

<https://juju.is/>

<https://github.com/juju>

Introduction to Juju and Charmed Operators

Open Source @ Siemens Event

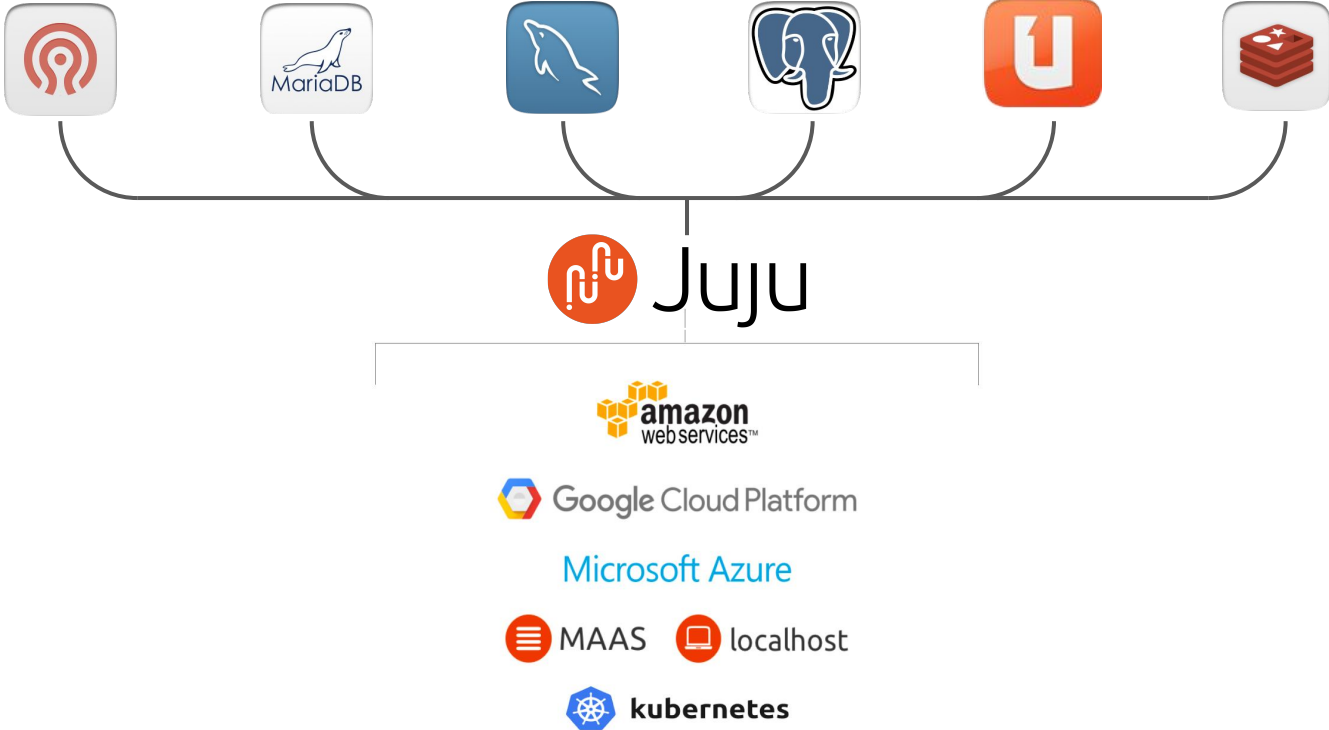
May 17th 2022, Zug, CH

Speaker: michael.jaeger@canonical.com

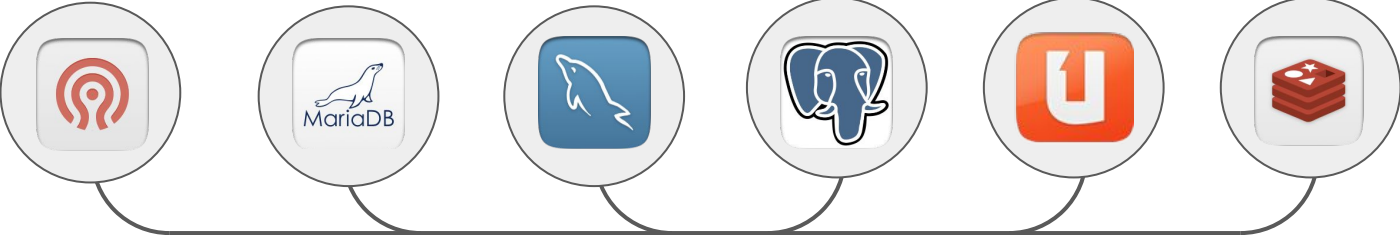


Canonical Ubuntu

Intro



Intro



 **Juju**

 **amazon**
web services™

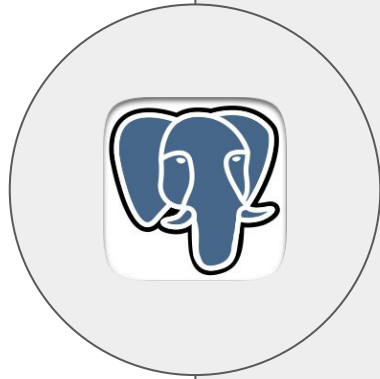
 Google Cloud Platform

Microsoft Azure

 MAAS  localhost

 **kubernetes**

Charmed Operator



Operator

- install
- config
- update
- remove
- scale

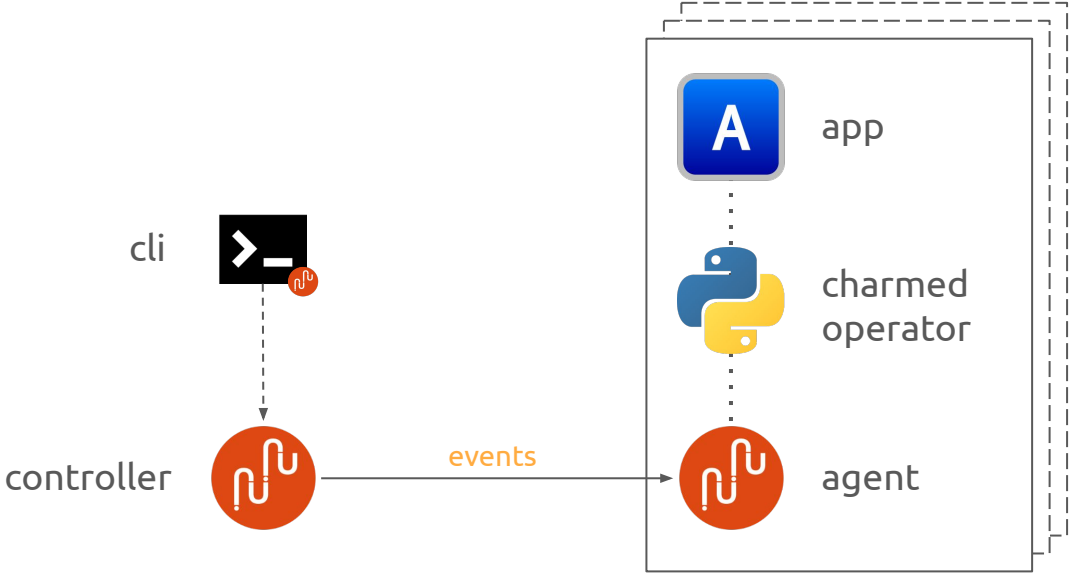
Workflows and Actions

- "action: backup"
- "action: restore"
- "action: scan-viruses"
- "action: health-check"
- "action: add-repo"
- "action: ..."
- "action: ..."

Relations

- relate-mysql
- relate-ldap
- relate-proxy
- relate-cos
- relate-cache

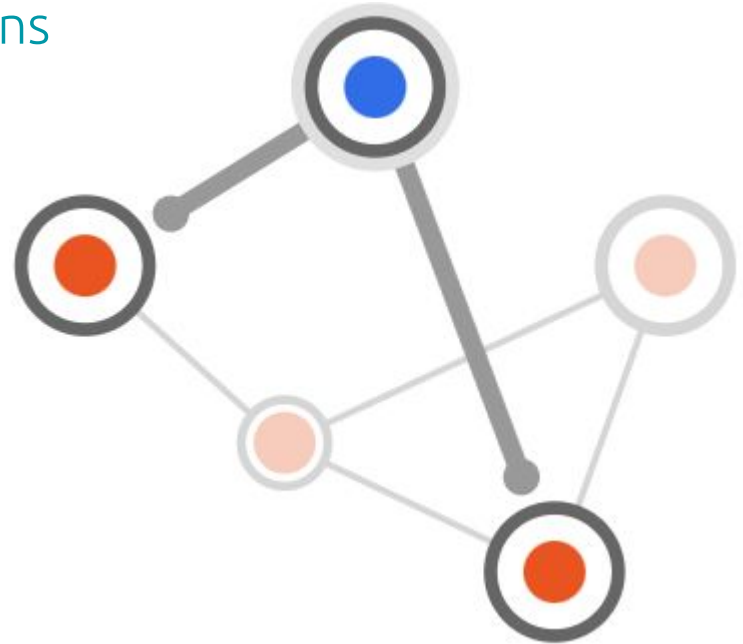
How does it work?



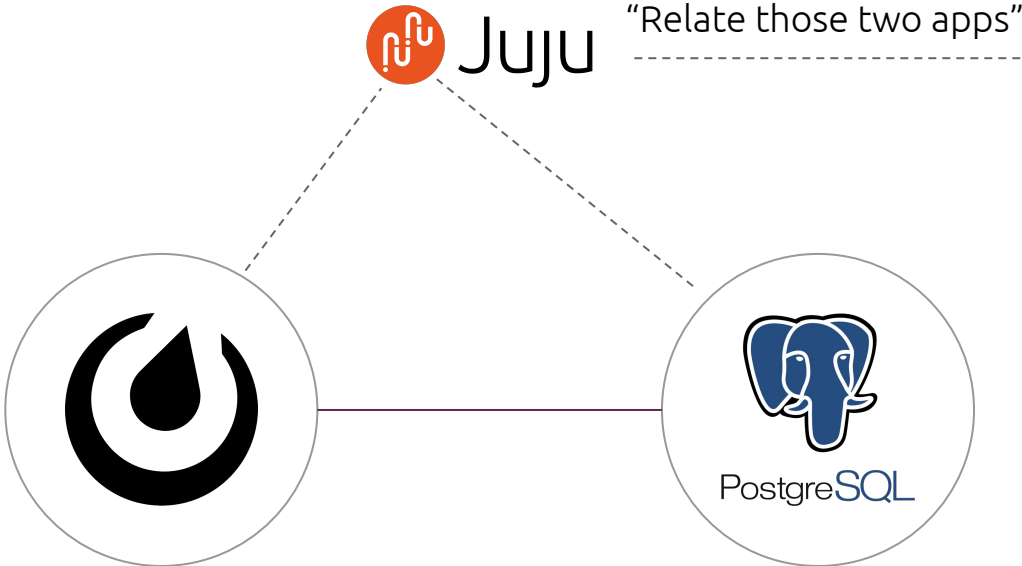
How do we use applications today?

Modern applications are composed applications

- Web servers and databases
- Caching, observability, authorization, user management
- All elements demand their operations



Relations



Relations

requires: pgsql

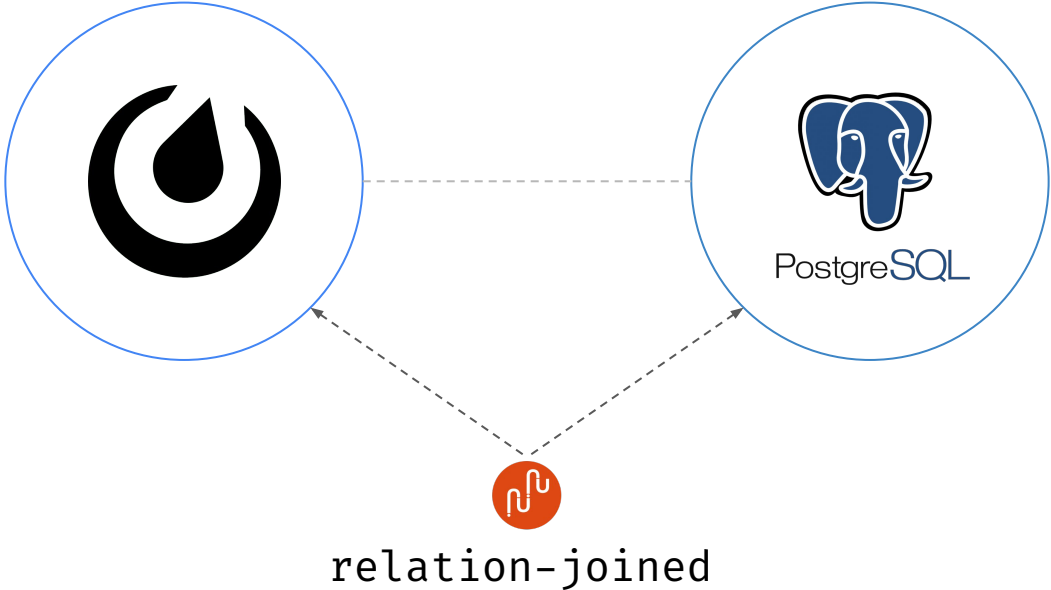


provides: pgsql



```
>_ juju relate mattermost postgresql
```


Relations



Collection of Operators on Charmhub.io

charmhub.io

The screenshot shows the charmhub.io website. At the top, there is a navigation bar with the Juju logo, the text "Juju Charmhub", and the Canonical logo. Below this is a menu with "About", "Blog", "Learn", and "Contribute", along with a search bar and a "Sign in" button. The main content area features a large blue banner with the text "Take control of Kubernetes" and "The Charmed Operator Collection". To the right of this banner is a paragraph describing Charmed Operators (Charms) and their use of Juju and the Charmed Operator Framework. Below the banner, there are several sections: "FILTERS" with a list of categories like AI/ML, Big Data, Cloud, Containers, Databases, Logging and Tracing, Monitoring, Networking, Security, and Storage; "Top related topics" with three boxes for "CANONICAL OBSERVABILITY STACK", "KUBEFLOW AI/MLOPS", and "FINOS CHARMED OPERATORS"; and "13 Featured" operators, with a "Platform" dropdown menu set to "All". The featured operators shown are "Hello, Kubecon!" by Jon Seager, "Nginx Ingress Integrator", "MongoDB" by Balbir Thomas, and "Elasticsearch" by Jeremy Louder.

charmhub.io

Juju Charmhub

CANONICAL

About Blog Learn Contribute Search Charmhub Sign in

Take control of Kubernetes

The Charmed Operator Collection

Take control of your applications and infrastructure across hybrid cloud, Kubernetes (K8s) and VM environments. Deploy, integrate and manage your way beyond configuration management to application management. Charmed Operators (Charms) use Juju, the Charmed Operator Framework. They're broad, they're powerful and they're Open Source (unless you choose otherwise).

FILTERS

- AI/ML
- Big Data
- Cloud
- Containers
- Databases
- Logging and Tracing
- Monitoring
- Networking
- Security
- Storage

Top related topics

CANONICAL OBSERVABILITY STACK

At Canonical, we have been referring to LMA as a system of machine charms currently in use to monitor Canonical and customer systems. COS draws a lot of learning from years of operational experience...

KUBEFLOW AI/MLOPS

Canonical Charmed Kubeflow is a state of the art, fully supported MLOps platform that helps data scientists collaborate on AI innovation on any cloud from concept to production, offered by Canonical...

FINOS CHARMED OPERATORS

Juju and Charms are the easiest way to quickly try FINOS projects in your laptop. Here you can also find information about enterprise-grade deployment options that covers day-2 operations.

[See all topics >](#)

13 Featured Platform All


Hello, Kubecon!
Jon Seager

Nginx Ingress Integrator

MongoDB
Balbir Thomas

Elasticsearch
Jeremy Louder

Why an app store?

- **Ecosystem in one place** - find the operators you want
 - **Duplicate operators are minimized** - and consolidated as their functionality is integrated into the best charm
 - **Easy Access** - Juju connects with Charmhub.io directly
 - **Quality indicator clarity** - It's easier to cover quality from a central place
- 

Quality?

- **Expert community** - A merit-based open community.
- **Open source preferred** - Transparency for collaboration and security.
- **Tested** - Consistent, systematic quality standards with testing.
- **Consistent** - Conventions for documentation, naming, config, actions, integrations and usage simplify adoption.



Top Tip:

Create one operator per application

- The software operator approach is a design pattern
- Enables composable applications
- Ensures a “Consistent operator UX”
- Ensures people share and collaborate on operators



One operator per application: For the integration case

Revisited: modern applications are composed applications

- Collection on Charmhub.io with available operators
- Combine existing operators covered with applications with Juju



Composition through models

Create as many models as you need.

- Tailored models: different exchangeable application elements
 - For example, for low footprint
- Focus on composition, reuse individual applications



Inference/Edge



Desktop



AI Training

Kubeflow topologies for different scenarios

Demo deploy mattermost

Getting started

Introductions



/sdk

Get set up!



/sdk/dev-setup

Hello, World!



/sdk/hello-world

juju.is/docs

Join the charming community

Charmhub



charmhub.io

Forum



discourse.charmhub.io

Chat



chat.charmhub.io

Thank you. Questions?