

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.

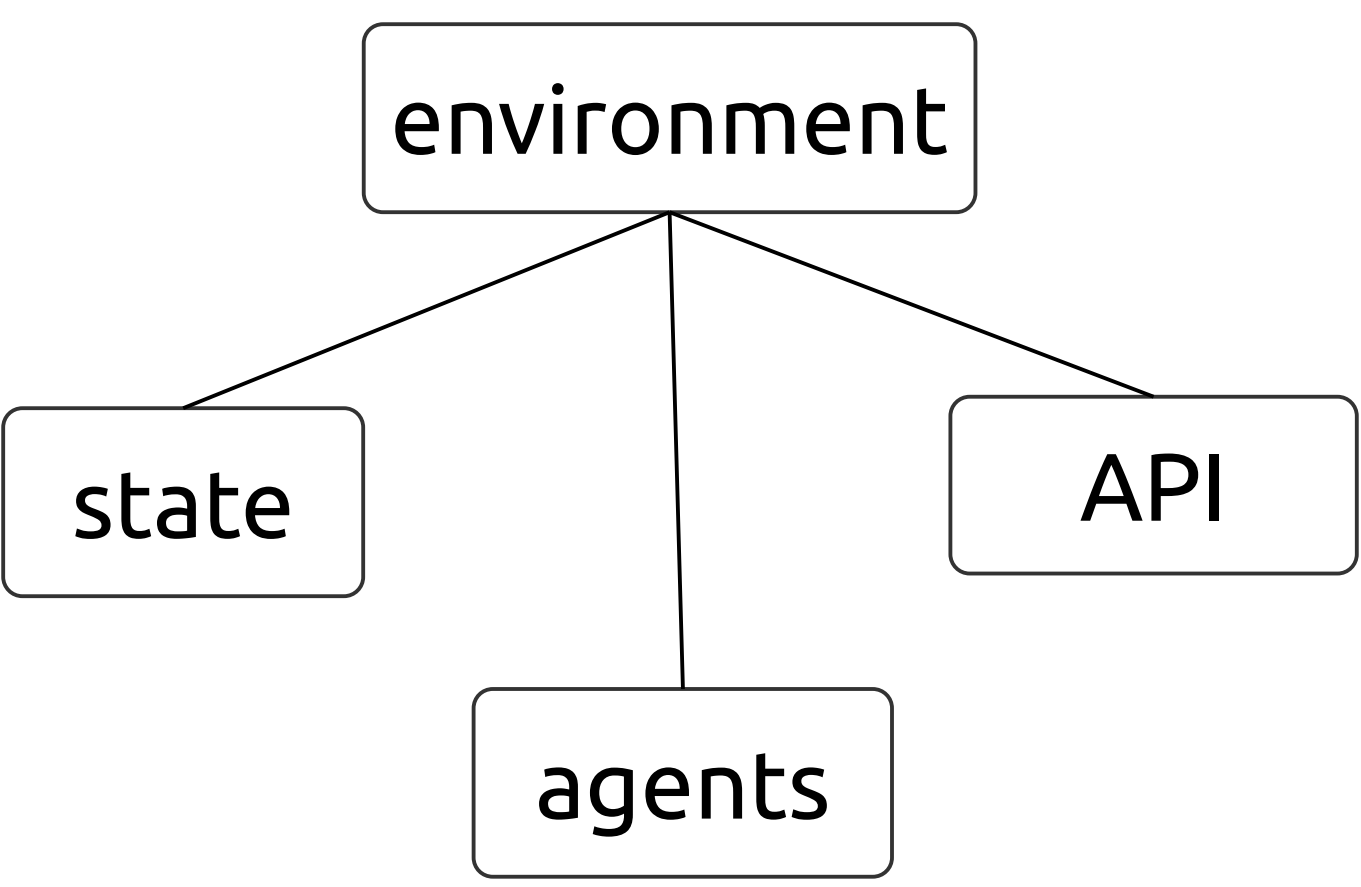
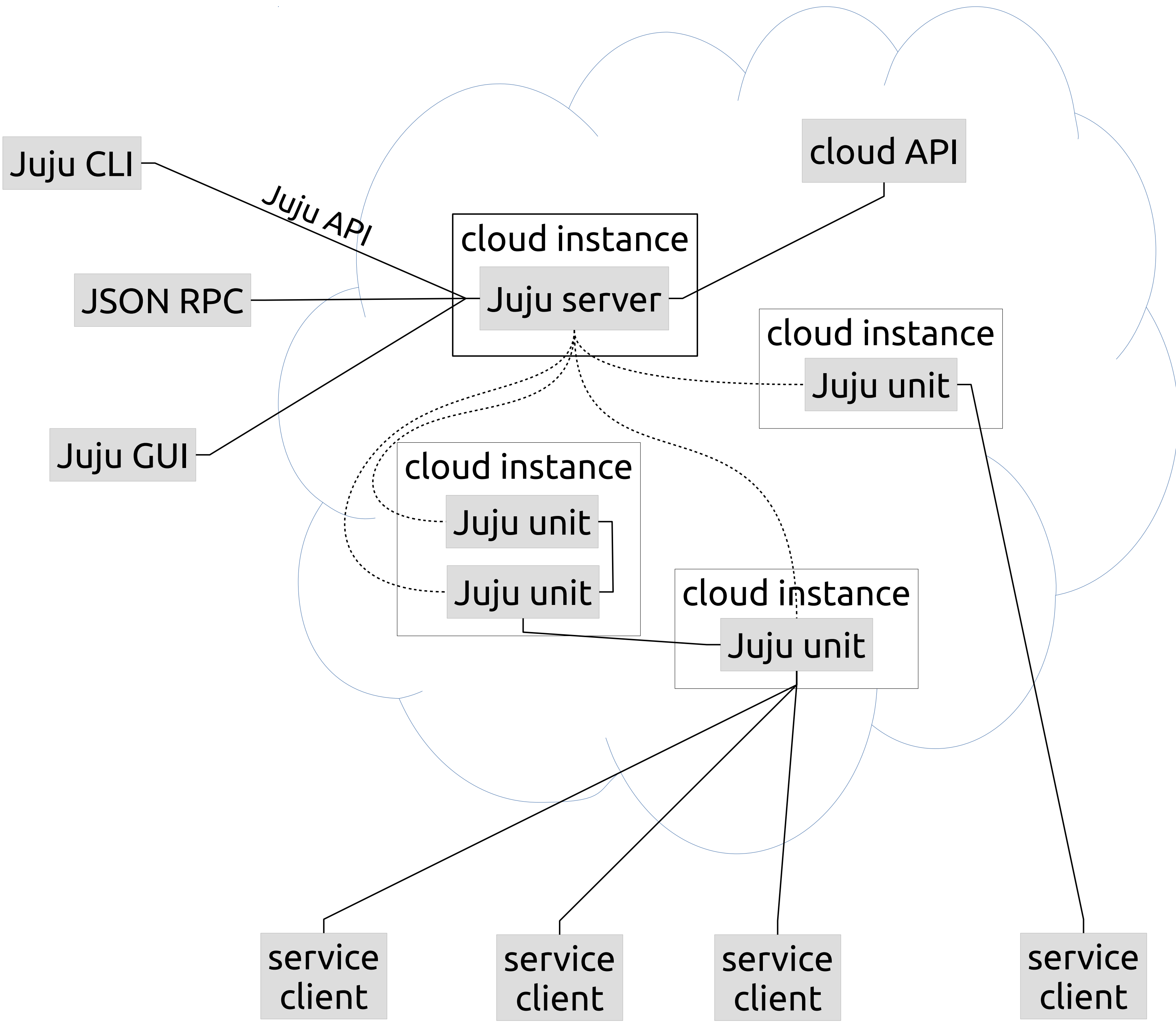
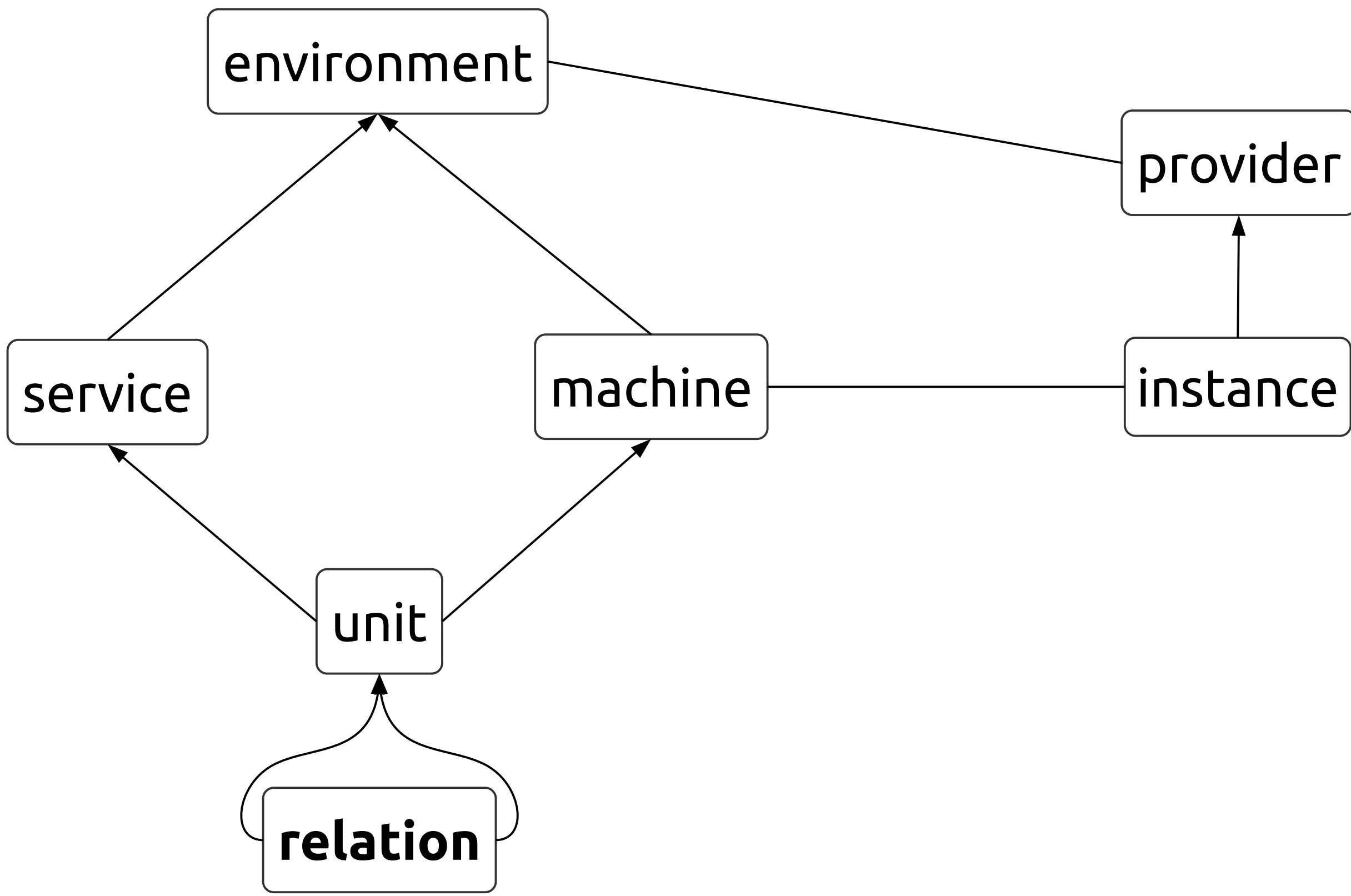
Rather than reasoning about configuration management, create reference implementations of complex systems that you can discuss in a natural way. Decompose big problems for improved quality and flexibility. Deploy many parts of your stack and let Juju configure (and re-configure) them to talk to each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

Supported Providers	Provider Features
AWS (EC2, etc.)	Instances Storage Networking Availability Zones Containers/Virtualization
OpenStack	
Azure	
GCE	
Joyent	
HPCloud	
Digital Ocean	
VMware (upcoming)	
MAAS (bare metal)	
local	
anything else (“manual”)	

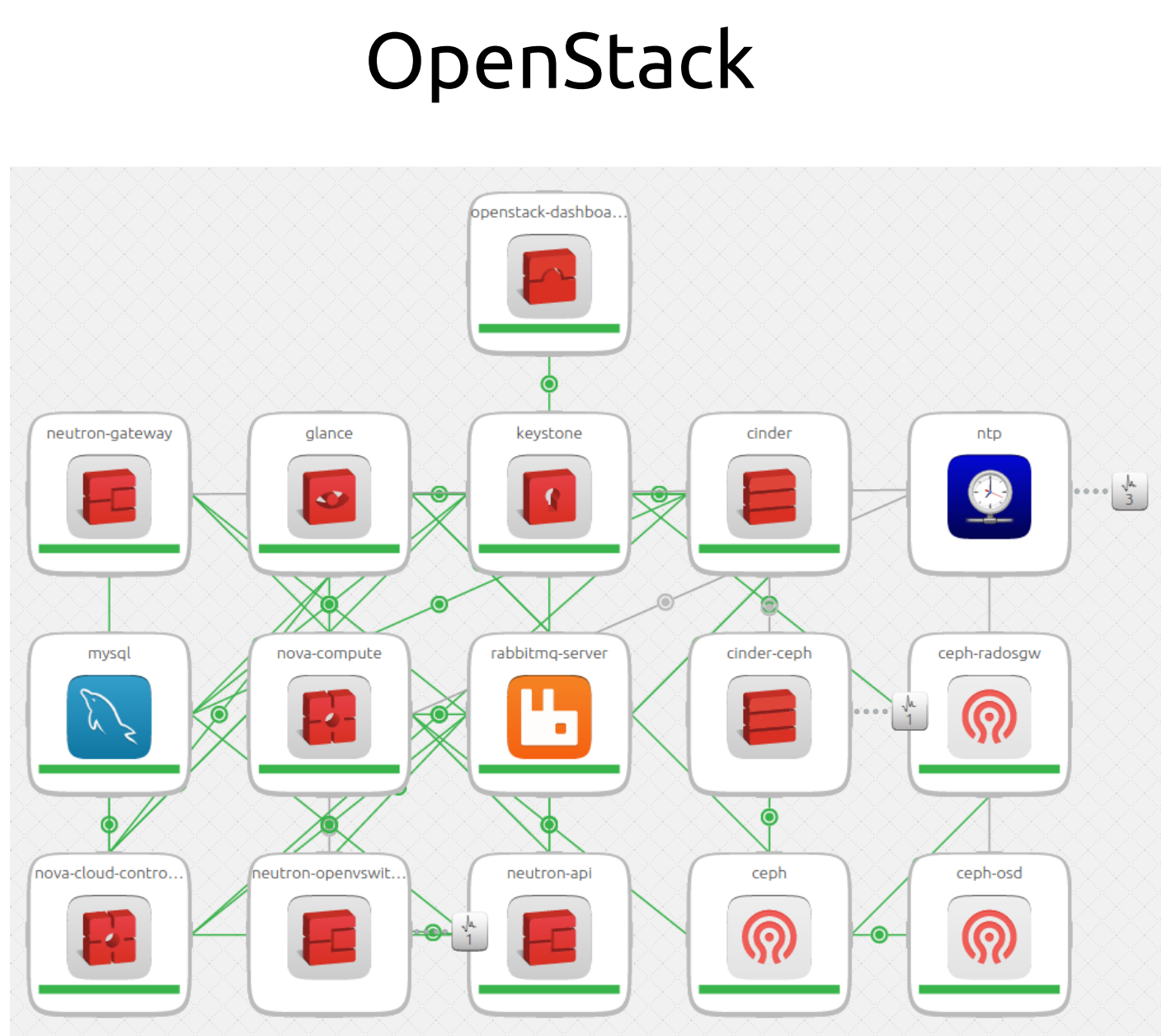


Juju State

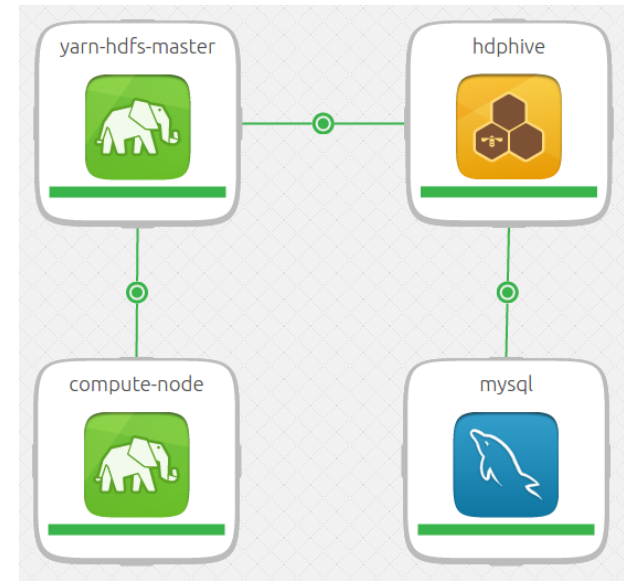
- \* Captures intent for the environment
- \* Drives events which realize that intent
- \* Managed by the Juju server (behind API)
- \* High-availability through replication

Charms

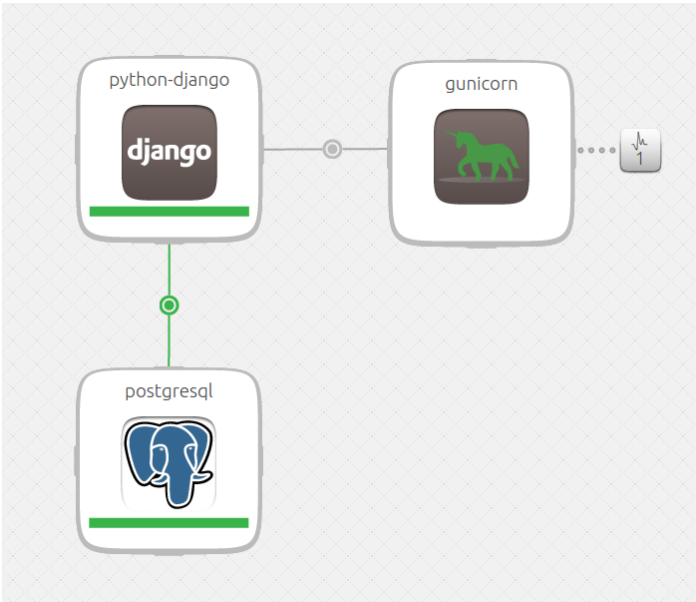
- \* The key abstraction in Juju
- \* Models a service using a declarative syntax
- \* Encapsulates and abstracts away ops knowledge about a service
- \* Describes how to interact with other services



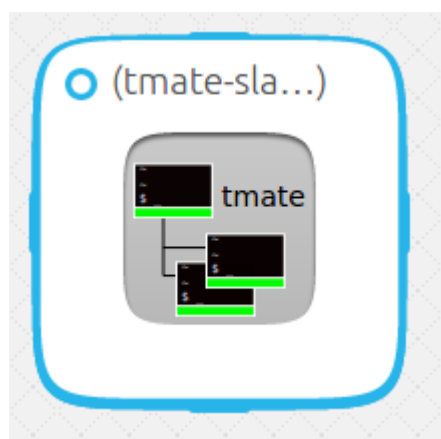
Big Data



Django



“tmate-slave”



Charm Hooks

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



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
Juju deploys full solution	X	X	X
existing “recipes” charm-able	X	X	X
support 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

[https://fosdem.org/2015/schedule/event/juju\\_orchestration/](https://fosdem.org/2015/schedule/event/juju_orchestration/)  
Charles Butler, FOSDEM 2015  
video: <http://www.youtube.com/watch?v=JOq8YrRUFFc>



<https://lists.ubuntu.com/archives/juju/2015-March/005132.html>  
Mark Shuttleworth, [juju-dev] March 2015



<https://demo.jujucharms.com/>

