

Kubernetes in AWS

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Intro

- CTO @ DeveloperTown Starts (dtsarts.com)
- Co-founder program
- The ideal co-founder
- We currently work with 8 Startups
- Team of Developers and Growth Engineers

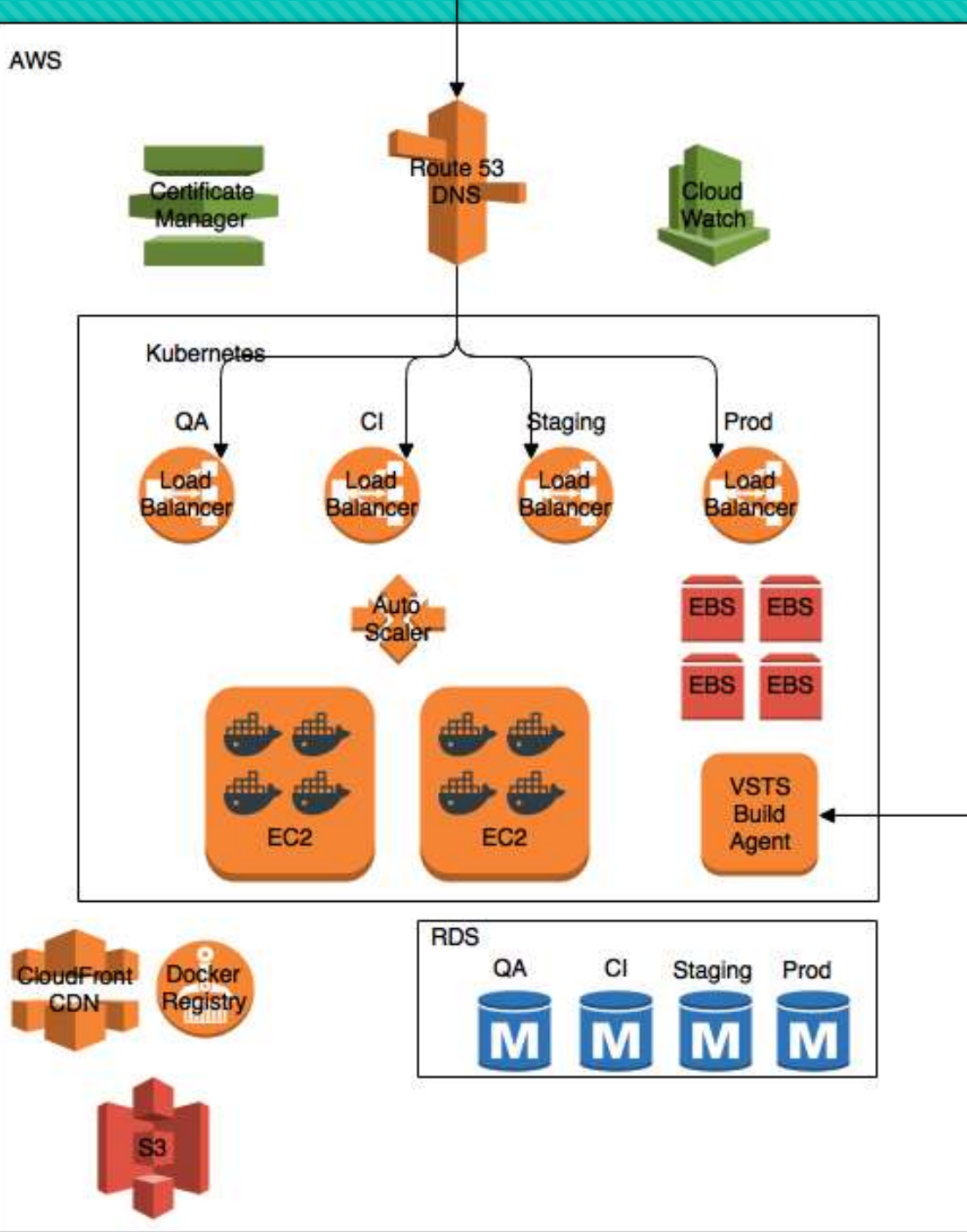
Challenges

- Start ups with tight budgets
- Stack consistency across projects
- Democratize deployment and DevOps
- Deploying Docker containers to the cloud
- Ensuring high availability for our apps
- Minimizing time spent on DevOps for our developers

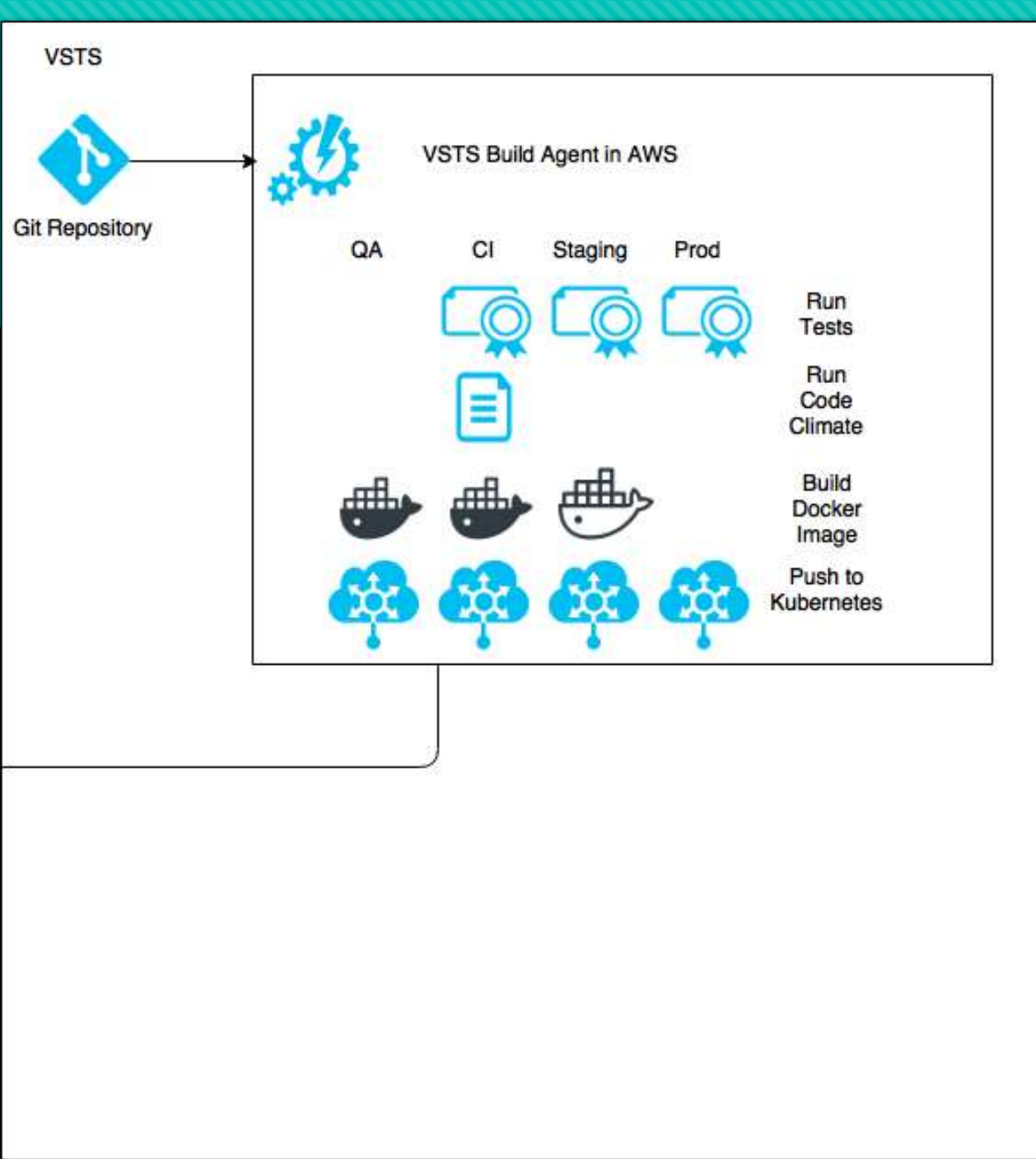
Stack

- AWS
- Docker
- Kubernetes (k8s)
- Kops
- KubeCtl
- Helm

AWS



VSTS



Docker

- Portability - Containerize/Dockerize your apps and deploy anywhere
 - Manage app internal dependencies – libraries
 - Manage app external dependencies (db, redis, etc)
- Maximize usage of server resources – multiple containers on one server
- <https://docker.com>

Kubernetes

- Created by Google
- Kubernetes is Greek for "pilot" or "helmsman of ship"
- Kubernetes is an open-source system for automating deployment, scaling, and management of containerized applications

Terminology

- Node
- Cluster
- Service
- Ingress
- Deployment
- Replica Set
- Pod

K8s - Key Features

- Container orchestration
- Horizontal scaling
- Automated rollouts and rollbacks
- Self-healing
- Internal routing - Service discovery and load balancing
- Secret and configuration management

Kops & KubeCtl

- Kops
 - Kubernetes Ops for AWS (GCE beta support)
 - Automates the provisioning of Kubernetes clusters in AWS
 - Manage your cluster – add new nodes, update volume sizes, change ec2 instance size, etc.
- KubeCtl
 - Manage the resources in your cluster
 - Bring up pods, set up scaling policies, manage internal routing, etc
 - Cheat Sheet - <https://kubernetes.io/docs/reference/kubectl/cheatsheet/>

Helm

- Helm helps you manage Kubernetes applications
- Helm Charts helps you define, install, and upgrade even the most complex Kubernetes application.
 - Charts are a collection of files that describe a related set of resources
 - Such as an API, DB, Redis, Nginx Pods
- <https://helm.sh>

Links

- Kubernetes: [Kubernetes.io](https://kubernetes.io)
- Docker: docker.com
- Kops: <https://github.com/kubernetes/kops/>
- Helm: helm.sh
- Kube Apps: <https://hub.kubeapps.com>
- Children's Guide: <https://deis.com/blog/2016/kubernetes-illustrated-guide/>
- Source: <https://github.com/darye/kopshelper>



Questions?