# Montréal

#### What is Juju?

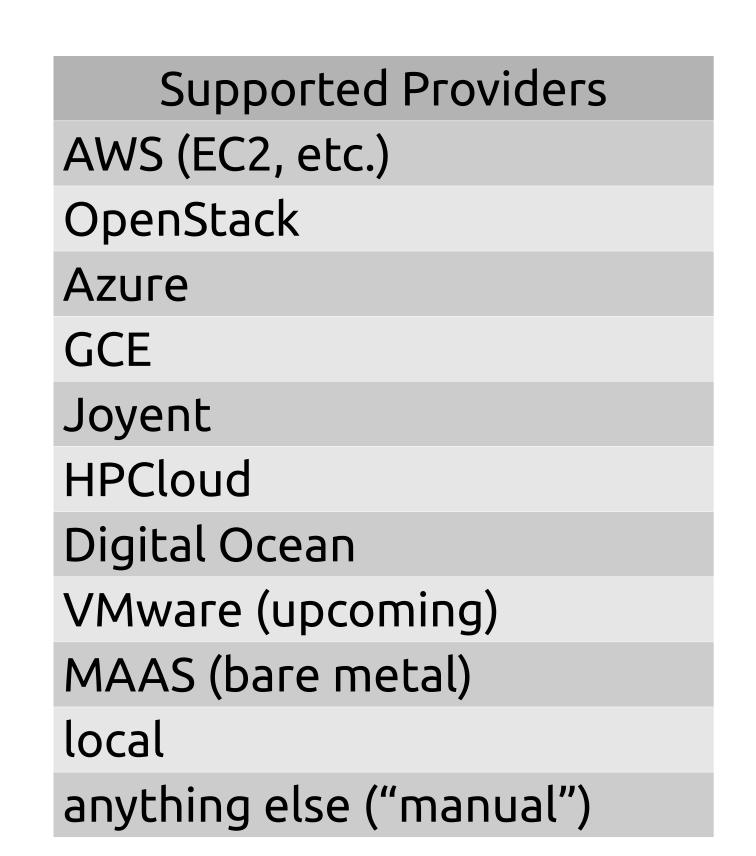
Service component deployment, configuration, and coordination, encapsulated in charms. Think of it as "apt-get for the web".

## Why Juju?

Web services can be hard, particularly at scale. Juju provides tools and a language (set of abstractions) that allow you to reason about and manage your infrastructure from a service-oriented perspective, instead of a machine-oriented one.

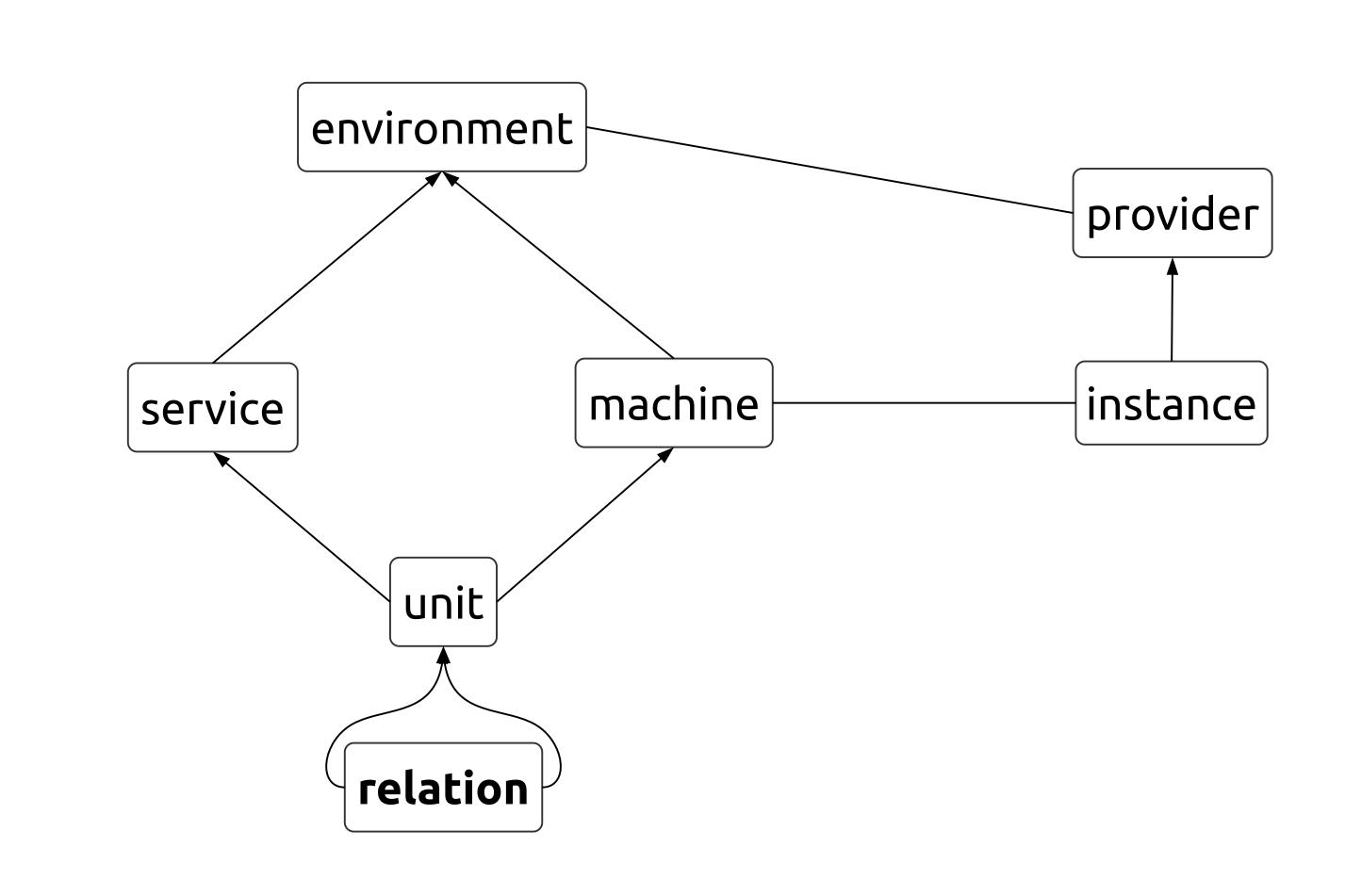
Rather than reasoning about configuration management, create reference implementations of complex systems that you can discuss in a natural way. Decompose big problems for improved quality and flexibility. Deploy many parts of your stack and let Juju configure (and re-configure) them to talk to each other.

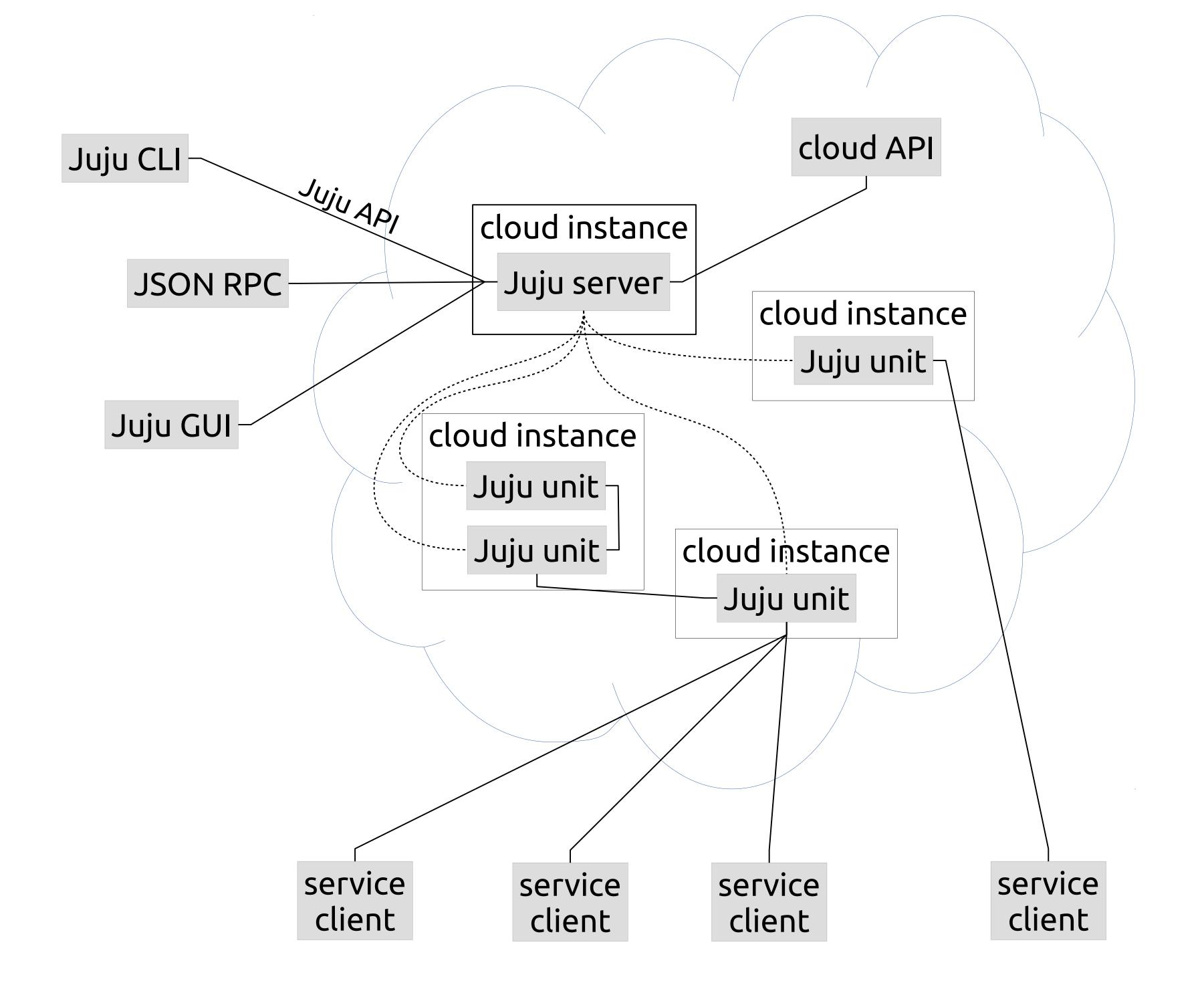
- \* charm store and ecosystem—a ready-made portfolio of many of the services and solutions you rely on
- \* public charms published on the store are vetted by Canonical
- \* CI of published charms provided gratis by Canonical
- \* only OSI-approved licenses
- \* "personal namespace" charms also available in charm store
- \* charms are easily bundled
- \* high-level tools for centralized system orchestration
- \* powerful GUI (see the demo), which is itself a charm
- \* easy-to-use CLI
- \* machine provisioning on popular cloud providers, KVM, containers, and metal
- \* back-end independence—not tied to a provider or platform
- \* deploy your full stack locally or to CI with the same configuration as production
- \* easily move between clouds and infrastructure

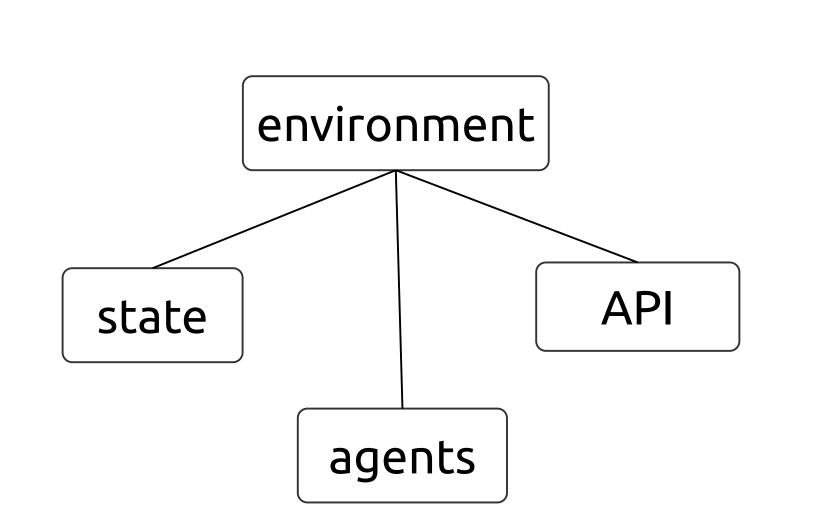


#### Provider Features

Instances Storage Networking **Availability Zones** Containers/Virtualization







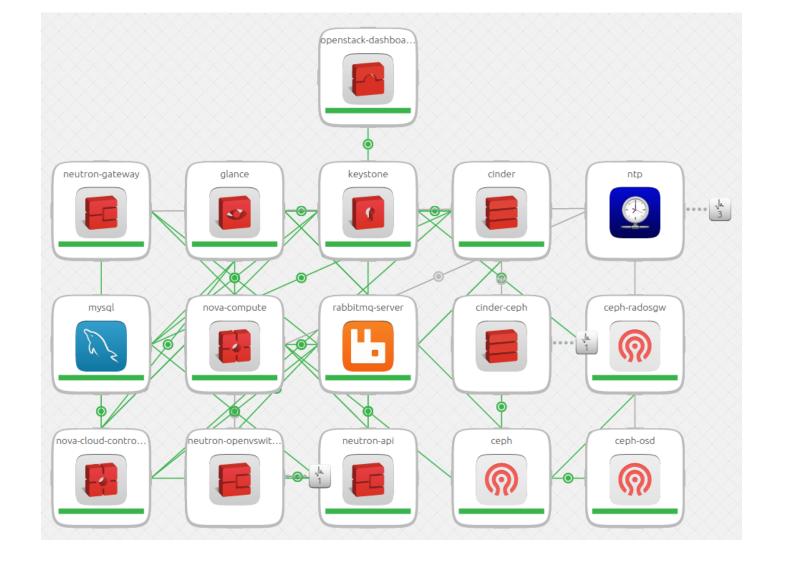
## Juju State

- \* Captures intent for the environment
- \* Drives events which realize that intent
- \* Managed by the Juju server (behind API)
- \* High-availability through replication

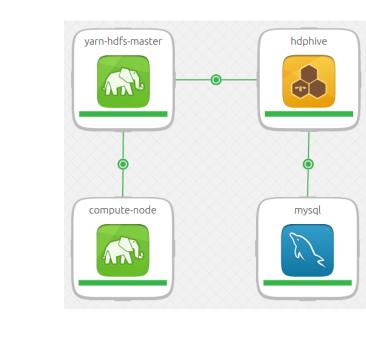
#### Charms

- \* The key abstraction in Juju
- \* Models a service using a declarative syntax
- \* Encapsulates and abstracts away ops knowledge about a service
- \* Describes how to interact with other services

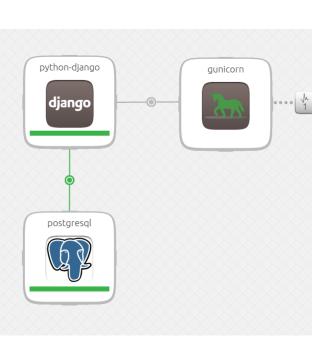
### OpenStack



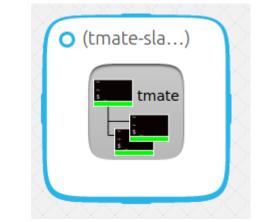
### Big Data



## Django

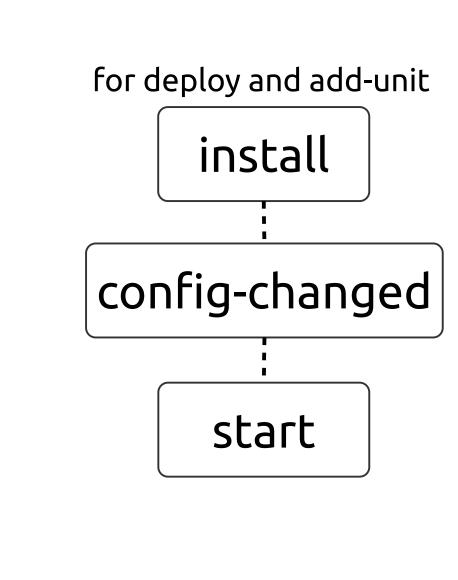


#### "tmate-slave"



## Charm Hooks

Executables called by Juju with access to special env vars and tools.





for destroy

upgrade-charm config-changed

for agent restart config-changed

for a new relation [name]-relation-joined [name]-relation-changed

for updated remote relation settings [name]-relation-changed

for remote relation ending [name]-relation-departed

for relation finally ended [name]-relation-broken

# Python and Juju

- \* charm helpers (http://pythonhosted.org/charmhelpers/)
- \* juju quickstart (plugin)
- \* gui support code (incl. testing)
- \* deployer (http://pythonhosted.org/juju-deployer/)
- \* Python API client (http://python-jujuclient.readthedocs.org/en/latest/)
- \* amulet (https://jujucharms.com/docs/1.20/tools-amulet)
- \* bundletester (https://github.com/juju-solutions/bundletester)
- \* CI for charm store
- \* CI for juju-core
- \* originally written in Python

## Related Solutions and Juju

	salt	ansible	chef
uju deploys full solution	X	X	X
existing "recipes" charm-able	X	X	X
upport in charm-helpers	X	X	

	docker	kubernetes	rails
deploy with Juju	X	X	X
Juju adds coordination	X	X	X
deploy into with Juju	X	X	X









