Take the Helm

An Intro to Helm

An Acknowledgement

Helm, a package manager for Kubernetes

Helm: Core Concepts

- Chart - expert built recipe for installing an application
- Values - user supplied configuration
- Release - instance of Chart + Values that get deployed in Kubernetes

Prerequisites

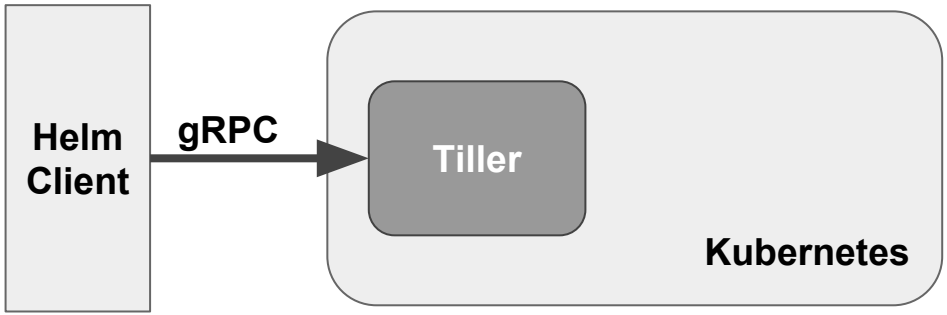
- Download Helm & put it in your path
  - On a Mac: `brew install kubernetes-helm`
  - On Windows: `choco install kubernetes-helm`
  - Get the binary: https://github.com/helm/helm/releases/tag/v2.11.0
- Grab a running Kubernetes cluster
  - Minikube: https://github.com/kubernetes/minikube/releases/tag/v0.30.0

$ helm init

- Configures your local environment
- Creates a pod called Tiller in your cluster

Tiller

- Server-side component
- Runs as a pod in the cluster
- Manages releases in your cluster



Charts

- Are application definitions
- Consist of
  - Metadata
  - Kubernetes resource definitions
  - Configuration
  - Documentation
- Live in chart repositories

Where the Helm do I find charts?

- Lives at github.com/helm/charts
- Stable & Incubator repositories
- ~218 stable charts
- ~53 incubator charts

hub.kubeapps.com

- github.com/helm/monocular

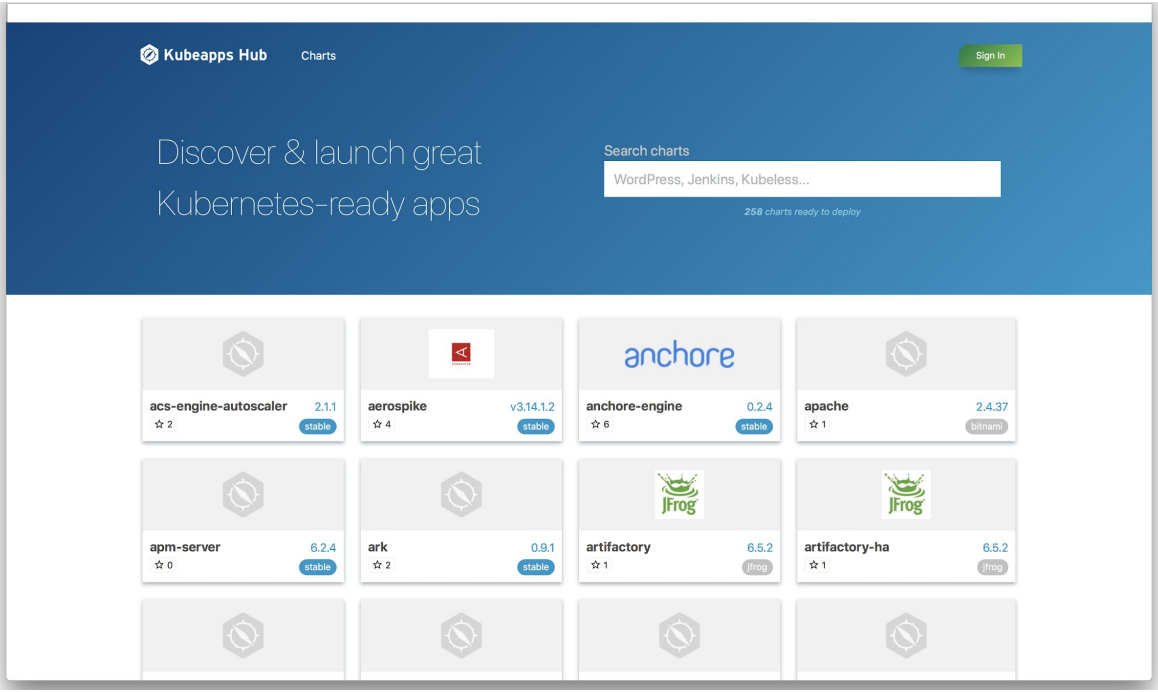


Chart repositories

- Has an index.yaml file
- Any web server accessible via http(s)

Recap

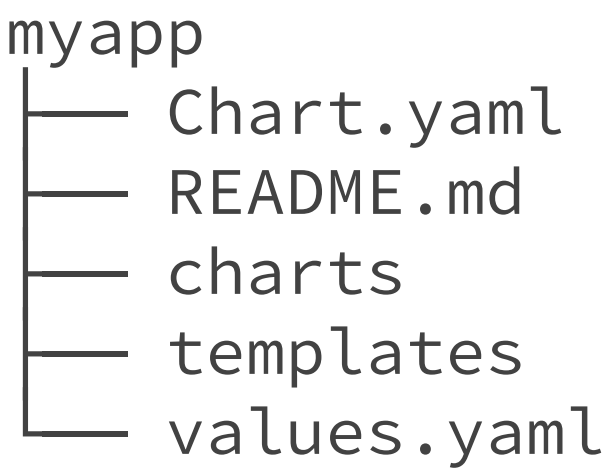
- Helm is the client
- Tiller is the server
- Charts are the “package”
- Chart + Values = Release

Demo Time!

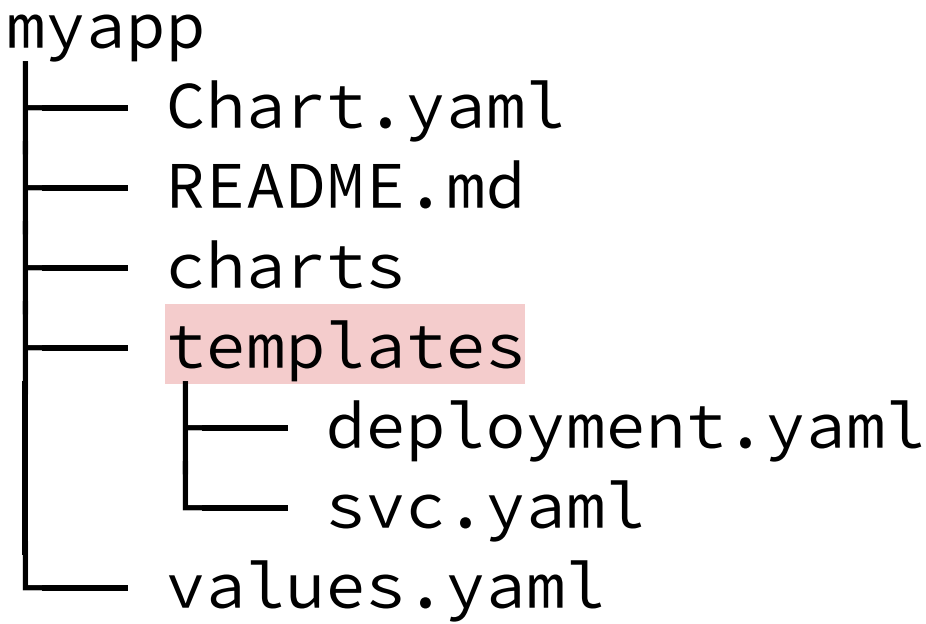
Chart your course

$ helm create <name>

Chart Structure



Templates


myapp
Chart.yaml
README.md
charts
templates
deployment.yaml
svc.yaml
values.yaml

Configuration

```
myapp
├── Chart.yaml
├── README.md
├── charts
├── templates
└── values.yaml
└── requirements.yaml
```

values.yaml

```
image: mycompany/myapp:1.0.0
imagePullPolicy: IfNotPresent
service:
  port: 80
```

templates/deployment.yaml

```
apiVersion: extensions/v1beta1
kind: Deployment
spec:
  template:
    spec:
      containers:
      - name: {{ .Chart.Name }}
        image: "{{ .Values.image }}"
        imagePullPolicy: {{ .Values.imagePullPolicy }}
        ports:
        - containerPort: {{ .Values.service.port }}
```

Configuration

values.yaml

```
image: mycompany/myapp:1.0.0
imagePullPolicy: IfNotPresent
service:
  port: 80
```

Configure values on command line with the --set flag

```
$ helm install --set service.port=8080 myapp/
```

Or pass in a new values file on command line with the -f flag

```
$ helm install -f myvalues.yaml myapp
```

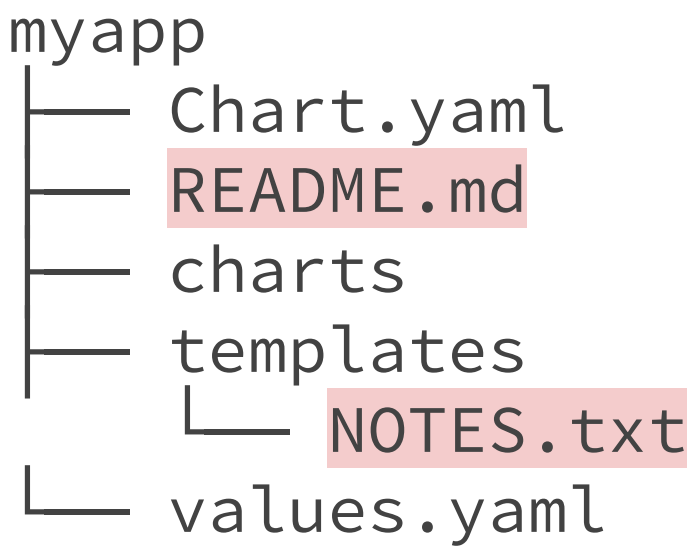
Dependencies

```
myapp
├── Chart.yaml
├── README.md
├── charts
├── templates
├── values.yaml
└── requirements.yaml
```

requirements.yaml

```
dependencies:
- name: mariadb
  version: 0.5.2
  repository: http://storage.googleapis.com/kubernetes-charts
```

Documentation



Metadata

```
myapp
├── Chart.yaml
├── README.md
├── charts
├── templates
└── values.yaml
└── requirements.yaml
```

Want to become a Helmette?

Helm Community

- Lots of contributors (391 according to GitHub)
- Kubernetes slack channels: #helm-users, #helm-dev
- Weekly updates and demos at SIG Apps and the public Helm developer call (09:30 Pacific Time)
- Documentation at http://docs.helm.sh

Helpful Links

- Helm website: http://helm.sh
- Helm quickstart: https://docs.helm.sh/using_helm/#quickstart
- Helm documentation: https://docs.helm.sh
- Chart tips & tricks: https://youtu.be/16FU6U8eOdk?t=12m36s