



Helm Intro

What We Will Cover

- What is Helm and *why you need it*
- Where is the Helm project going?
- Where you can learn what's coming in Helm v3
- How you can get involved

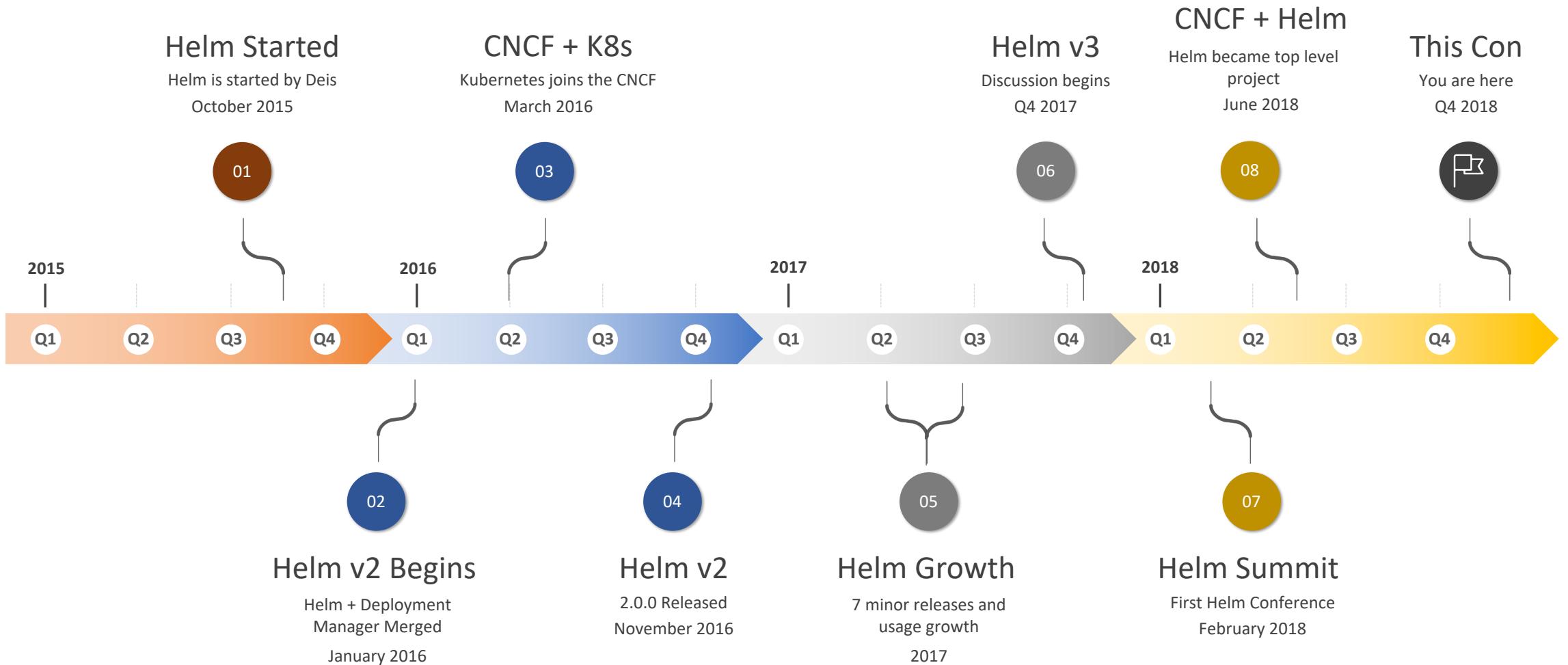


Hi, I'm Matt

- 1 of 3 of the Helm Matts
- I work at Samsung SDS
- I'm a Helm Maintainer
- Also a Kubernetes SIG Chair
- I've written things and built stuff
- mattfarina.com

What is Helm?

1. A CNCF Project
2. A package manager, that is a method to easily share, consume, and manage applications defined by Kubernetes resources



01 Kubernetes	02 gRPC	03 Helm	04 Prometheus	05 Fluentd	06 Harbor	07 Envoy	08 Jaeger	09 rtk	10 Linkerd	11 containerd	12 Rook	13 CoreDNS	14 OpenTracing	15 CNI	16 Vitess	17 Notary	18 TUF
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CNCF graduated and incubating projects
ordered by number of contributors

A large, solid blue circle with a thin white border is centered on a white background. Inside the circle, the text "57+ Million" is written in a bold, white, sans-serif font.

57+ Million

Why move to the CNCF?



SUPPORT WITH CONFERENCES



HELP WITH FIGURING OUR
CHART SHARING



DIRECT ACCESS TO CNCF TEAM
TO KEEP UP WITH GROWTH

Package Manager

A method to **easily share, consume, and manage applications** defined by Kubernetes resources

Configuration Manager

Package Manager

Binaries

Config

Operating System

Chef, Puppet, Ansible

apt, yum, etc

ELF Binaries

Config in /etc

GNU/Linux

Helmfile, Armada, Landscaper, etc

Helm

Images

K8s Objects

Kubernetes

By Example: WordPress



Questions like, will it be served with HTTPS?



The Application is 6 Kubernetes objects

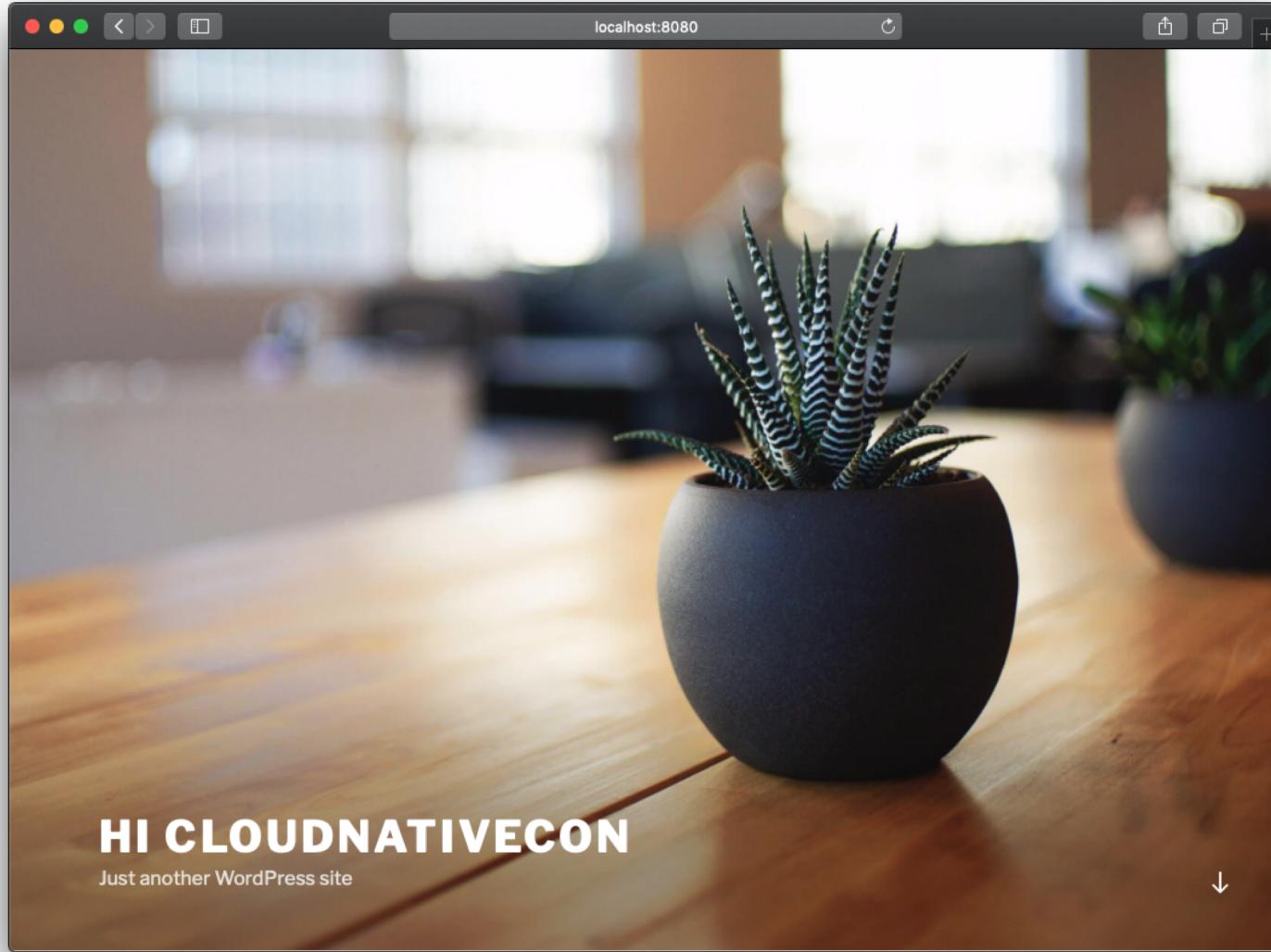


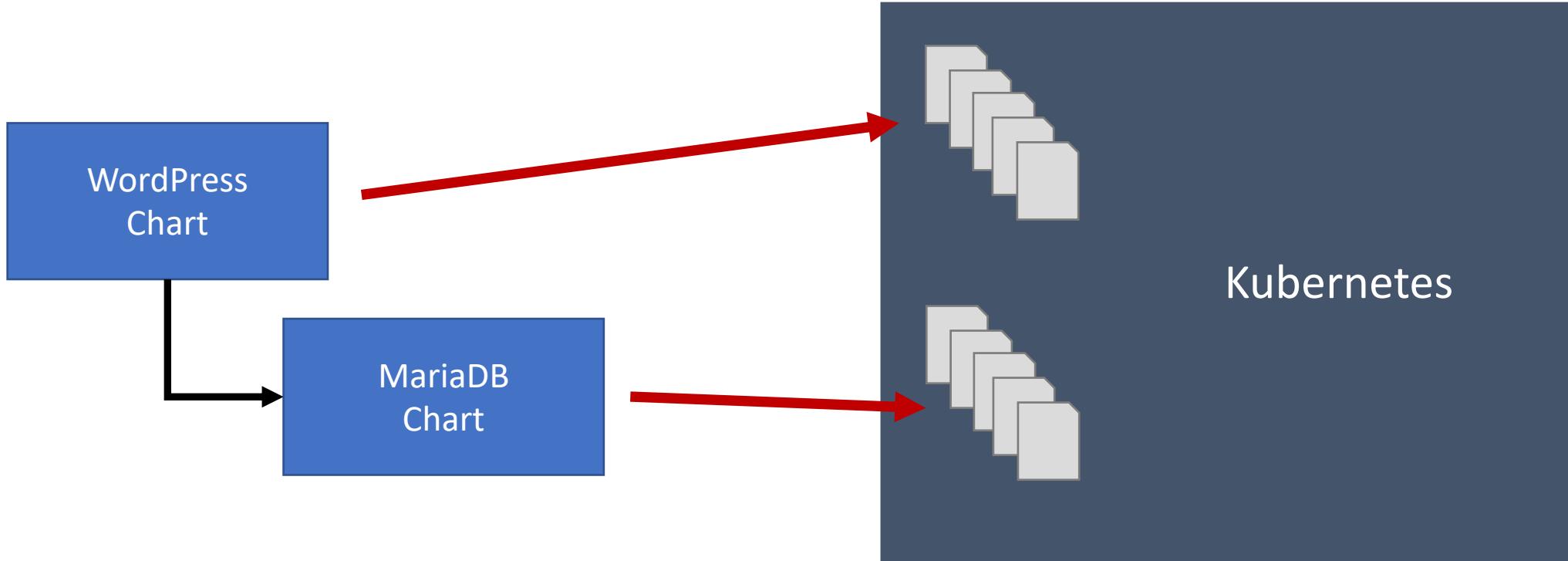
Depends on a database

A SaaS
Installed database (8 more Kubernetes objects)

To install in a cluster is
13 Kubernetes objects

```
$ helm install stable/wordpress \
--set wordpressBlogName="Hi CloudNativeCon"
```





Things to know about Helm

Helm: The command line client

Tiller: Runs in your cluster

Repository: Like a container image repository to share and store charts

Chart: A package

Chart: WordPress

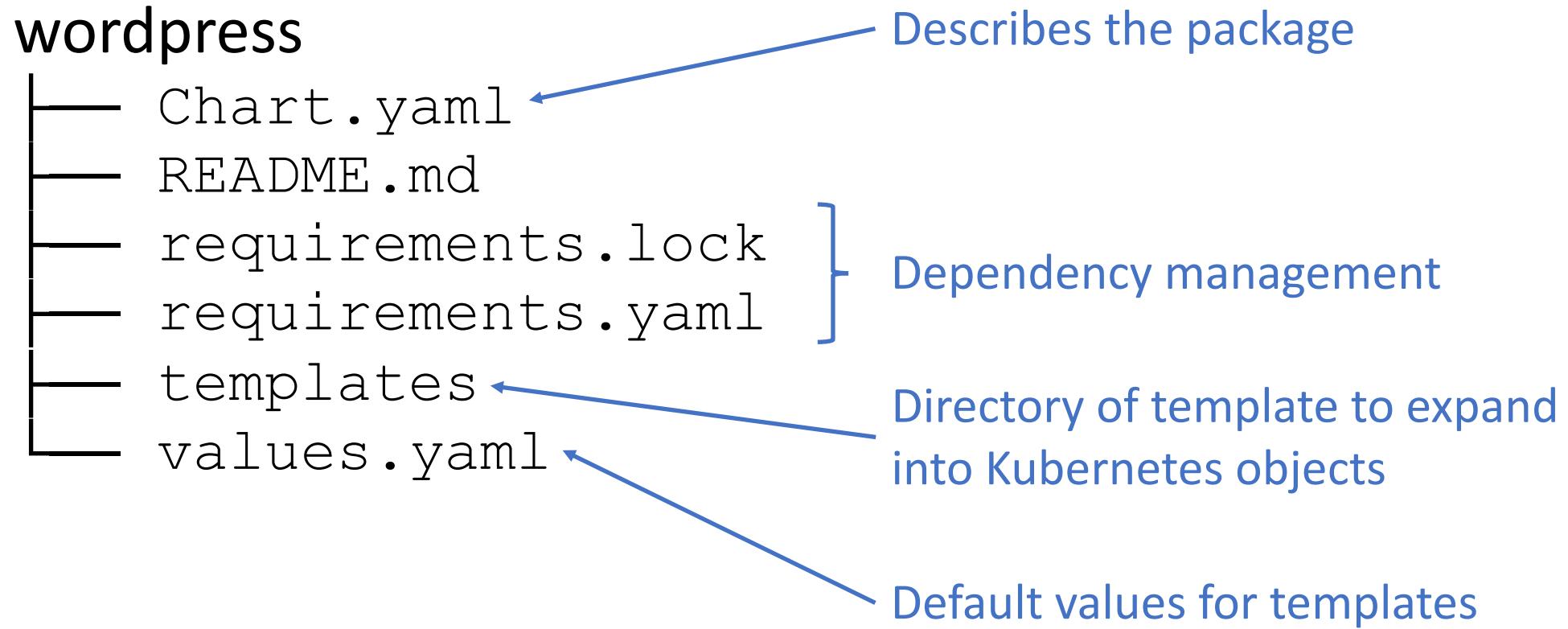


Chart: WordPress

templates

```
└── NOTES.txt
    └── helpers.tpl
    └── deployment.yaml
    └── externaldb-secrets.yaml
    └── ingress.yaml
    └── pvc.yaml
    └── secrets.yaml
    └── svc.yaml
    └── tests
        └── test-mariadb-connection.yaml
    └── tls-secrets.yaml
```

Yes, you can even
have tests in charts

```
# First install a chart  
$ helm install stable/wordpress --name wp  
  
# Then test it  
$ helm test wp
```

Inside A Template

File: `tls-secrets.yaml`

```
1  {{- if .Values.ingress.enabled }}  
2  {{- range .Values.ingress.secrets }}  
3    apiVersion: v1  
4    kind: Secret  
5    metadata:  
6      name: {{ .name }}  
7      labels:  
8        app: {{ template "fullname" $ }}  
9        chart: "{{ $.Chart.Name }}-{{ $.Chart.Version }}"  
10       release: "{{ $.Release.Name }}"  
11       heritage: "{{ $.Release.Service }}"  
12   type: kubernetes.io/tls  
13   data:  
14     tls.crt: {{ .certificate | b64enc }}  
15     tls.key: {{ .key | b64enc }}  
16 ---  
17 {{- end }}  
18 {{- end }}
```

wordpress-3.3.0.tgz

```
# Run from the root of a chart
$ helm package .
```

```
# Adding a repo is like adding a Git remote
$ helm repo add \
    incubator https://kubernetes-charts-incubator.storage.googleapis.com/
```

```
# Fetch the chart locally (like a docker pull)
$ helm fetch stable/wordpress
```

```
# Install a chart (will fetch the chart if needed)
$ helm install stable/wordpress
```

```
# Update an application to a newer version of the chart
$ helm update my-app stable/wordpress
```

```
# Rollback an application
$ helm rollback my-app 1
```

More To Helm Than Helm

Stable and Incubator Charts

helm / charts

Code Issues 258 Pull requests 385 Insights

Curated applications for Kubernetes

kubernetes charts helm

5,674 commits 2 branches 0 releases 1,315 contributors Apache-2.0

Branch: master New pull request Find file Clone or download

mfpierre and k8s-ci-robot [Datadog] Add /var/run/s6 volume to avoid noexec on some setups (#9275) ... Latest commit 9e6a361 4 minutes ago

.circleci [test] Update to chart-testing v2.0.0 (#8745) 7 days ago

.github update to two spaces the list because it create the markdown when add... 2 months ago

incubator Deprecate and promote spring-cloud-data-flow to stable (#8757) 5 days ago

stable [Datadog] Add /var/run/s6 volume to avoid noexec on some setups (#9275) 4 minutes ago

test [test] Fix setting Helm timeout (#9165) 4 days ago

.gitignore Use factored out testing lib (#5231) 5 months ago

CONTRIBUTING.md fix docs - there is no CLA any longer (#7890) 2 months ago

LICENSE Add LICENSE and CONTRIBUTING.md 3 years ago

OWNERS adding @paulczar to root OWNERS (#7431) 3 months ago

PROCESSES.md update PROCESSES.md to clarify promotion process (#6084) 5 months ago

README.md Adding process for trusted collaborator (#7724) 2 months ago

REVIEW_GUIDELINES.md Guidelines: set matchLabels as being mandatory (#7692) 21 days ago

code-of-conduct.md Add code-of-conduct.md (#3122) 11 months ago

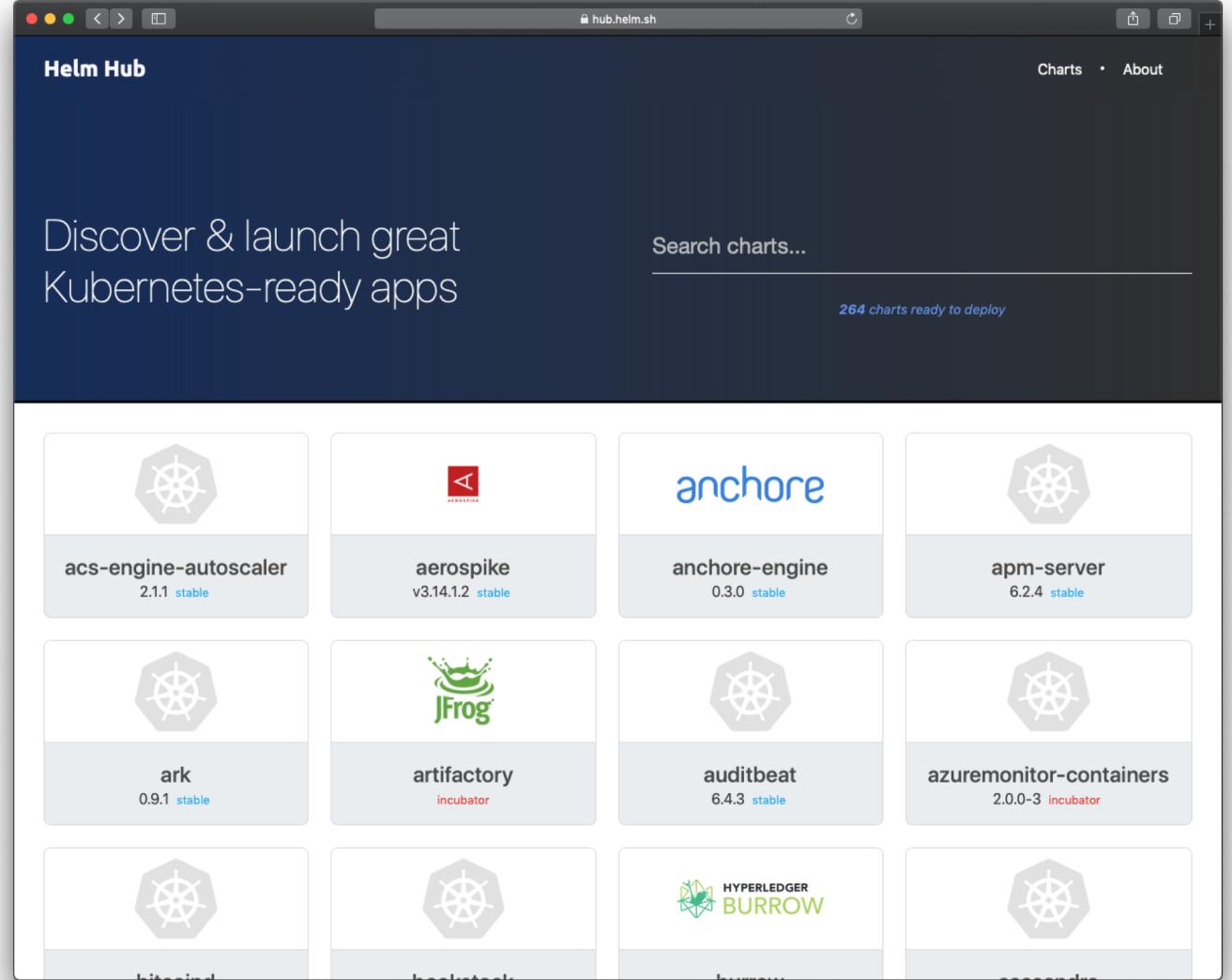
README.md

Helm Charts

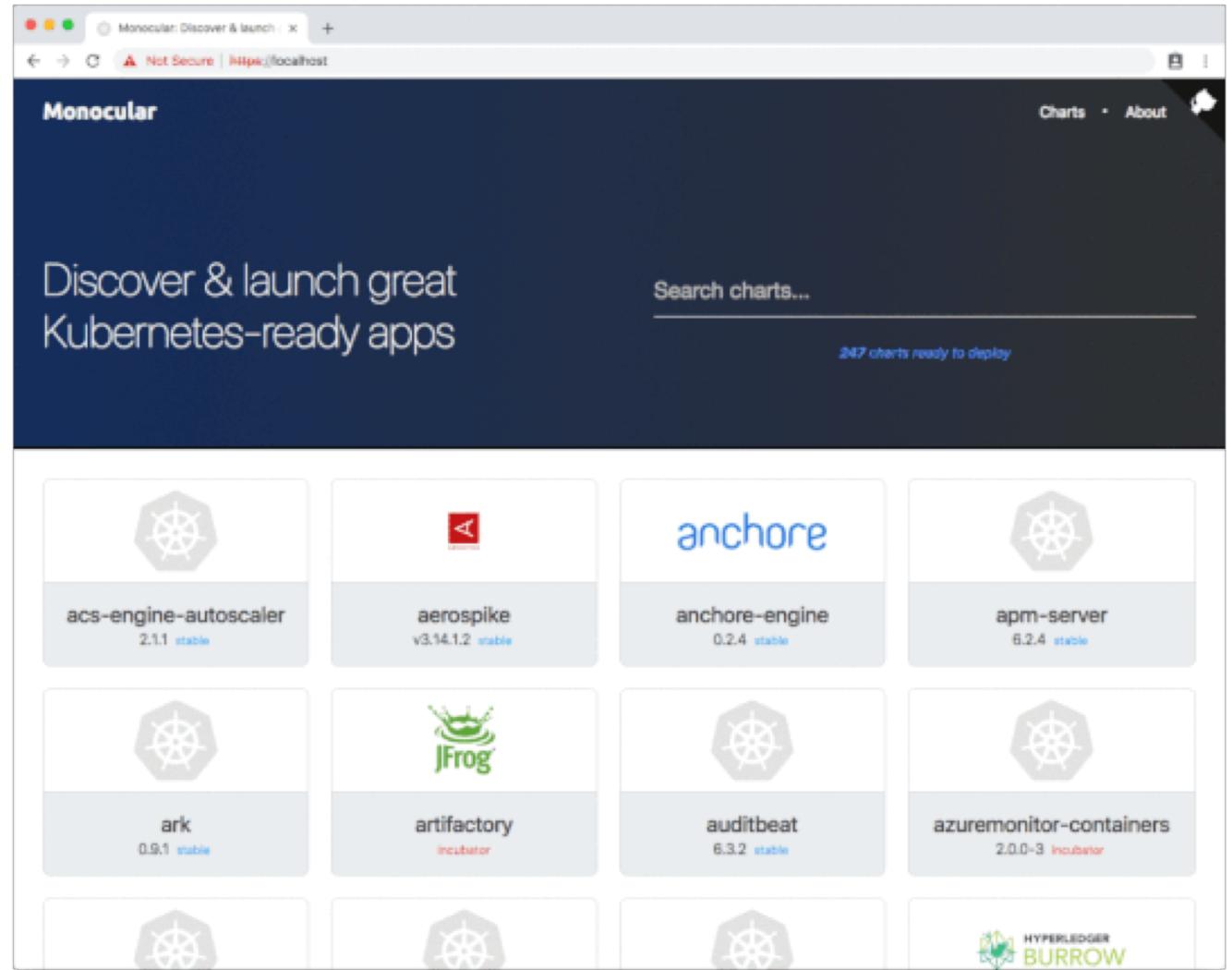
Use this repository to submit official Charts for Helm. Charts are curated application definitions for Helm. For more

Helm Hub

<https://hub.helm.sh>



Monocular



ChartMuseum

The screenshot shows the GitHub repository page for `helm / chartmuseum`. The repository has 334 commits, 1 branch, 23 releases, and 26 contributors. The Apache-2.0 license is applied. The commit history lists various contributors like `jdotlitsky`, `.circleci`, and `acceptance_tests`, with commits ranging from 2 days ago to over a year ago. The README.md file contains the following content:

```
ChartMuseum

PASSED go report A+ godoc reference "Preserve your precious artifacts... in the cloud!"
```

Tools To Help You

The screenshot shows a GitHub repository page for 'helm / chart-testing'. The repository is described as a 'CLI tool for linting and testing Helm charts'. It has 29 commits, 2 branches, 3 releases, and 10 contributors. The latest commit was made 21 hours ago. The repository includes files like .circleci, app, doc, etc, and various configuration and build scripts. A section titled 'Chart Testing' is visible at the bottom.

helm / chart-testing

Code Issues 8 Pull requests 2 Insights

CLI tool for linting and testing Helm charts

helm docker testing linting kubernetes golang

29 commits 2 branches 3 releases 10 contributors Apache-2.0

Branch: master New pull request Find file Clone or download

unguculus Bind debug flag to Viper (#50) ... Latest commit 5dfe136 21 hours ago

.circleci Re-write it in Go (#35) 7 days ago

app Bind debug flag to Viper (#50) 21 hours ago

doc Re-write it in Go (#35) 7 days ago

etc Factor out testing code from charts (#1) 5 months ago

examples Fix wrong docker image tag for docker4mac (#51) a day ago

pkg Re-write it in Go (#35) 7 days ago

.dockerignore Re-write it in Go (#35) 7 days ago

.editorconfig Re-write it in Go (#35) 7 days ago

.gitignore Re-write it in Go (#35) 7 days ago

.goreleaser.yml Re-write it in Go (#35) 7 days ago

Dockerfile Re-write it in Go (#35) 7 days ago

Gopkg.lock Re-write it in Go (#35) 7 days ago

Gopkg.toml Re-write it in Go (#35) 7 days ago

LICENSE Initial commit 7 months ago

README.md Document supported versions, upgrading, and version-specific PRs (#47) 5 days ago

build.sh Re-write it in Go (#35) 7 days ago

code-of-conduct.md Helm code of conduct. Fixes #48 (#49) 2 days ago

tag.sh Re-write it in Go (#35) 7 days ago

README.md

Chart Testing

Then There's The Ecosystem

Plugins

- helm-s3
- helm-gcs
- helm-github
- helm-diff
- Tillerless Helm v2
- helm-gpg
- ...

Supporting Tools

- Helmfile
- Drone.io Helm Plugin
- Landscaper
- Kubeapps
- Chartify
- Harbor
- ...

Services

- Codefresh Managed Helm Repositories
- Quay App Registry
- Azure Container Registry Helm Chart Support
- Artifactory Helm Chart Support
- ...

Just To Name A Few

<https://docs.helm.sh/related/>
**Find Ecosystem
Projects**



Where is Helm going?

Helm v3

- Breaking changes from lessons learned
- Carrying almost everyone forward
- **Helm Deep Dive:** Thursday @ 3:40 in this room

CNCF Graduation

The CII Best Practices Badge Program is a way for Free/Libre and Open Source Software (FLOSS) projects to show that they follow best practices. Projects can voluntarily self-certify, at no cost, by using this web application to explain how they follow each best practice. The CII Best Practices Badge is inspired by the many badges available to projects on GitHub. Consumers of the badge can quickly assess which FLOSS projects are following best practices and as a result are more likely to produce higher-quality secure software.

More information on the CII Best Practices Badging program, including background and [criteria](#), is available on GitHub. Project statistics and [criteria statistics](#) are available. The projects page shows participating projects and supports queries (e.g., you can see [projects that have a passing badge](#)). You can also see [an example](#) (where we try to get our own badge).

Privacy and legal issues: Please see our [privacy policy](#), [about cookies](#), and [terms of use](#). The code for the badging application itself is released under the [MIT license](#) (projects pursuing a badge are under their respective licenses). All publicly-available non-code content managed by the badging application is released under at least the [Creative Commons Attribution License version 3.0 \(CC-BY-3.0\)](#); newer non-code content is released under CC-BY version 3.0 or later (CC-BY-3.0+). If referencing collectively or not otherwise noted, please credit the CII Best Practices badge contributors.



CII Best Practices

Projects Sign Up Login

CII Best Practices Badge Program

Get Your Badge Now!



CORE INFRASTRUCTURE INITIATIVE
BEST PRACTICES

Some badge earners:





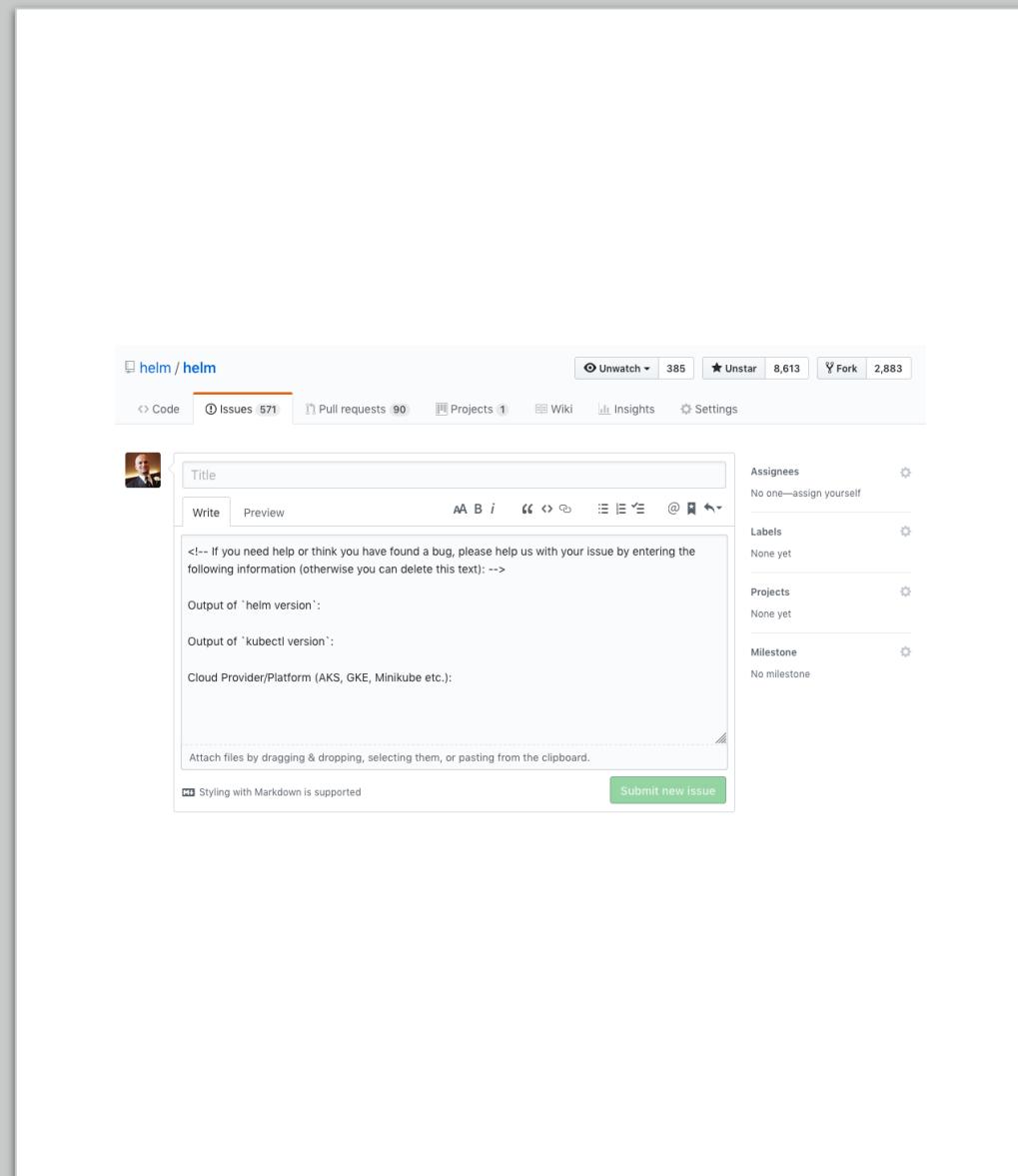
Hub Growth

How To Get Involved

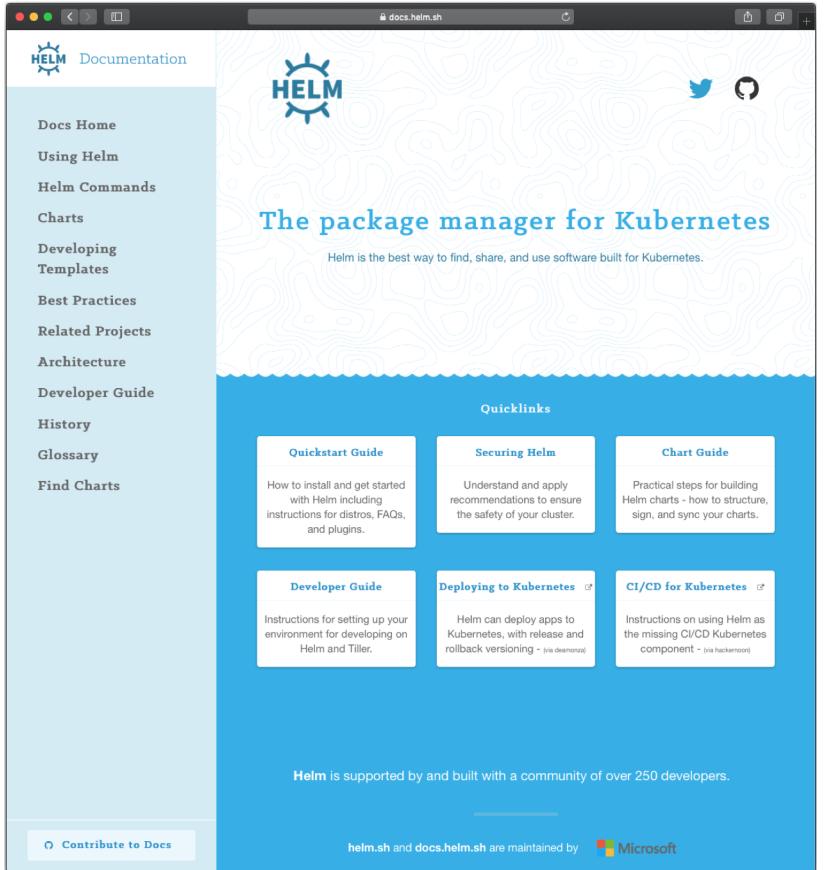
Tue	Wed	Thu	Fri
29 12pm Charts Chat (fortnightly)	30	31 12:30pm Helm Developer Call	Nov 1
5 12pm Charts Office Hours	6	7 12:30pm Helm Developer Call	8
12 12pm Charts Chat (fortnightly)	13	14 12:30pm Helm Developer Call	15
19 12pm Charts Office Hours	20	21	22
26 12pm Charts Chat (fortnightly)	27	28 12:30pm Helm Developer Call	29

1. Attend A Meeting

2. File An Issue



2. Contribute Code/Docs



github.com/helm/community

Why GitHub? Business Explore Marketplace Pricing Search Sign in Sign up

helm / community Watch 32 Star 56 Fork 35

Code Issues 4 Pull requests 8 Projects 0 Insights

Helm community content <https://helm.sh>

cncf

91 commits 2 branches 0 releases 11 contributors

Branch: master New pull request Find file Clone or download

bacongobbler Merge pull request #62 from budde377/patch-2 ... Latest commit 9a90777 7 days ago

governance Adding org maintainers file a month ago

helm-v3 Fix wrong chart lua-script path 7 days ago

proposals Adding Monocular 1.0 proposal 3 months ago

MAINTAINERS.md Adding Josh and Scott as org maintainers 20 days ago

README.md Feedback fixes 2 months ago

communication.md add link to meeting notes 13 days ago

helm-maintainers-onboarding-guid... Initial addition of helm maintainers onboarding guide 10 months ago

incubator.md initial commit of community documentation a year ago

user-profiles.md Adding user profile for cluster operators who are not in scope 8 months ago

README.md

Helm Community

Welcome to the Helm community!

This is the starting point for becoming a contributor to the Helm project - improving docs, improving code, giving talks etc.

Communicating

The [communication](#) page lists communication channels like chat, issues, mailing lists, conferences, etc.

How Can I Help?

Questions?

- <https://helm.sh>
- cncf-helm@lists.cncf.io
- <https://twitter.com/helmpack>
- #helm-users on Kubernetes Slack