

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
```

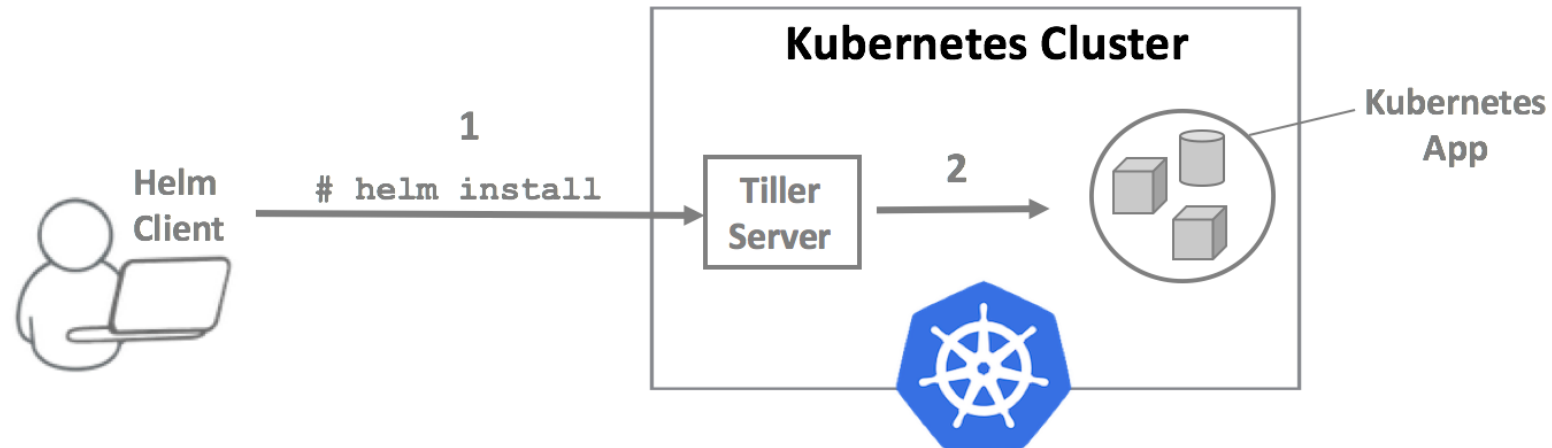
```
..
```

```
..
```

```
---
```

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