OSM Hackfest – Session 6
Introduction to Proxy Charms
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What is a charm?

- A charm is a set of scripts for deploying and operating software
  - Event handling built in
  - It’s organized by layers → Helps reusing code
  - It can provide/require interfaces to exchange data with other charms
  - Utilizes Juju to deploy across multiple substrates

- Example:

![Diagram showing the relationship between wordpress and mysql with mysql-interface as the interface]

- Wordpress provides mysql-interface
- Mysql requires mysql-interface
What is Juju?

- Juju is an open source modeling tool, composed of a controller, models, and charms, for **operating software in the cloud**.
- Juju can handle configuration, **relationships** between services, **lifecycle** and **scaling**.
- This ensures that common elements such as databases, messaging systems, key value stores, logging infrastructure and other ‘glue’ functions are available as charms for automatic integration, reducing the burden on vendors and integrators.
What is Juju?
Playing with Juju

www.jujucharms.com/store
Proxy charms in OSM

- VNF configuration is done in three “days”
  - Day-0: The machine is not ready yet
    ○ E.g. import ssh-keys, create users/pass, network configuration, etc.
  - Day-1: The machine just became ready
    ○ E.g.: Configure (install packages, edit config files, execute commands, etc.)
  - Day-2: The machine is ready and configured
    ○ E.g.: Do on-demand actions (dump logs, backup mysql database, etc.)
- Proxy charms cover day-1 and day-2 configuration
Proxy charms in OSM
Charm actions - VNF primitives

MySQL simplified example

**DAY-1**

Proxy Charm

```
# apt install mysql
```

**DAY-2**

Proxy Charm

```
# mysqldump -u root -p db > backup.sql
```
Setting up a charming environment

$ sudo snap install charm --classic

Create needed directories for building the charm

$ mkdir -p ~/charms/layers
$ mkdir -p ~/charms/interfaces

Juju and charms environment variables (Add to ~/.bashrc)

$ export JUJU_REPOSITOARY=~/charms
$ export CHARM LAYERS_DIR=$JUJU_REPOSITOARY/layers
$ export CHARM_INTERFACES_DIR=$JUJU_REPOSITOARY/interfaces
$ juju model-config enable-os-refresh-update=false enable-os-upgrade=false
$ git clone https://github.com/AdamIsrael/osm-hackfest.git
$ osm-hackfest/bin/update-juju-lxc-images --xenial