HELM

Application packaging and management for Kubernetes

WHAT IS HELM?

- Helm Charts helps you define, install, and upgrade Kubernetes application.
- Charts are easy to create, version, share, and publish
- The latest version of Helm is maintained by the CNCF

BUT.. WHAT DOES IT DO?

1. Generates k8s API, using YAML templates
2. Manages the application life-cycle using Tiller

TEMPLATING

HELM CHART

```
├──── .travis.yml
├──── deployment
│     └──── chart
│         ├──── Chart.yaml          <-- Chart metadata

│         ├──── templates
│         │     ├──── deployment.yaml
│         │     ├──── ingress.yaml
│         │     └──── service.yaml
│         └──── values.yaml         <-- Default deploy values
├──── src
│     ├──── ..
│     ├──── ..
```

SAMPLE API

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: nginx-deployment
  labels:
    app: nginx
spec:
  replicas: 3
  selector:
    matchLabels:
      app: nginx
  template:
    metadata:
      labels:
        app: nginx
```

SAMPLE TEMPLATE

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: {{ template "fullname" . }}
  labels:
    app: {{ template "name" . }}
spec:
  replicas: {{ .Values.replicaCount }}
  selector:
    matchLabels:
      app: {{ template "name" . }}
  template:
    metadata:
      labels:
        app: {{ template "name" . }}
```

DEMO

```
#
# Example installation
#
helm install deployment/chart --name myrelease \
   --set image.tag="$TRAVIS_COMMIT" \
   --set replicaCount=5
```

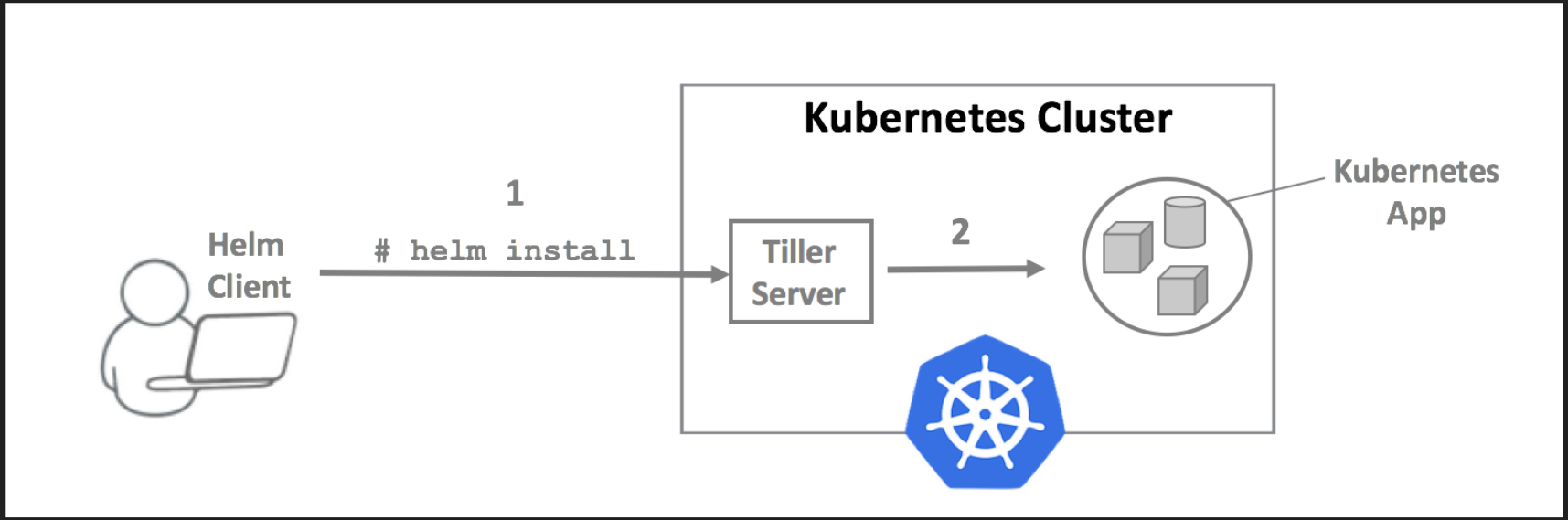
GENERATED YAML

```
$ helm install deployment/chart --name=myrelease \
   --set image.tag=1.2.99 \
   --set replicaCount=5 \
   --dry-run \
   --debug


..
..

---
# Source: chart/templates/deployment.yaml
apiVersion: apps/v1
kind: Deployment
metadata:
  name: myrelease-chart
```

MANAGE APPLICATION LIFE-CYCLE



LIFE CYCLE ACTIONS

1. install
2. rollback
3. upgrade
4. delete

AND OTHER FEATURES

- ls
- search
- create
- package
- init

DEMO

INSTALLATION

1. Install minikube
2. Install kubectl
3. Install helm

SETUP

```
#
# Create a k8s cluster
#
minikube start

#
# Install Tiller
#
helm init
```

FIND SOFTWARE

```
$ helm search jenkins
NAME            VERSION DESCRIPTION
stable/jenkins  0.13.1  Open source continuous integration server. It s...



$ helm search redis
NAME            VERSION DESCRIPTION
stable/redis    1.1.11  Open source, advanced key-value store. It is of...
stable/redis-ha 2.0.0   Highly available Redis cluster with multiple se...
stable/sensu    0.2.0   Sensu monitoring framework backed by the Redis ...
```

INSTALL WORDPRESS

```
$ helm install stable/wordpress --name wordpress
NAME:   wordpress
LAST DEPLOYED: Sun May 27 21:07:09 2018
NAMESPACE: default
STATUS: DEPLOYED

RESOURCES:
==> v1/ConfigMap
NAME                      DATA  AGE
wordpress-mariadb         1     0s
wordpress-mariadb-tests   1     0s

==> v1/PersistentVolumeClaim
NAME                  STATUS  VOLUME                                     CAP
wordpress-mariadb     Bound   pvc-8961f4fb-61e9-11e8-9254-84863f81f164   8Gi
```

SHOW RUNNING "RELEASES"

```
$ helm ls
NAME            REVISION        UPDATED                         STATUS
wordpress       1               Sun May 27 21:07:09 2018        DEPLOYED
```

ACCESS WEBPAGE

```
$ minikube service wordpress-wordpress --url
http://192.168.39.166:32275
http://192.168.39.166:31763
```

QUESTIONS?

- https://myspotontheweb.github.io/presentation-helm/