

Architecture

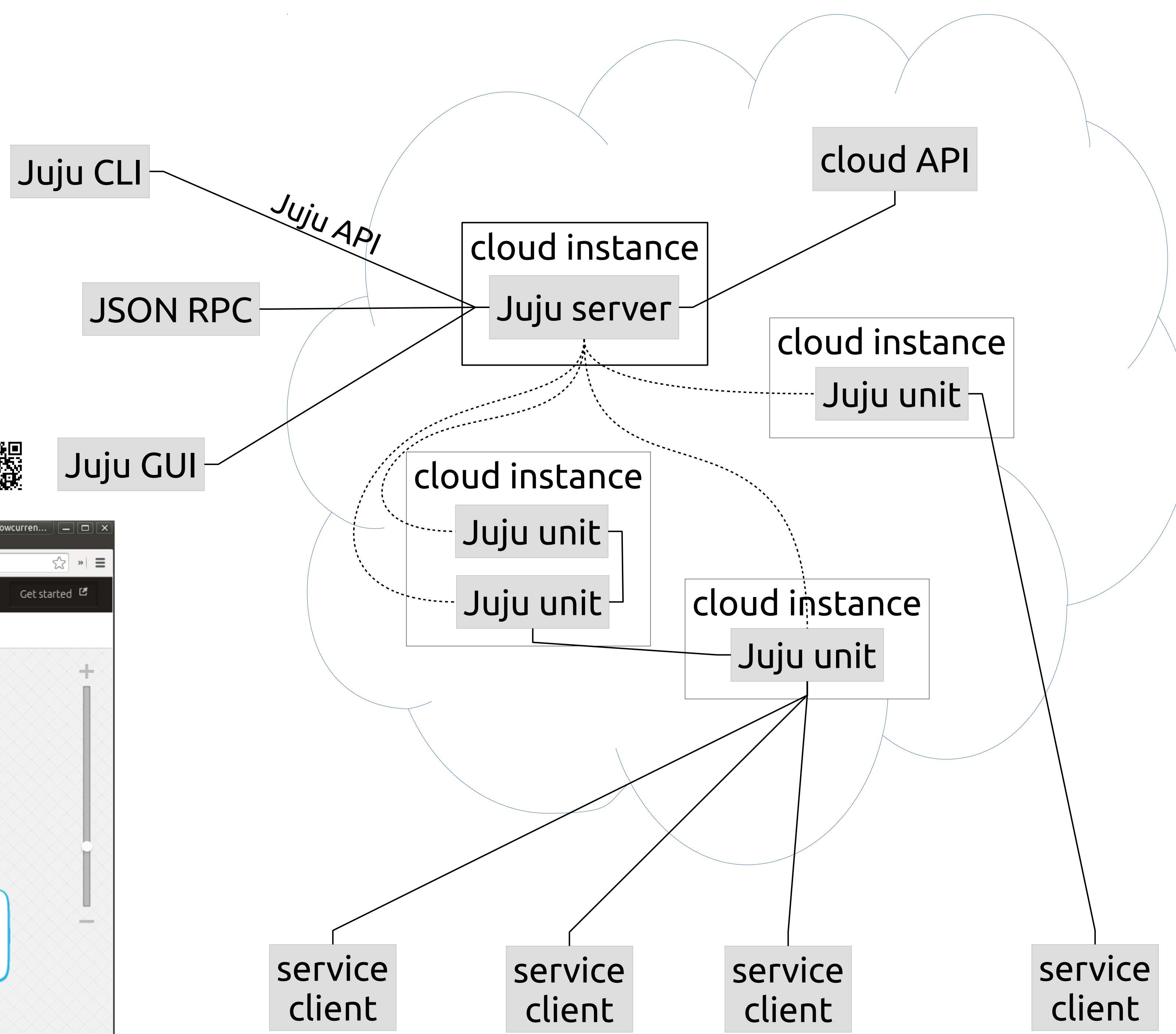
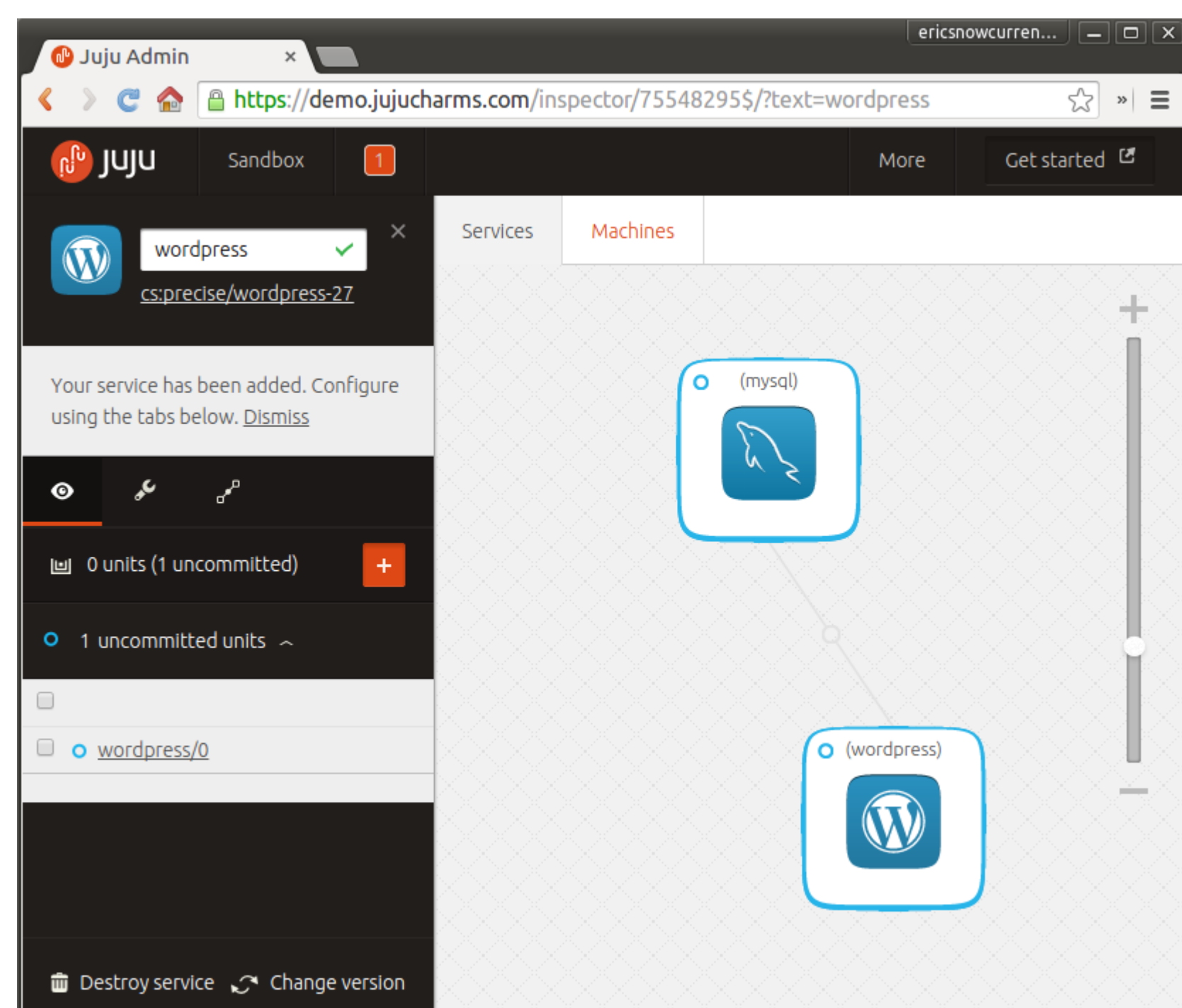
```

juju bootstrap
bootstrapping environment "local"
starting new instance for initial state server
building tools to upload (1.24-alpha.1-trusty-amd64)
installing juju agent on bootstrap instance
uploading to home/psnow/.juju/local/cloud-init-output.log on remote host
bootstrapping juju machine agent
starting juju machine agent (juju-agent-esnow-local)
bootstrap complete
juju deploy mysql
added charm "cs:trusty/mysql-24" to the environment.
juju deploy wordpress
added charm "cs:trusty/wordpress-2" to the environment.
juju add-relation wordpress:mysql:db
juju expose wordpress
juju status --format tabular
(Machines)
ID      STATE  VERSION  DNS      INS-ID  SERIES  PROXYNAME
0       started 1.24-alpha.1 localhost localhost trusty
archand64 started 1.24-alpha.1 10.0.3.71 esnow-local-machine-1 trusty
archand64 started 1.24-alpha.1 10.0.3.41 esnow-local-machine-2 trusty

(Services)
NAME    EXPOSED  CHARM
mysql   false    cs:trusty/mysql-24
wordpress true     cs:trusty/wordpress-2

(Units)
ID      STATE  VERSION  MACHINE  PORTS  PUBLIC-ADDRESS
mysql/0 started 1.24-alpha.1 1 10.0.3.71
wordpress/0 started 1.24-alpha.1 2 10.0.3.41
    
```

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



<https://drive.google.com/file/d/0B0aWHgOTQ1hNOTE4ei1tUldib1U>
Eric Snow, PyCon 2015
ericssnowcurrently@gmail.com



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



Juju

- * "devops distilled"
- * Allows and encourages you to think in terms of services instead of machines
- * Service, machine, and cloud orchestration instead of configuration management.

Charm

- * The key abstraction in Juju
- * Models a service using a declarative syntax
- * Encapsulates and abstracts away ops knowledge about a service
- * Sits a layer above configuration management (salt states, ansible playbooks, etc.)
- * Describes how to interact with other services
- * May be included in a charm bundle with other charms

Charm Store

- * <https://jujucharms.com/>
- * Peer-reviewed, CI-vetted "public" charms
- * CI provided gratis by Canonical
- * OSI-approved licenses
- * Also provides "personal namespace" charms

Authoring Charms

```

$ cat metadata.yaml
name: mycharm
summary: one charm to rule them all
description: ...
maintainer: Eric <eric...@...>
tags: ["awesomeness"]
...
    
```

```

$ cat metadata.yaml
name: python-django
...
provides:
  website:
    interface: http
    sets: [host, port]
    
```

```

$ cat metadata.yaml
name: haproxy
...
requires:
  reverseproxy:
    interface: http
    gets: [host, port]
    
```

```

$ cat config.yaml
options:
  breakfast:
    default: spam
    description: it's what's for dinner
    type: string
    
```

Other Charm Features

- * Actions
- * Subordinates

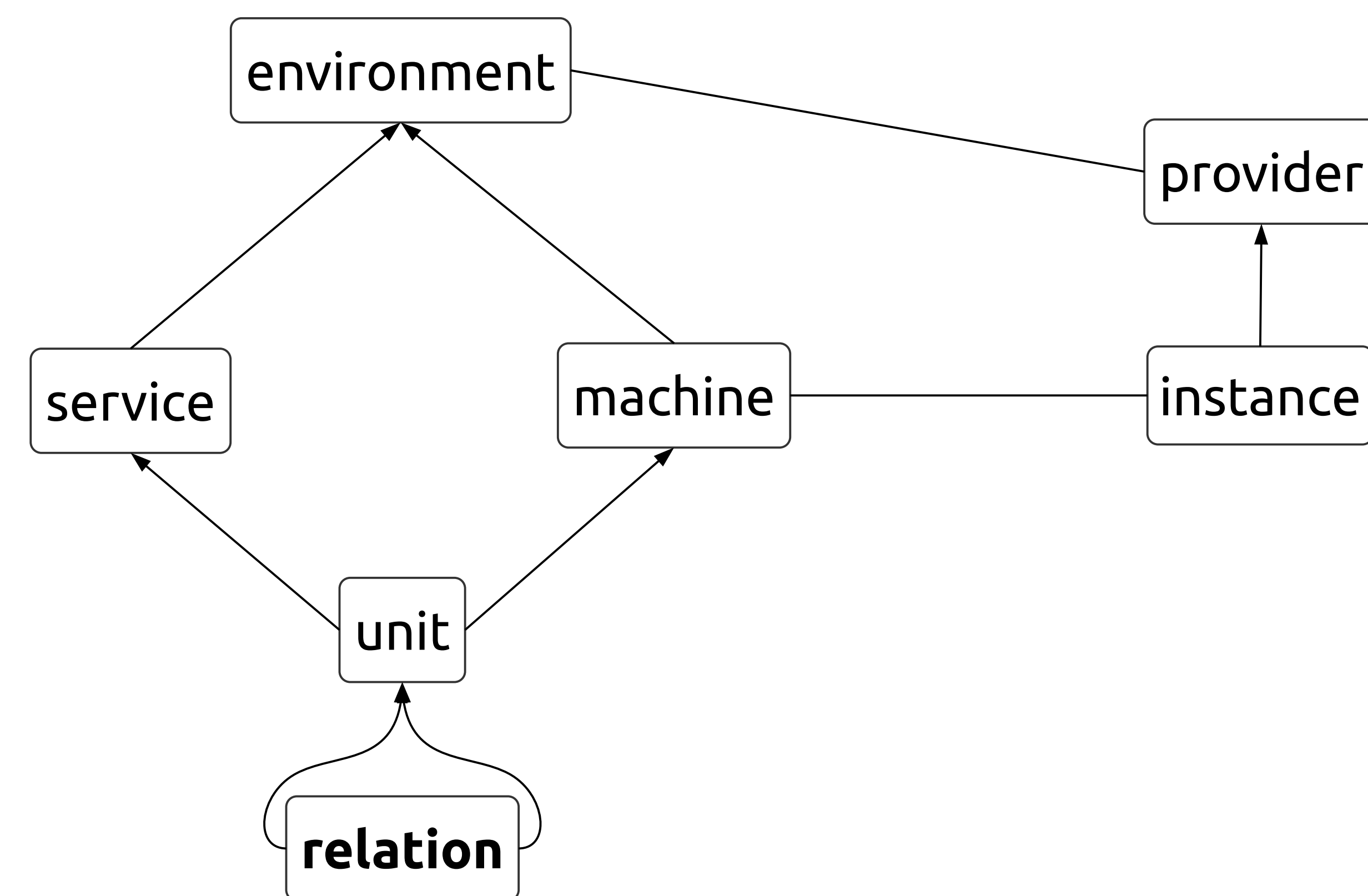
<https://jujucharms.com/docs/1.20/authors-intro>
Juju Charm Authoring Docs



<http://pythonhosted.org/charmhelpers/>
Juju's charmhelpers Python library



Model



Juju State

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

Using Juju

CLI:
juju <command>
juju-quickstart

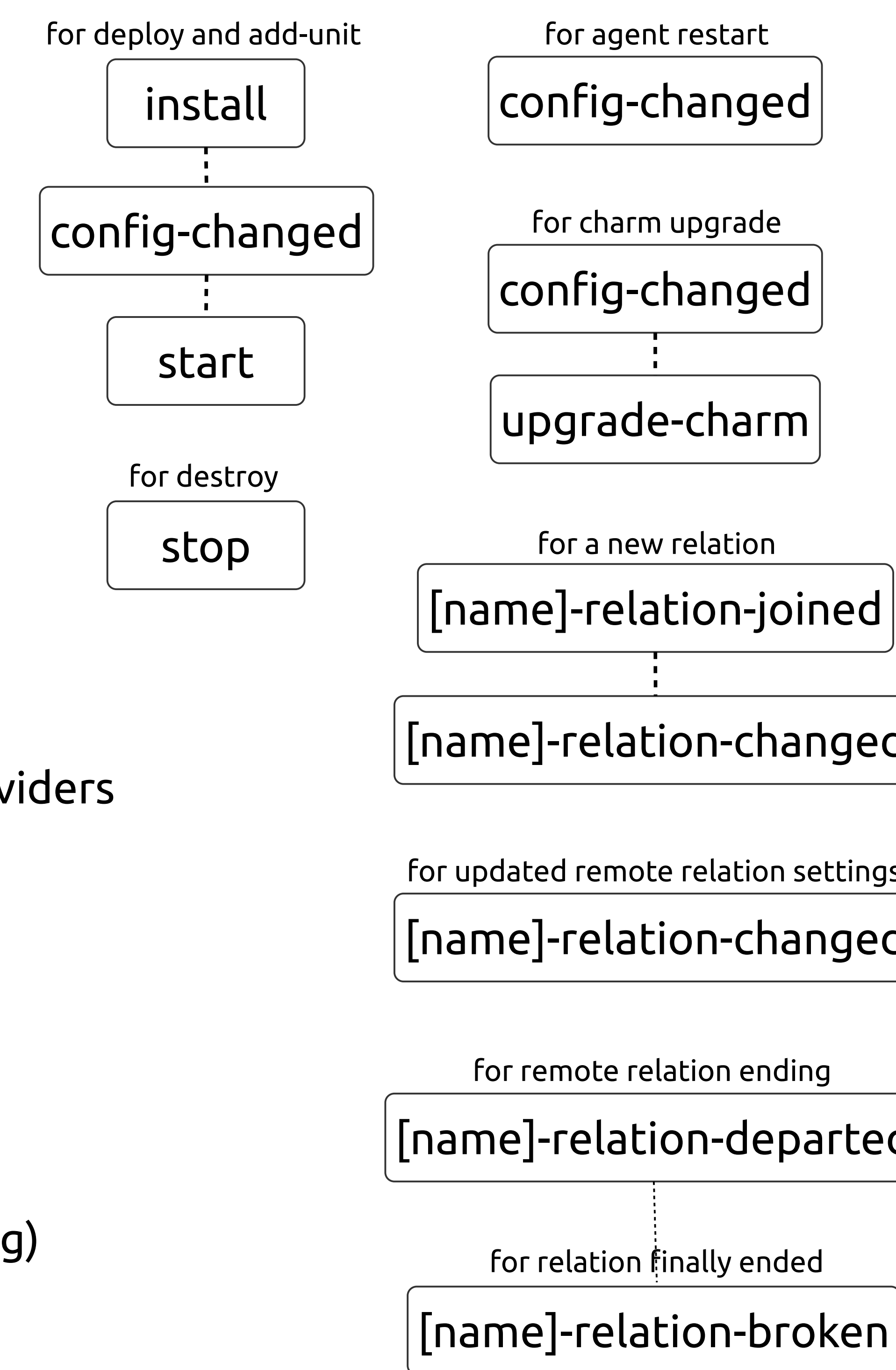
GUI:
all the CLI capability
environment visualization
deploy the "juju-gui" charm

Upcoming Features

Monitoring (service health)
Multi-user
Cross-platform

Charm Hooks

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



Supported Providers

AWS (EC2, etc.)
OpenStack
Azure
GCE
Joyent
HP
Digital Ocean
Vmware (upcoming)
maas
local
anything else ("manual")

Provider Features

Instances
Storage
Networking
Availability Zones
Containers/Virtualization