

SIG APPS

An update on the SIG that covers **deploying and operating applications** in Kubernetes

SIG APPS LEADS

- **Adnan Abdulhussein** (@prydonius), Bitnami
- **Kenneth Owens** (@kow3ns), Google
Just joined us in leading SIG Apps
- **Matt Farina** (@mattfarina), Samsung SDS
- **Michelle Noorali** (@michelleN), Microsoft
Is stepping down from SIG Apps leadership to focus on steering committee

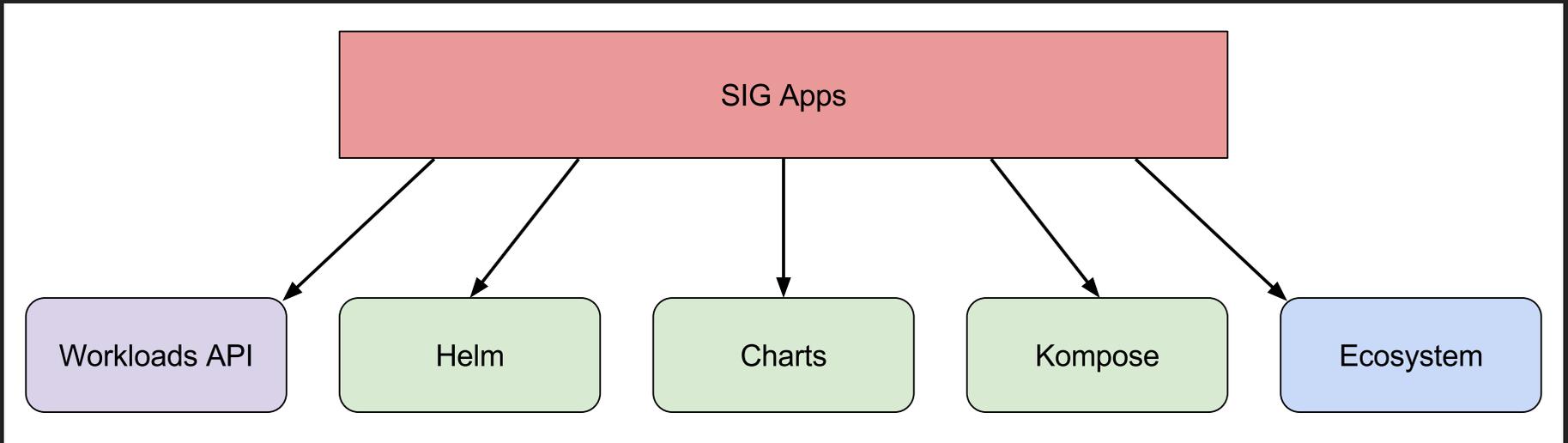
GOALS OF SIG APPS

- Discuss **running and defining applications** in Kubernetes (e.g., APIs, SDKs, Controllers, etc.)
- Work on improvements to the **Workload API** and **Apps Tooling**
- Suggest Kubernetes features where we see friction
- Be the **voice of the people running applications in Kubernetes** (developers and devops)
- Help people get involved in the Kubernetes community
- **Show early features/demos** of tools that make running apps easier

ROLES: DEVELOPERS AND DEVOPS

- **Application Developers** - build the application (e.g., node.js app) and may not care where they run
- **Application Operators** - operate the applications (need to know Kubernetes configs)
- **Cluster Operators** - operate the Kubernetes clusters. May not even be at same company as other roles. *Not a target for SIG Apps*

The same person could perform one or more of the roles



Sig Apps Covers A Variety Of Areas

HOW WE MEET

- 1 hour meeting every Monday
- Agenda:
 - Intro + announcements + survey sometimes
 - Demos
 - Updates & Standups
 - Topics of interest scheduled on agenda
 - Open discussion

<https://k8s.io/community>

WE MEET A LOT

- Helm has a 30 minute meeting on Thursdays
- Charts has an hour meeting every other Tuesday
- App Def Working Group has an hour meeting every other Wednesday

MENTORING/COHORT PROGRAM

SIG Apps Areas of Involvement:

- Workloads API
- Helm
- Charts

Sign up at <http://bit.ly/k8scohort2017>

WORKLOADS API

BATCH API

- **Job** (*api: batch/v1*)

"A job is a supervisor for pods carrying out batch processes..." – Kubernetes By Example

Status: Stable API

- **CronJob** (*api: batch/v2alpha1*)

- Add Timezone support in the works
- Working to create Jobs from CronJobs
- **Want to focus on getting to v1 next**

CONTROLLERS

apps/v1beta2 → apps/v1 in 1.9

- **DaemonSet** - Ensures that all (or some) Nodes run a copy of a Pod
- **Deployment** - Provides declarative updates for Pods and ReplicaSets
- **ReplicaSet** - The next-generation Replication Controller
- **StatefulSet** - Maintains a sticky identity for each of their Pods

WHAT'S NEXT?

- Significant work on improving e2e, integration, and unit tests
- Focus on getting CronJob to v1

HELM

<https://github.com/kubernetes/helm>

HELM 2, *STABILITY FOCUSED*

Recent Updates Include:

- Support for latest Kubernetes versions
- Documentation improvements
- A security fix release
- UI improvements
- Templating additions: regex, SSL Cert, etc
- Plenty of bug fixes
- Rudder experiment improvements

HELM 3

Major Version Change Means We Can Break APIs

HELM 3 *POTENTIAL* IDEAS

- CRD/API Server Extension for Tiller
- Easier to add Template Engines
- Pluggable ruleset for linter
- Operator for Tiller
- Breaking command line changes
- Tiller API changes
- Much much more...

Contributors welcome

HELM SUMMIT

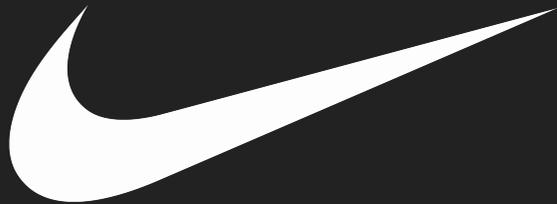
When: February 21-22, 2018

Where: Portland, Oregon

<https://helmsummitpdx-feb2018.splashthat.com>

<http://bit.ly/helmsummit2018>

SPONSORS



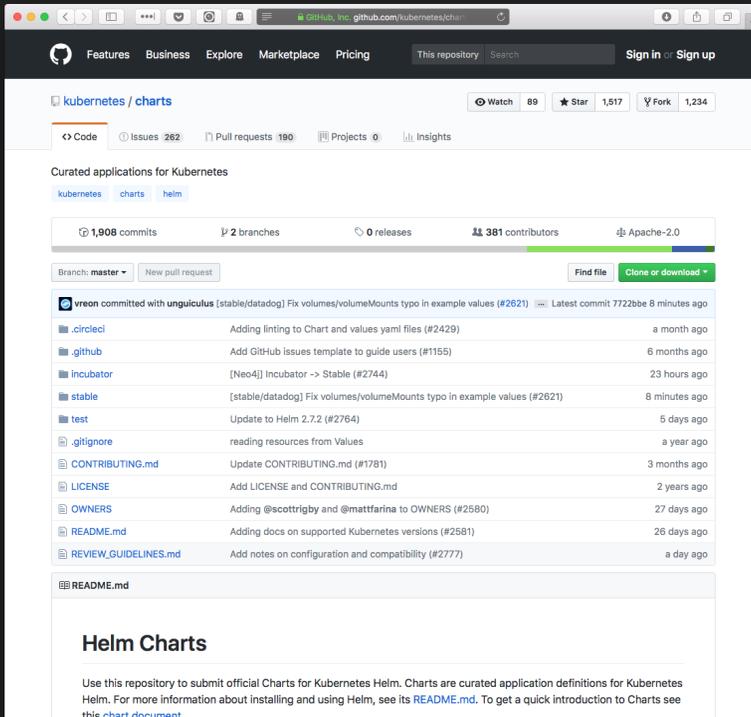
Microsoft

CHARTS

<https://github.com/kubernetes/charts>

Charts Project

KubeApps.com



The screenshot shows the GitHub repository for 'kubernetes / charts'. The repository has 89 watches, 1,517 stars, and 1,234 forks. It contains 262 issues, 190 pull requests, and 0 projects. The repository is curated for Kubernetes applications and includes a README.md file. The commit history shows recent updates to the README.md file, including adding notes on configuration and compatibility.

Curated applications for Kubernetes

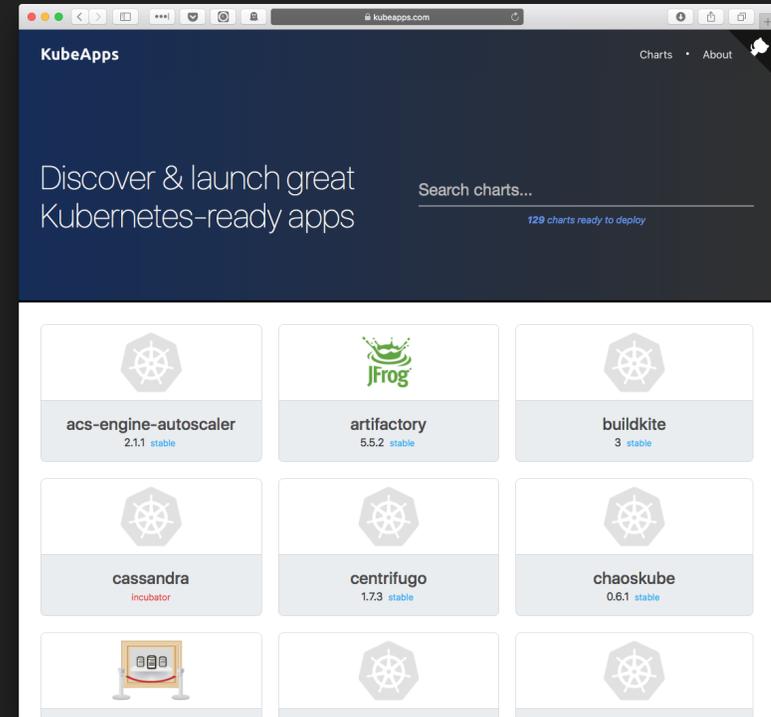
1,908 commits | 2 branches | 0 releases | 381 contributors | Apache-2.0

Branch: master | New pull request | Find file | Clone or download

- veon committed with unguiculus [stable/datadog] Fix volumes/volumeMounts typo in example values (#2621) | Latest commit 7722bbe 8 minutes ago
- .circleci Adding linting to Chart and values yaml files (#2429) | a month ago
- .github Add GitHub issues template to guide users (#1155) | 6 months ago
- incubator [Neo4j] Incubator -> Stable (#2744) | 23 hours ago
- stable [stable/datadog] Fix volumes/volumeMounts typo in example values (#2621) | 8 minutes ago
- test Update to Helm 2.7.2 (#2764) | 5 days ago
- .gitignore reading resources from Values | a year ago
- CONTRIBUTING.md Update CONTRIBUTING.md (#1781) | 3 months ago
- LICENSE Add LICENSE and CONTRIBUTING.md | 2 years ago
- OWNERS Adding @scottrigby and @mattfarina to OWNERS (#2580) | 27 days ago
- README.md Adding docs on supported Kubernetes versions (#2581) | 26 days ago
- REVIEW_GUIDELINES.md Add notes on configuration and compatibility (#2777) | a day ago

Helm Charts

Use this repository to submit official Charts for Kubernetes Helm. Charts are curated application definitions for Kubernetes Helm. For more information about installing and using Helm, see its [README.md](#). To get a quick introduction to Charts see [this chart document](#).



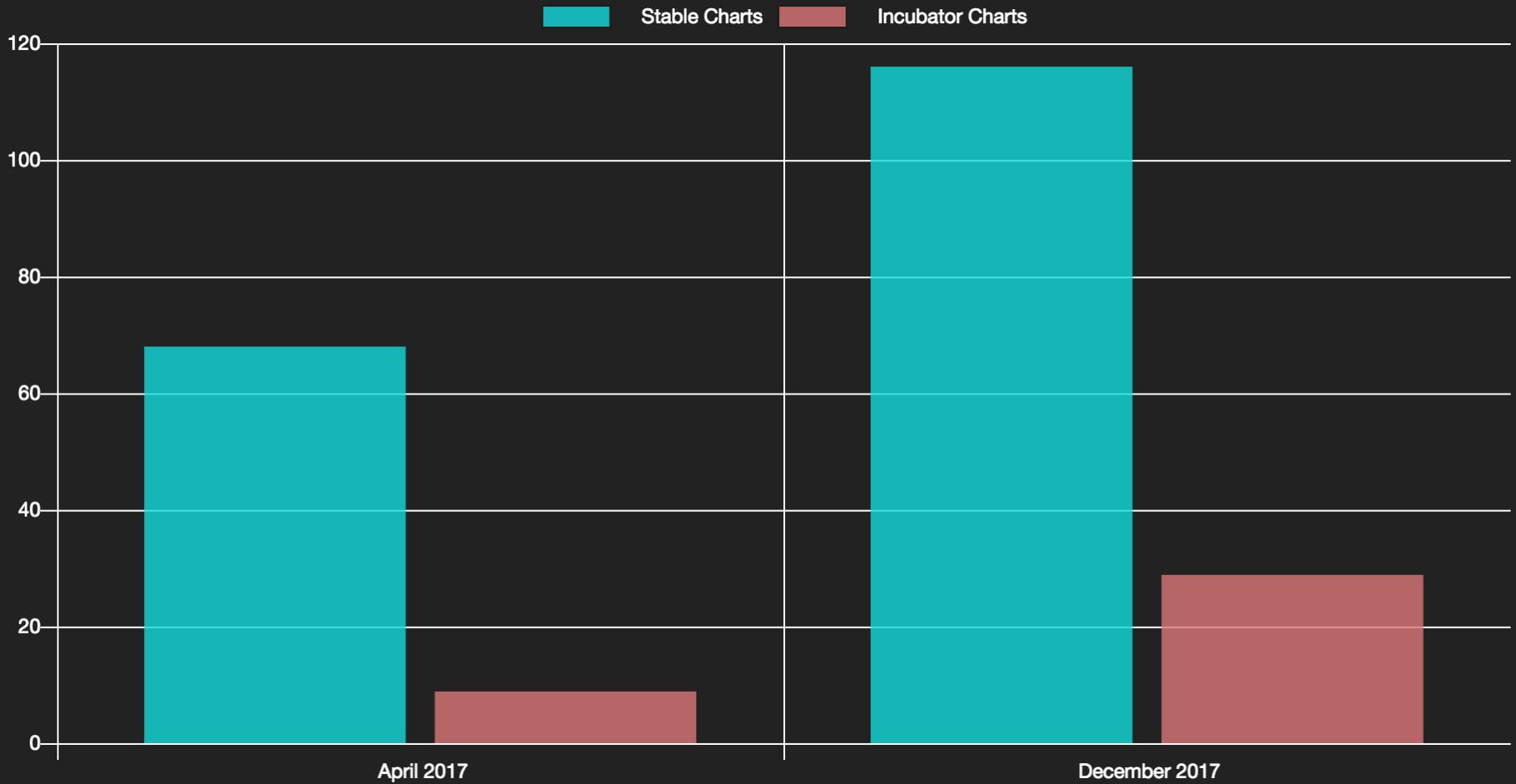
The screenshot shows the KubeApps.com website. The header includes 'KubeApps' and navigation links for 'Charts' and 'About'. The main content area features a search bar and a grid of application cards. The search bar indicates that 129 charts are ready to deploy.

Discover & launch great Kubernetes-ready apps

Search charts... | 129 charts ready to deploy

 acs-engine-autoscaler 2.1.1 stable	 artifactory 5.5.2 stable	 buildkite 3 stable
 cassandra incubator	 centrifugo 1.7.3 stable	 chaoskube 0.6.1 stable
 ...	 ...	 ...

CHART GROWTH



RECENT CI IMPROVEMENTS

- CircleCI used for static checking of every PR
 - **Helm lint** on all changes
 - Ensure the version is incremented (**immutable releases**)
 - **YAML linting** for Chart and values files
 - Ensure the existance of NOTES.txt and Readme
- Automated and maintainer triggered CI documented

COMING CI CHANGES

- OWNERS files and **chart maintainers merging changes**
- Generate Kubernetes objects and validate them for supported versions
- When `helm test` fails (in e2e tests) provide **better error logging**
- **Automated maintainer notifications** when an issue or PR comes in to their charts

CONTINUED CHART CHANGES

- Upgrade process for apps **beta APIs to stable**
- Higher level constructs in chart templates
- Add **appVersion** to more charts
- Migrate **maintainer names** of community charts to **github IDs**
- Start using new **maintainer URL** property
- Layer in **RBAC** to all charts
- Chart **best practices guide**

KOMPOSE

<https://github.com/kubernetes/kompose>

STABLE ADDITIONS

- 5 Minor feature releases since July
- Volume detection and conversion improvements
- Documentation updates
- YAML key additions
- CLI Parameter updates
- Ignore links to non-existent containers
- Labels to have more control of PVCs

ECOSYSTEM

Project

Description

Monocular

Web UI for Helm Chart repositories

ChartMuseum

Helm Chart Repository with support for Amazon S3 and Google Cloud Storage

rudder-federation

Federation support as a Tiller plugin

Kedge

A simple, easy and declarative way to define and deploy applications to Kubernetes by writing very concise application definitions

Project

Description

Metacontroller

Lightweight custom controllers as a service

audit2rbac

tool for developing RBAC roles for applications

Netsil

Kubernetes monitoring

Draft

Makes it easy to build applications that run on Kubernetes

Kubeless

A Kubernetes Native Serverless Framework

AND MANY MORE PROJECTS...

MORE DISCOVERABLE ECOSYSTEM

Kubernetes Ecosystem [Products](#) [Providers](#)

Products and Services for Kubernetes

[NEWEST PRODUCTS](#) [POPULAR PRODUCTS](#) [PROVIDERS](#)



Helm



Kubernetes



Draft



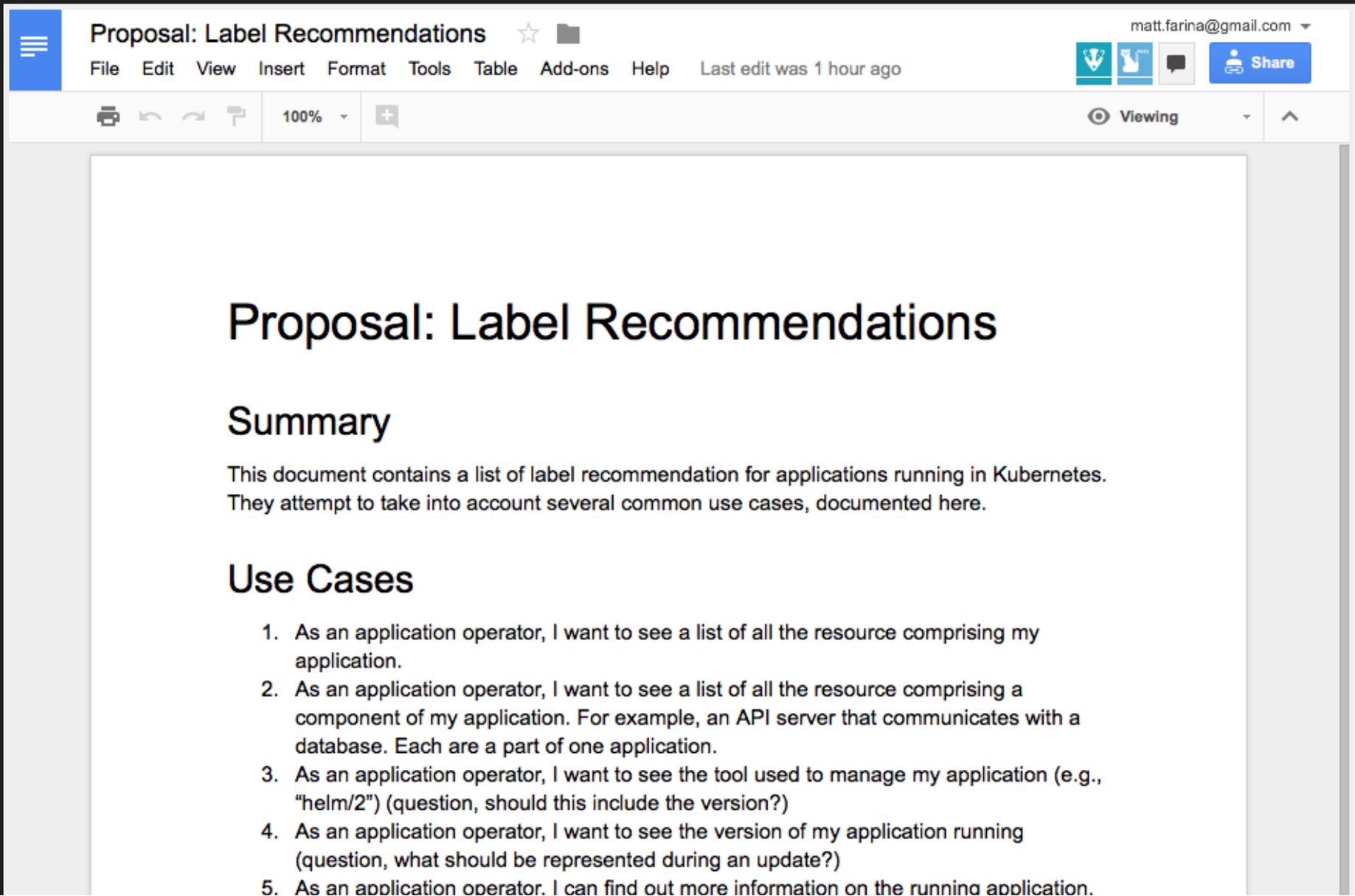
Crossplane

APP DEF WORKING GROUP

GOALS

1. Help drive actual completion of the issues. sig-cli lacks people to solve the issues. Come up with clear list of issues.
2. Survey + pool of examples where we provide guidance + describe tasks. Define personas, define user journeys, task and scenarios.
3. Identify tool interoperability issues and provide solutions.

INTEROP: COMMON LABELS



The image shows a screenshot of a Google Docs document. The document title is "Proposal: Label Recommendations". The interface includes a menu bar with options like File, Edit, View, Insert, Format, Tools, Table, Add-ons, and Help. The user's email address, matt.farina@gmail.com, is visible in the top right corner. The document content is as follows:

Proposal: Label Recommendations

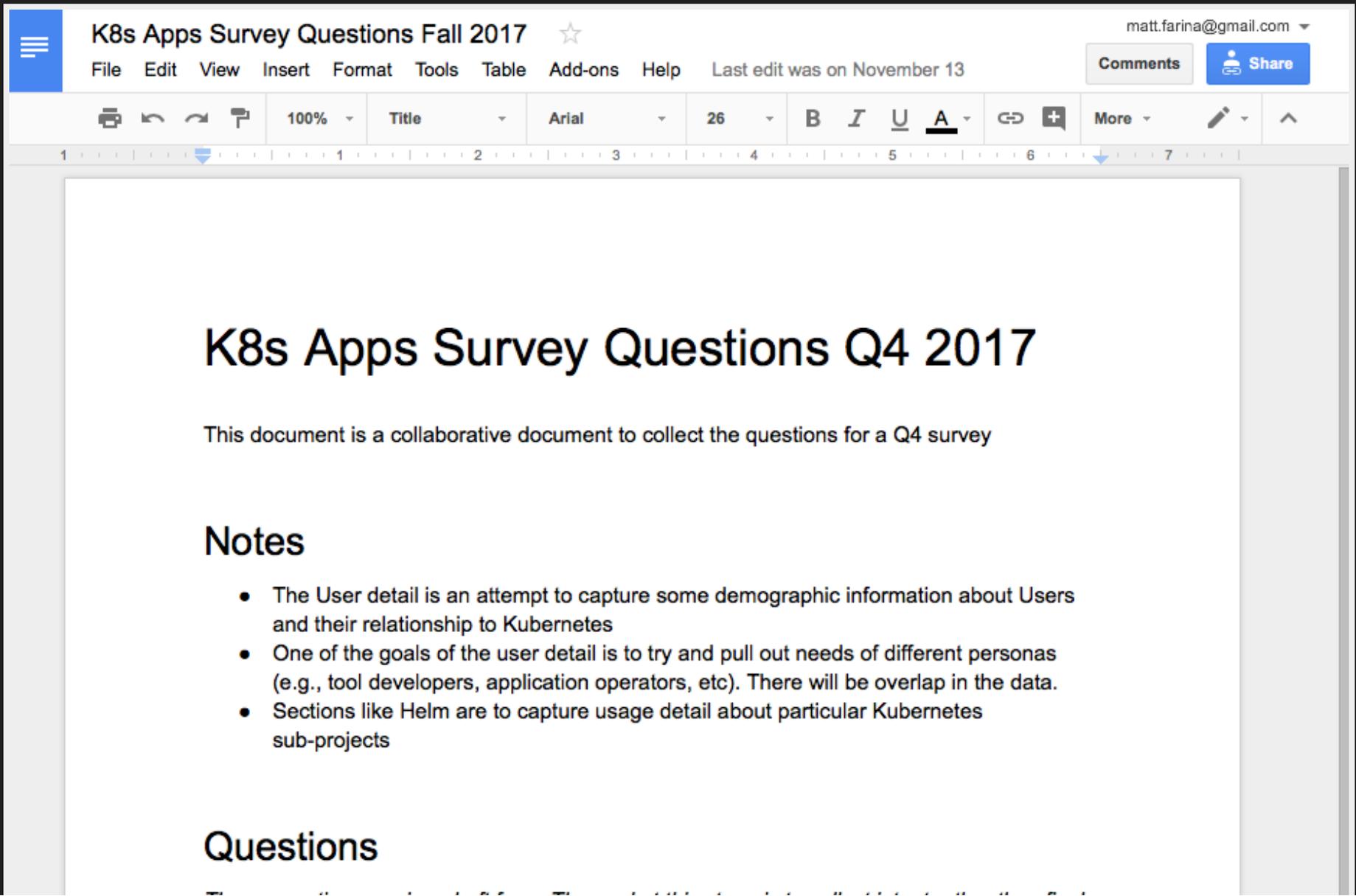
Summary

This document contains a list of label recommendation for applications running in Kubernetes. They attempt to take into account several common use cases, documented here.

Use Cases

1. As an application operator, I want to see a list of all the resource comprising my application.
2. As an application operator, I want to see a list of all the resource comprising a component of my application. For example, an API server that communicates with a database. Each are a part of one application.
3. As an application operator, I want to see the tool used to manage my application (e.g., "helm/2") (question, should this include the version?)
4. As an application operator, I want to see the version of my application running (question, what should be represented during an update?)
5. As an application operator. I can find out more information on the running application.

COMING SURVEY



The image shows a screenshot of a Google Docs document. The title bar at the top reads "K8s Apps Survey Questions Fall 2017" with a star icon and the email address "matt.farina@gmail.com". Below the title bar is a menu bar with options: File, Edit, View, Insert, Format, Tools, Table, Add-ons, and Help. To the right of the menu bar, it says "Last edit was on November 13". There are buttons for "Comments" and "Share". Below the menu bar is a toolbar with various icons for printing, undo, redo, and text formatting (bold, italic, underline, text color). The main content area of the document has a title "K8s Apps Survey Questions Q4 2017" and a paragraph: "This document is a collaborative document to collect the questions for a Q4 survey". Below this is a section titled "Notes" with a bulleted list of three items. At the bottom, the word "Questions" is visible.

K8s Apps Survey Questions Fall 2017 ☆ matt.farina@gmail.com

File Edit View Insert Format Tools Table Add-ons Help Last edit was on November 13

Comments Share

100% Title Arial 26 B I U A More

K8s Apps Survey Questions Q4 2017

This document is a collaborative document to collect the questions for a Q4 survey

Notes

- The User detail is an attempt to capture some demographic information about Users and their relationship to Kubernetes
- One of the goals of the user detail is to try and pull out needs of different personas (e.g., tool developers, application operators, etc). There will be overlap in the data.
- Sections like Helm are to capture usage detail about particular Kubernetes sub-projects

Questions

APPLICATION METADATA OBJECT

Property	Description
Name	The name of the application
Description	A human readable description of the application
Logo	A URL to a logo for the application

These are just examples of properties

SIG APPS DEEP DIVE

Friday from 11:10am - 12:30pm in Meeting Room
4BC, Level 3

QUESTIONS?