

Introduction to Helm

Overview

Helm is a package manager for Kubernetes (its packages are called 'charts')

Helm charts contain Kubernetes object definitions, but add the capacity for additional templating, allowing customizable settings when the chart is installed

Helm has a server component (tiller) which runs in the Kubernetes cluster to perform most actions, this must be installed to install charts

Charts can be obtained from the official 'stable' repository, but it is also simple for an organization to operate its own chart repository

Basic Use

helm init # let helm set up both local data files and install its server component

helm search # search available charts (use helm search <repo-name>/ to search just a particular repository)

helm install <chart-name> # install a chart (use --values to specify a customized values file)

helm inspect values <chart-name> # fetch a chart's base values file for customization

helm list # list installed charts ('releases')

helm delete # remove a release (use --purge to remove fully)

Chart Structure

Chart.yaml - contains the chart's metadata

Values.yaml - contains default chart settings

templates/ - contains the meat of the chart, all yaml files describing kubernetes objects (whether or not they have templated values)

templates/_helpers.tpl - optional file which can contain helper code for filling in the templates

Outline of a Simple Chart

Chart.yaml

```
apiVersion: "v1"  
name: "nginx"  
version: 1.0.0  
appVersion: 1.7.9  
description: "A simple nginx deployment which  
serves a static page"
```

values.yaml

```
# The label to apply to this deployment,  
# used to manage multiple instances of the  
same application  
Instance: default  
  
# The HTML data that nginx should serve  
Data: |-  
  <html>  
  <body>  
  <h1>Hello world!</h1>  
  </body>  
  </html>
```

Creating a Chart Repository

A repository is just a directory containing an index file and charts packaged as tarballs which is served via HTTP(S).

```
helm package <chart-directory> # package a chart into the current directory
```

```
helm repo index . # (re)build the current directory's index file
```

```
helm repo add <repo-name> <repo-addr> # add a non-official repository
```

Note: It is possible to install a local chart without going through a repository, which is very helpful for development, just use `helm install <chart-directory>`