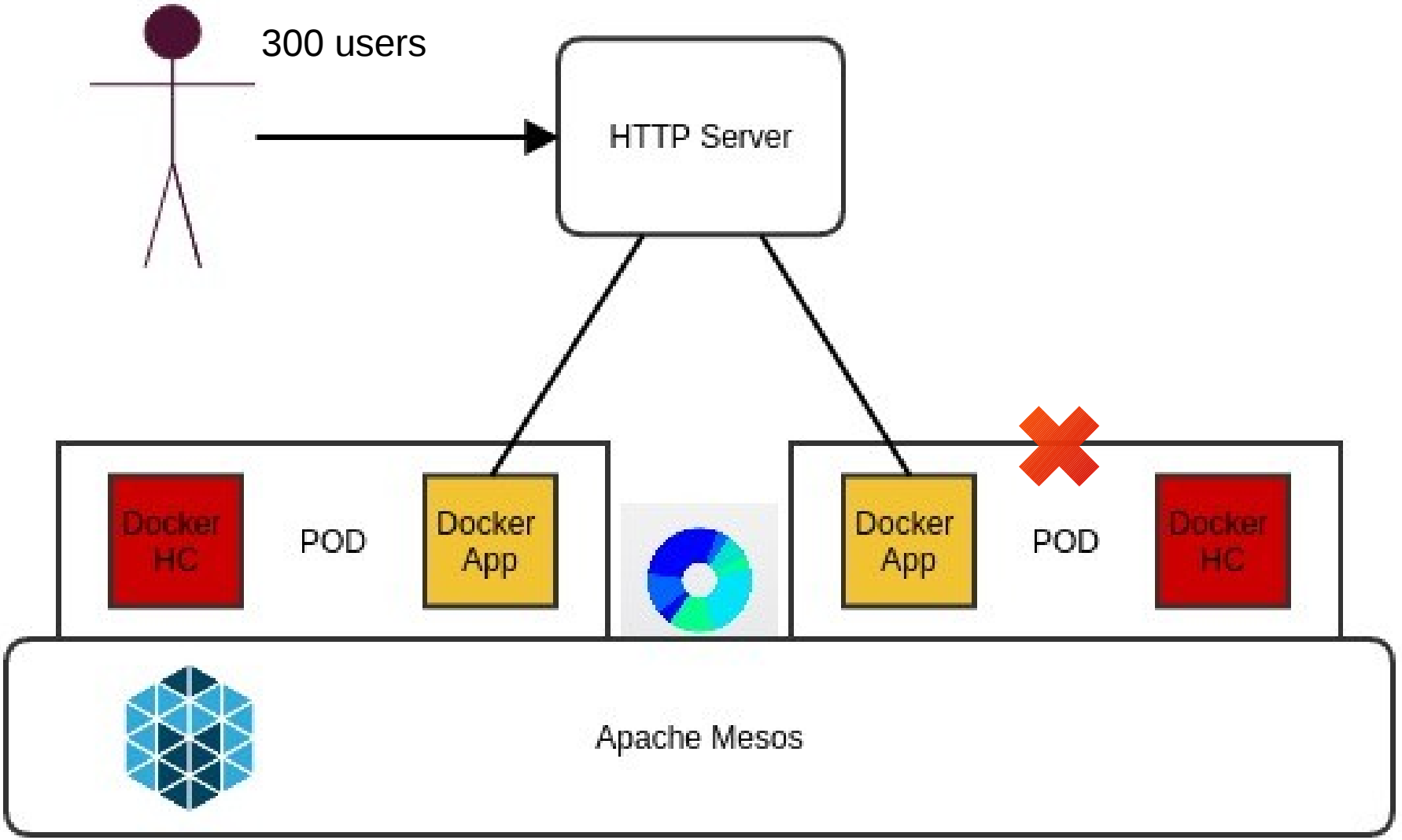
Application Running



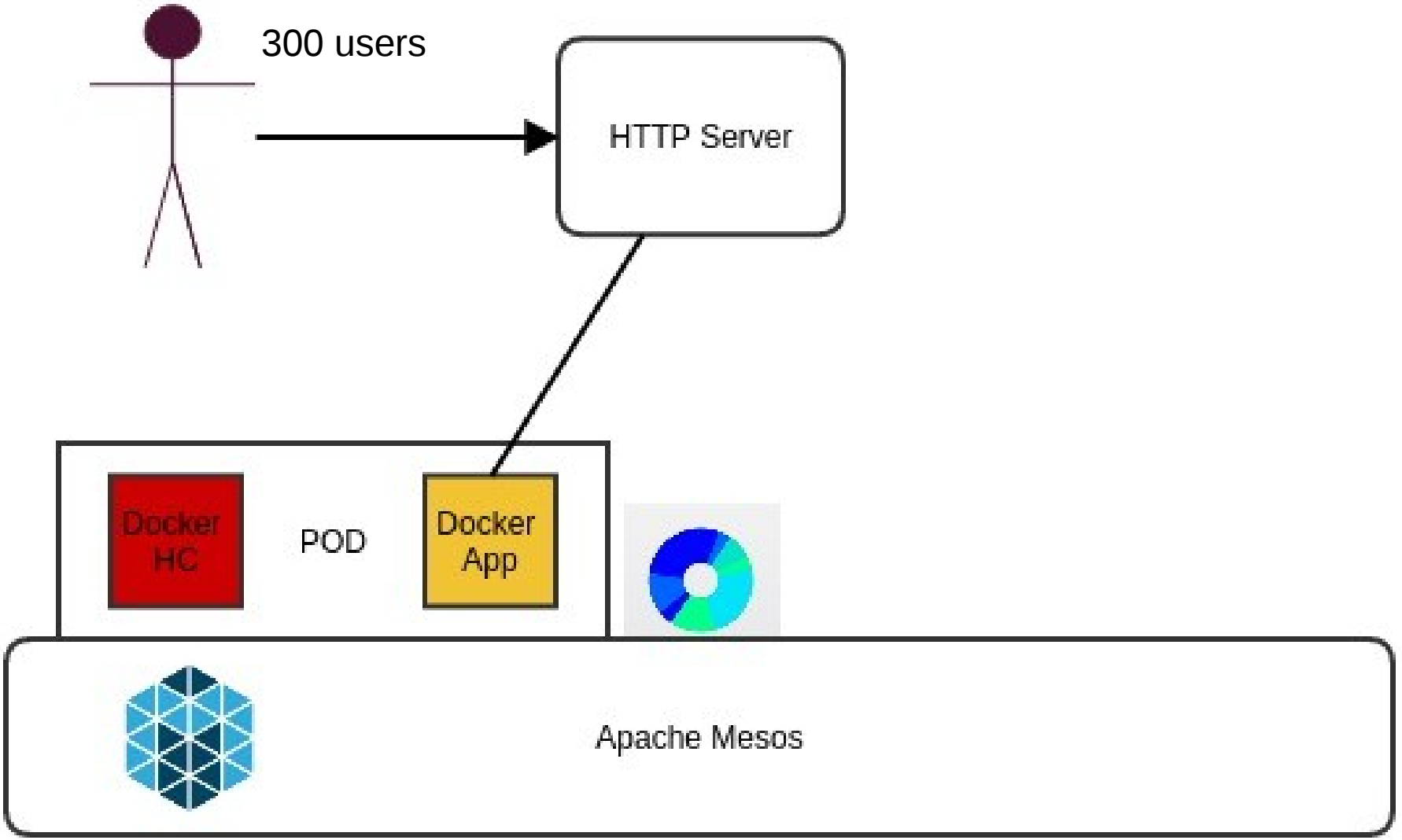
Node Failure



Starting a new node for the application

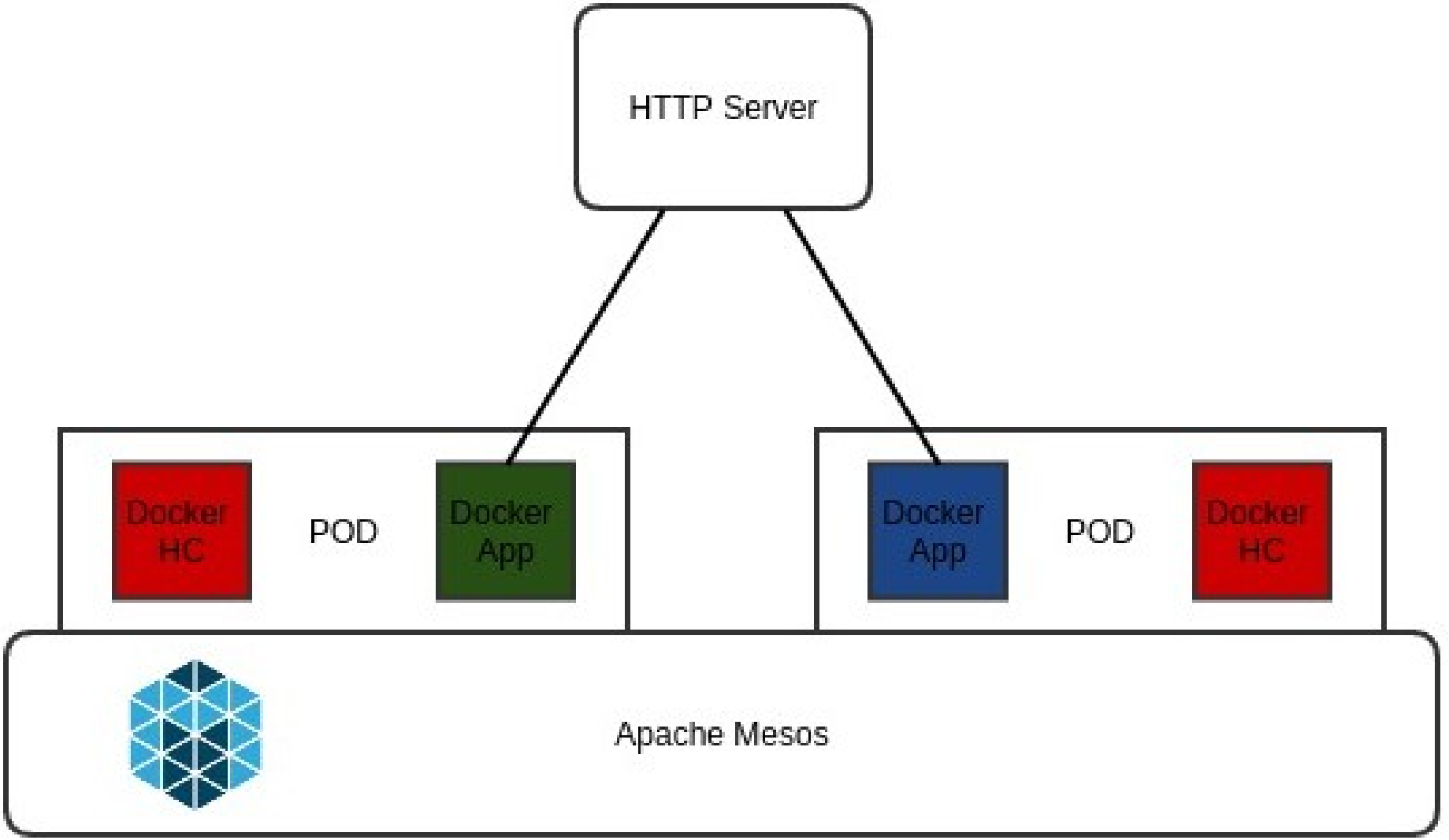


Application Running

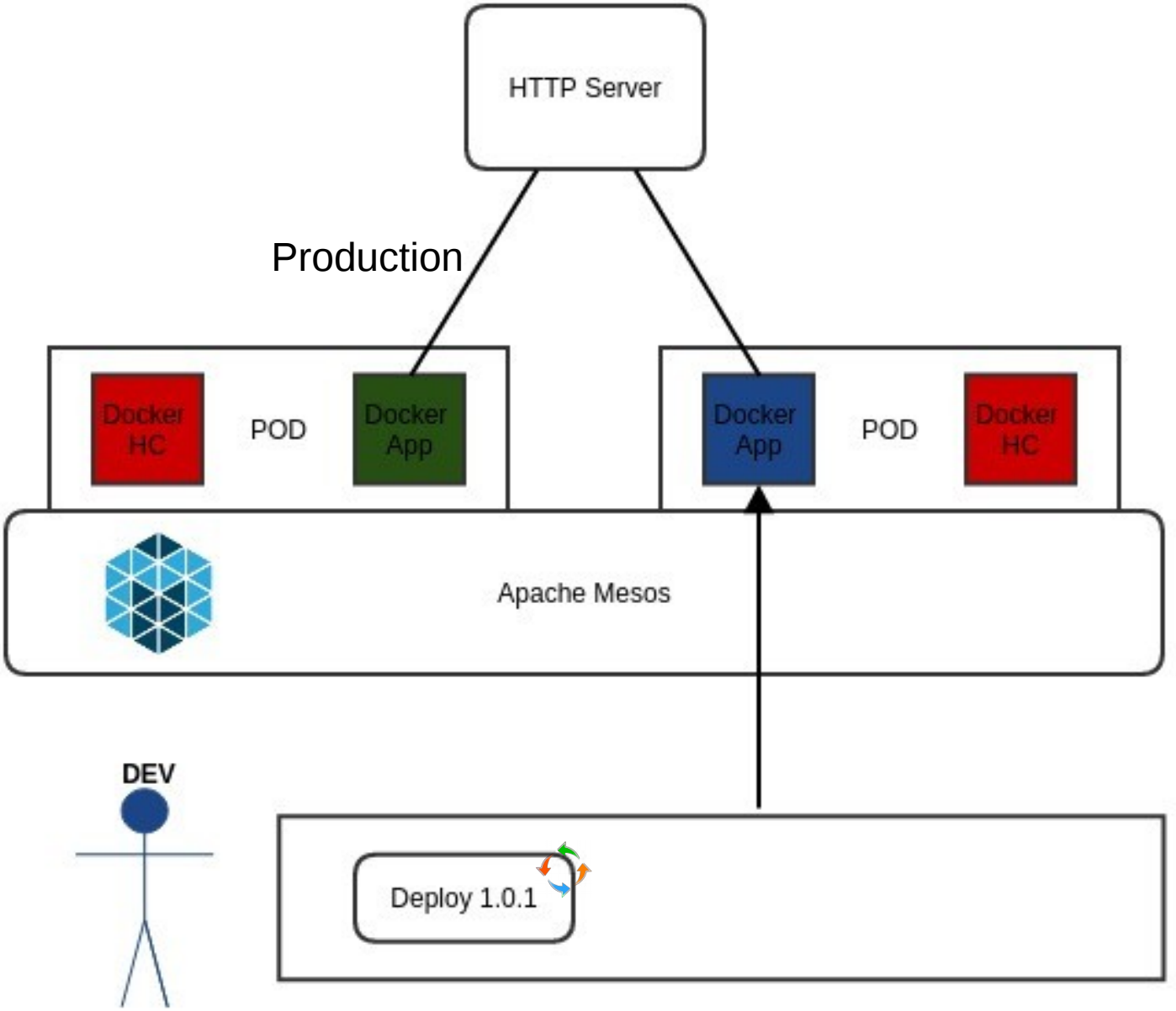


Continuous Delivery
Blue-Green Deployments

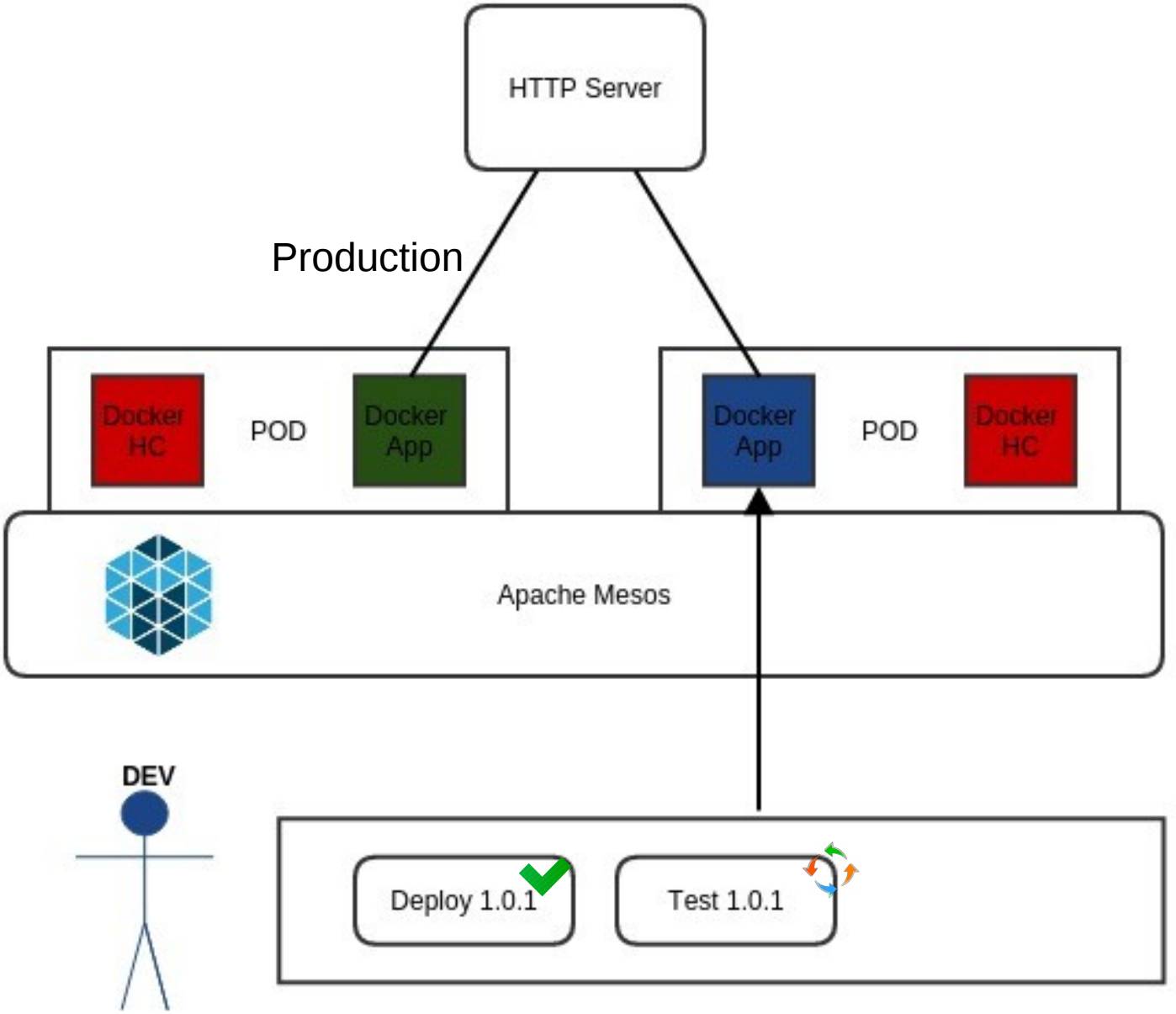
Continuous Delivery – Blue / Green



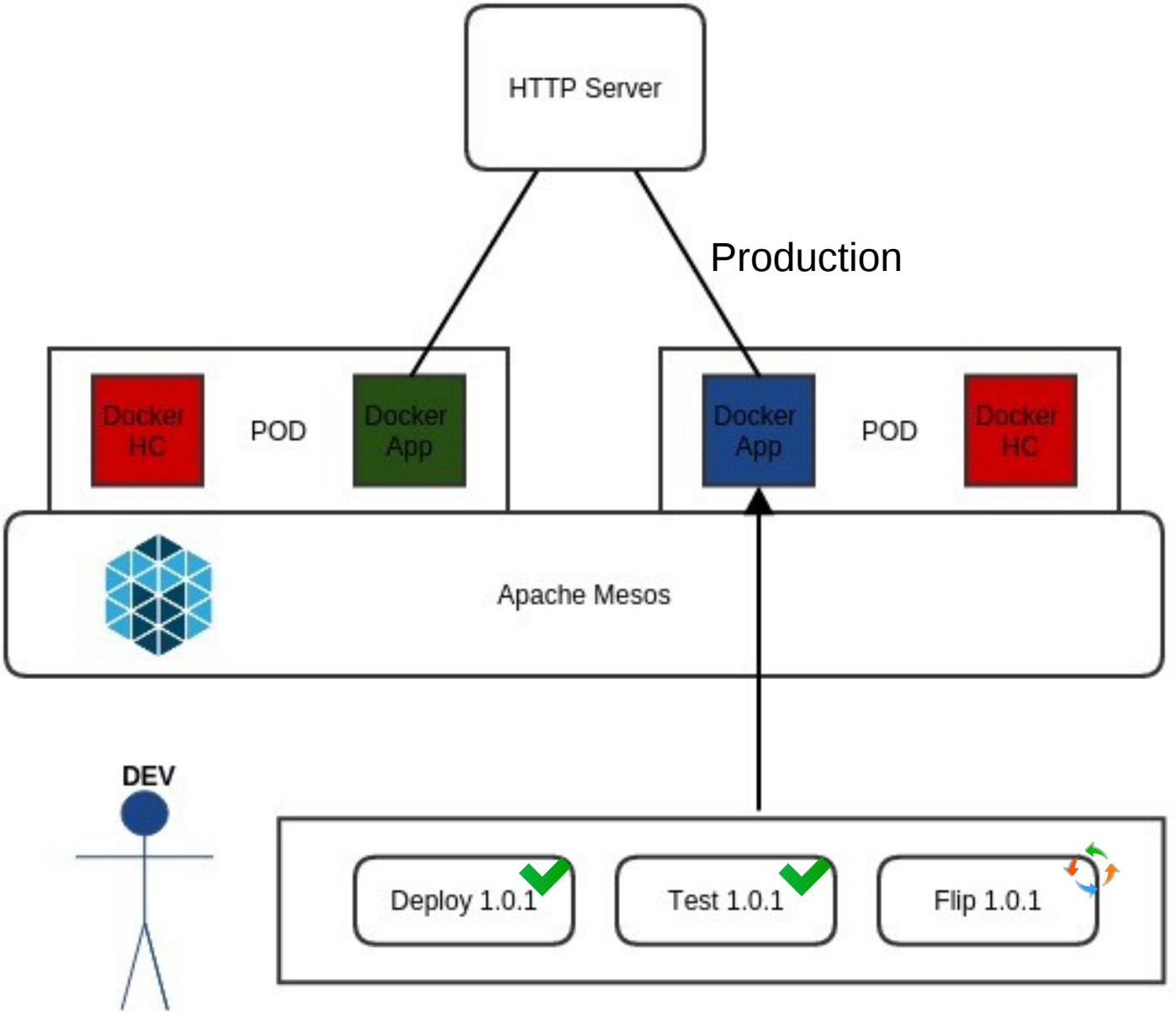
Deploy the application



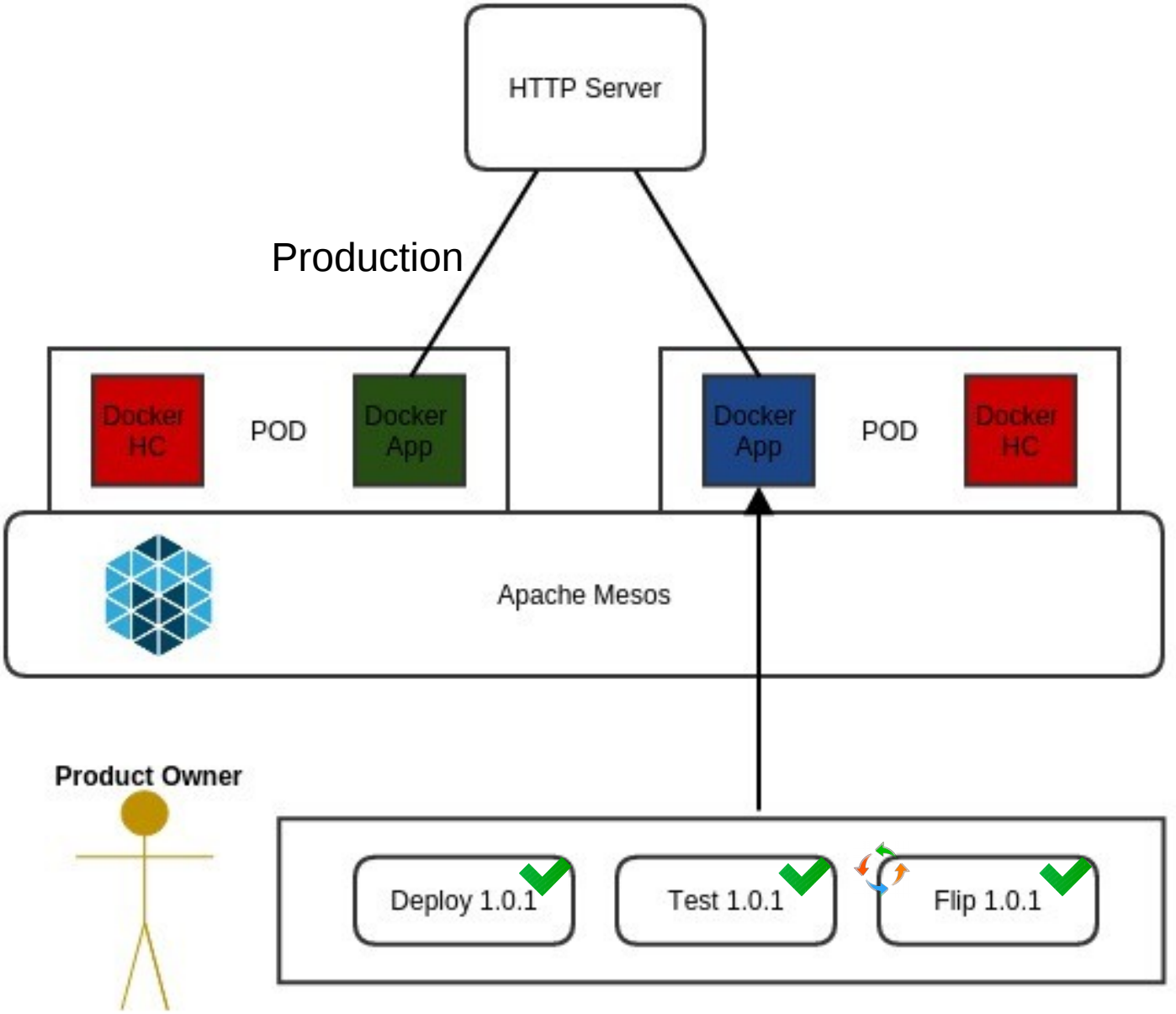
Test the application



Flip the application

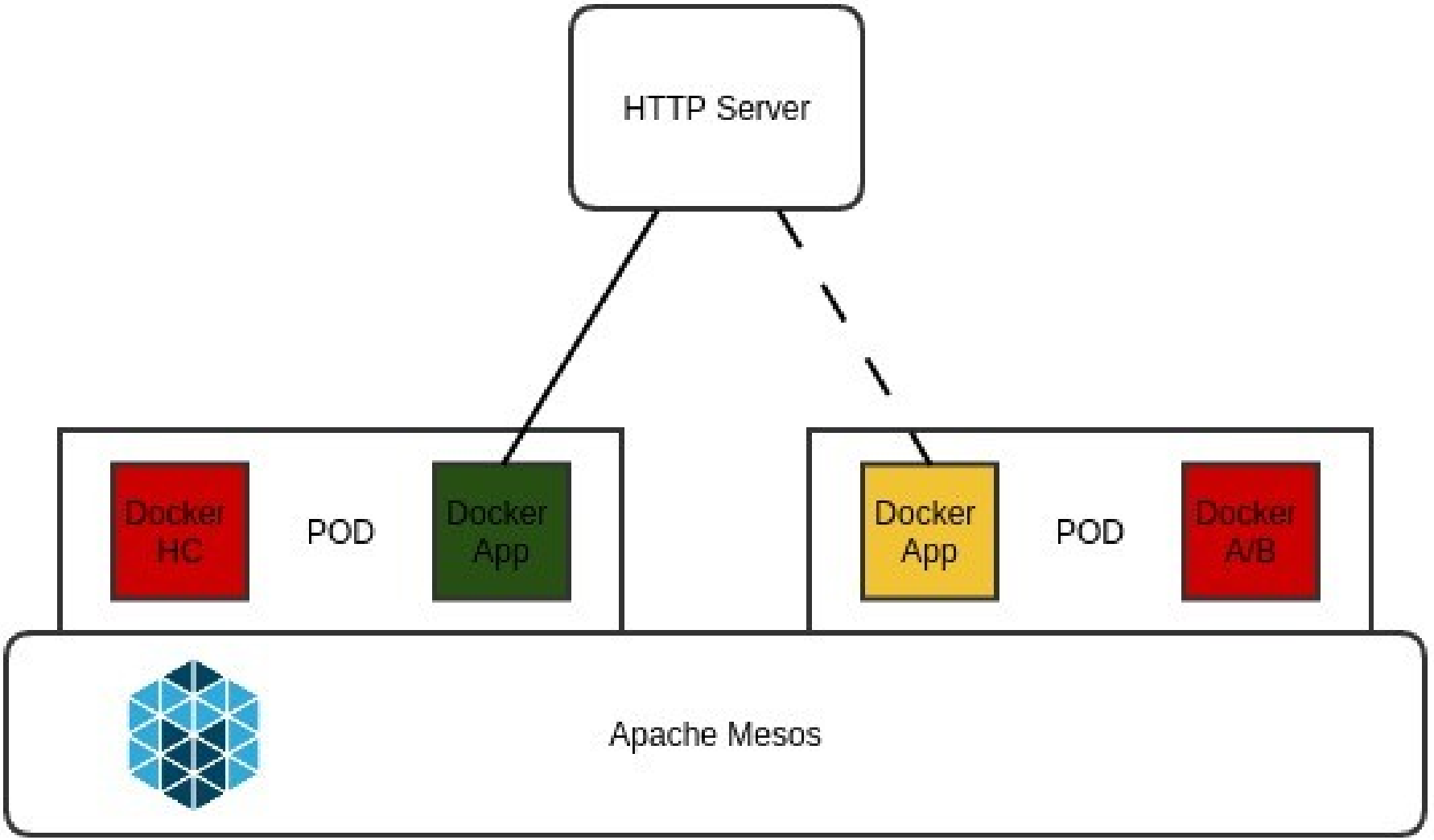


Empowering everyone

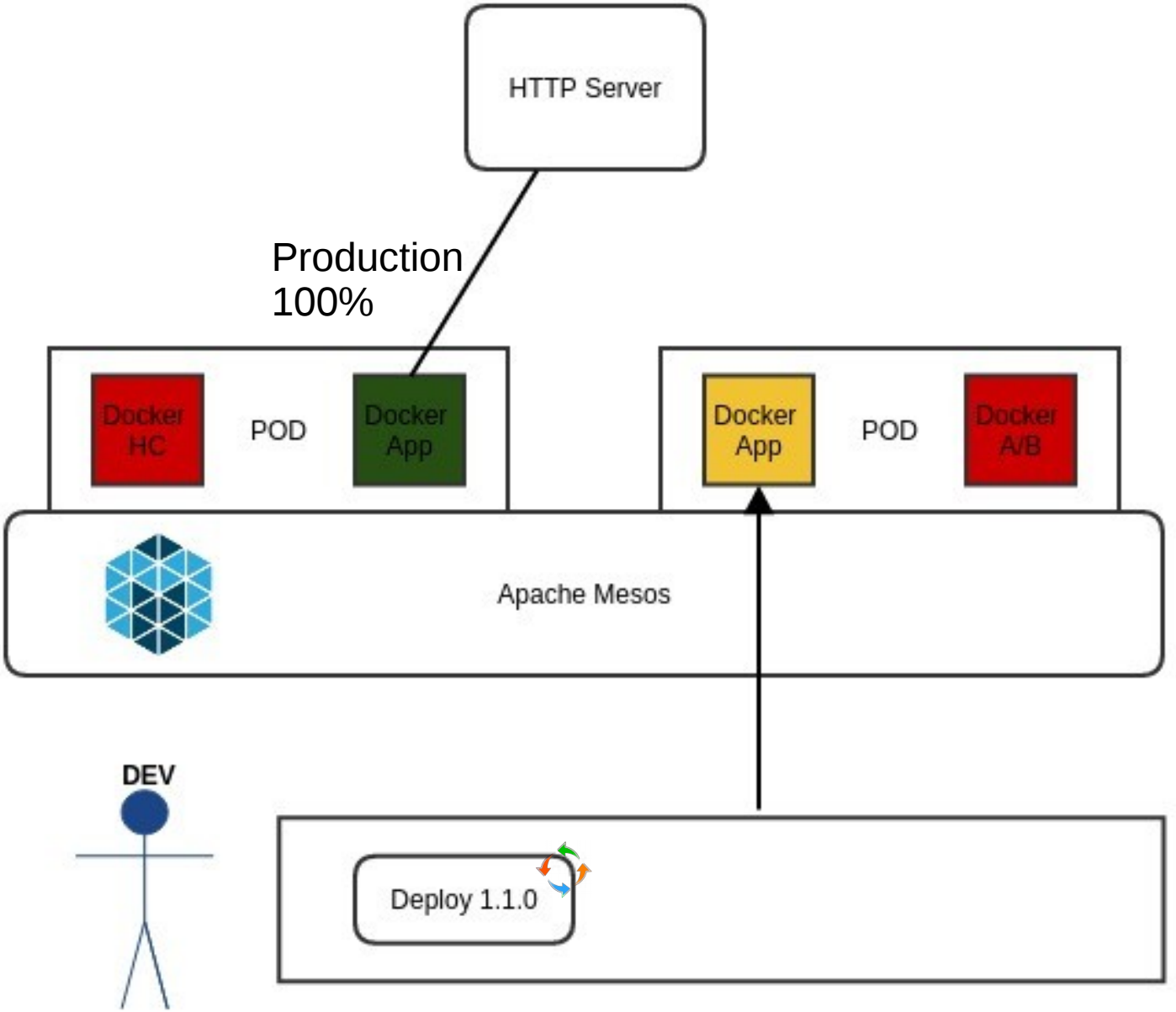


Continuous Delivery
Canary Release

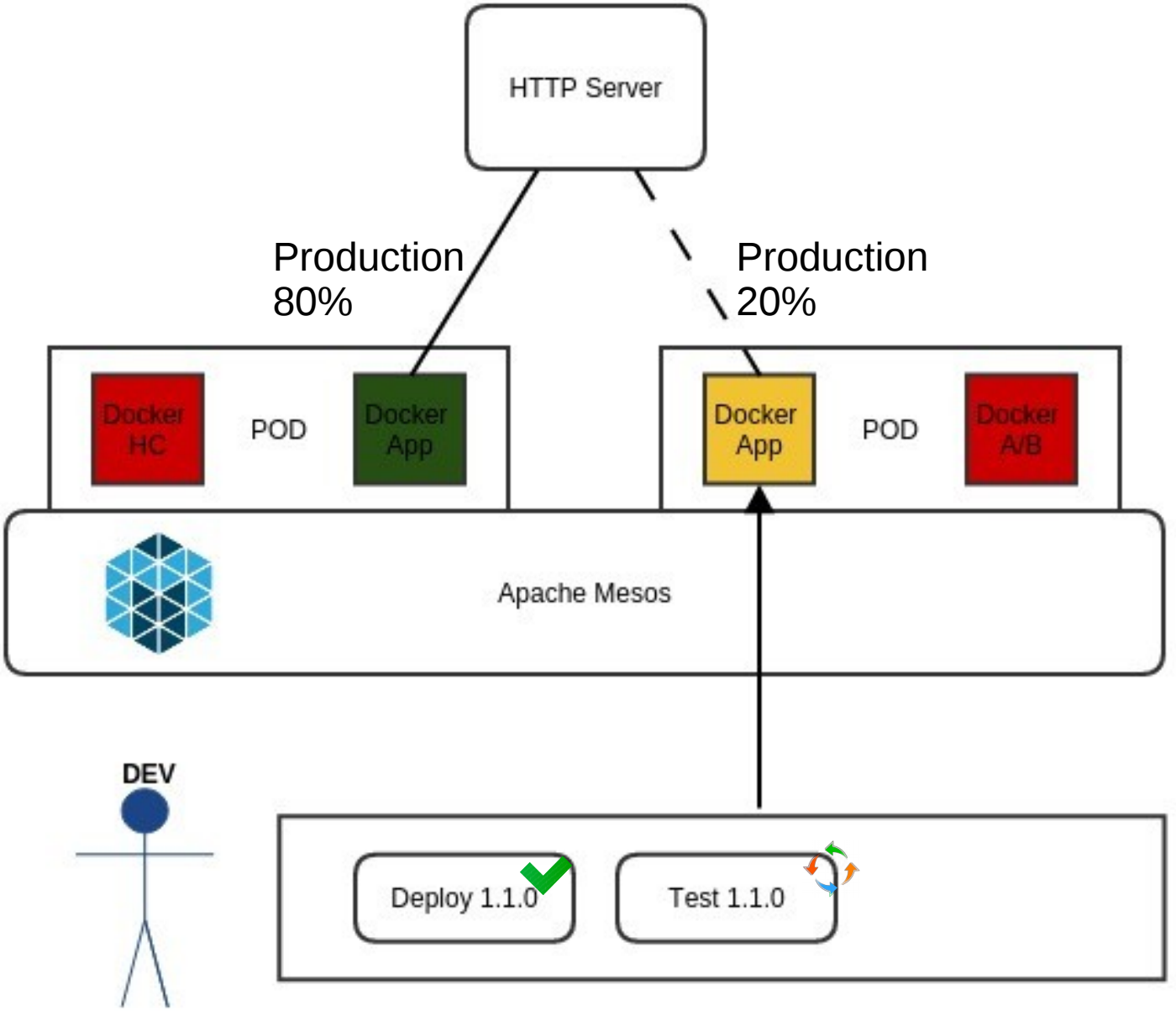
Continuous Delivery – Canary Release



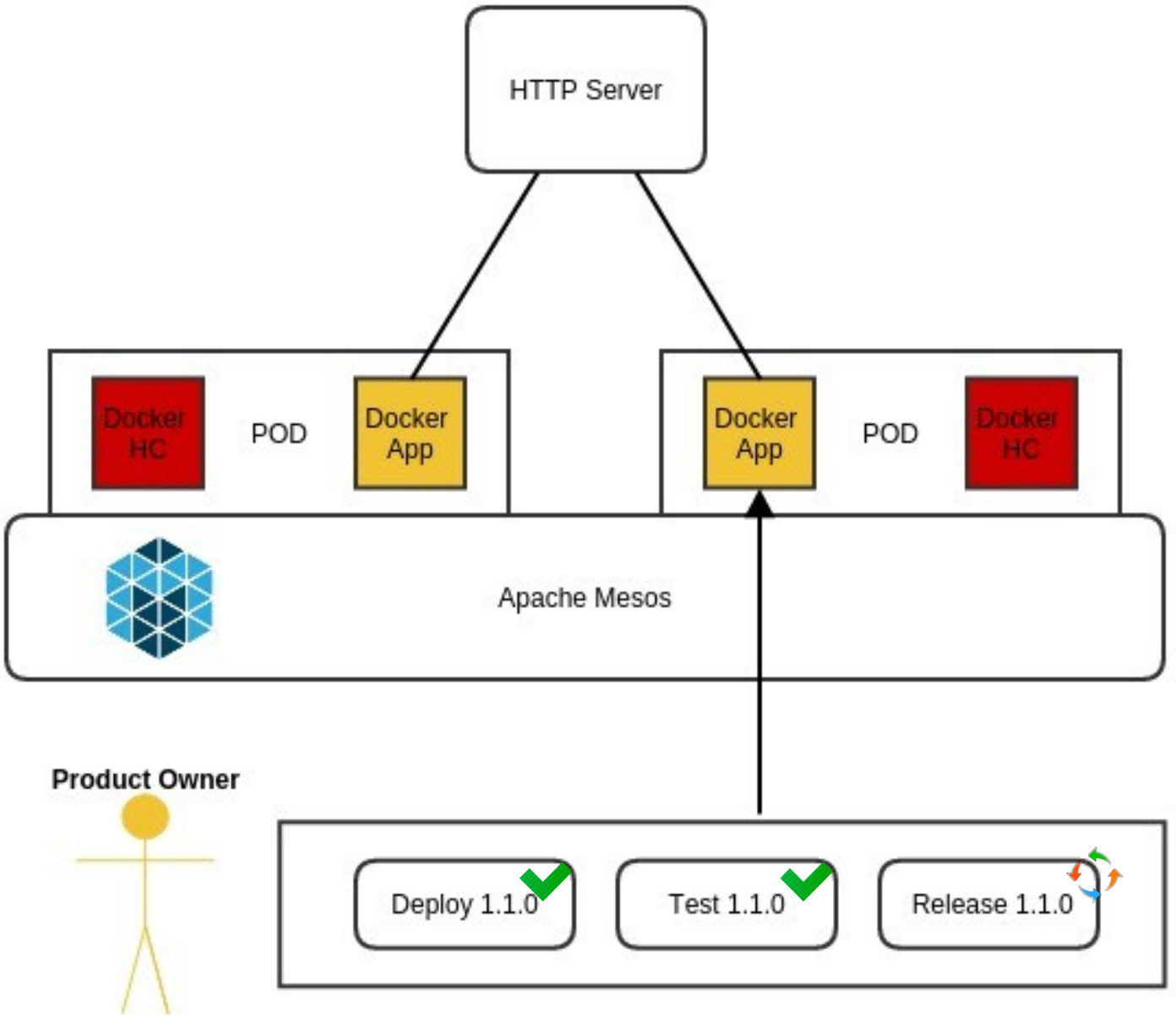
Deploy the new version



Test and Evaluate the new version



Rollout the new Release



Putting into perspective

“If a Docker application is a Lego brick, Kubernetes would be like a kit for building the Millennium Falcon and the Mesos cluster would be like a whole Star Wars universe made of Legos.” ~ Solomon Hykes

Questions?

धन्यवाद

Hindi

多謝

Traditional Chinese

ขอบคุณ

Thai

Спасибо

Russian

Gracias

Spanish

Thank You

English

Dziękuję

Polish

شكرا

Arabic

Obrigado

Brazilian Portuguese

多谢

Simplified Chinese

Danke

German

Grazie

Italian

Merci

French

நன்றி

Tamil

ありがとうございました

Japanese

감사합니다

Korean

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