

Open Source
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OSM Hackfest

Intro to Juju, Charms, and VNF Primitives

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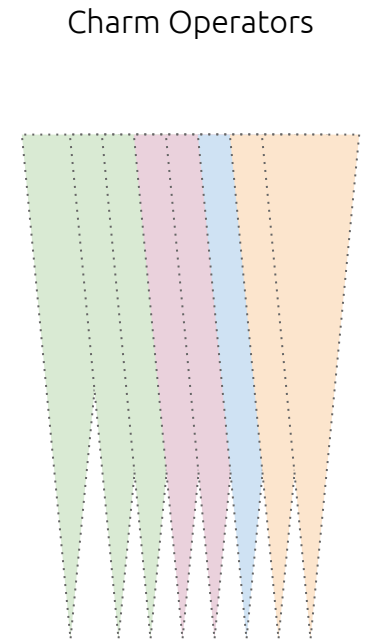
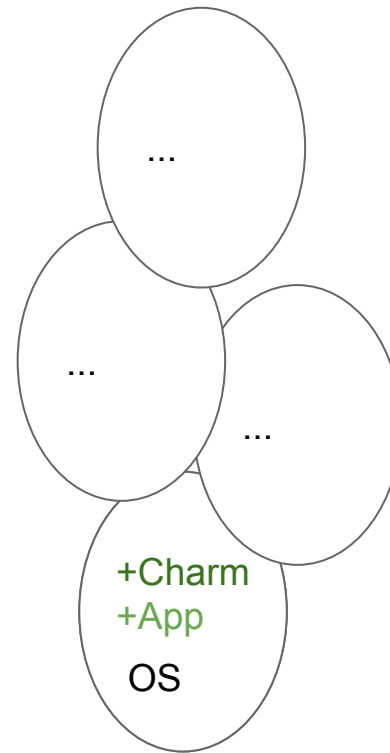
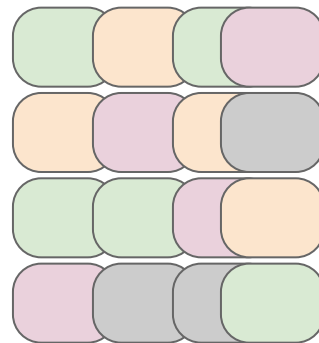
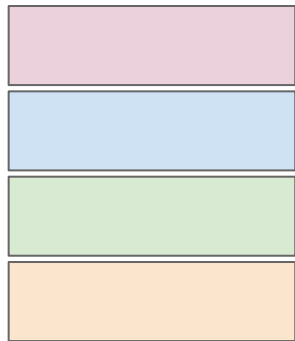
What is Juju?

- 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 a Charm?

- A charm is a collection of actions and hooks that encapsulate the operational logic of an application.
- Hooks manage the lifecycle events of an application, from installation, configuration (day-0), and scaling, in a repeatable and reliable way.
- Actions are on-demand functions that can handle day 1 and day 2 configuration
- Type of charm depends on type of Network Function

4 Generations of Network Function with OSM



Types of Charm: Proxy

- Used for Physical and Virtualized Network Functions
- Runs in an LXD container, separate from the VNF
- Only handles day 1 and day 2 configuration
- Usually communicates with VNF via SSH

Types of Charm: Machine

- Used for Cloud-native Network Functions
- Runs on the same machine as the VNF
- Manages lifecycle and day 0, day 1 and day 2 configuration
- Support added in Release 5, pending new point release

Types of Charm: KNF

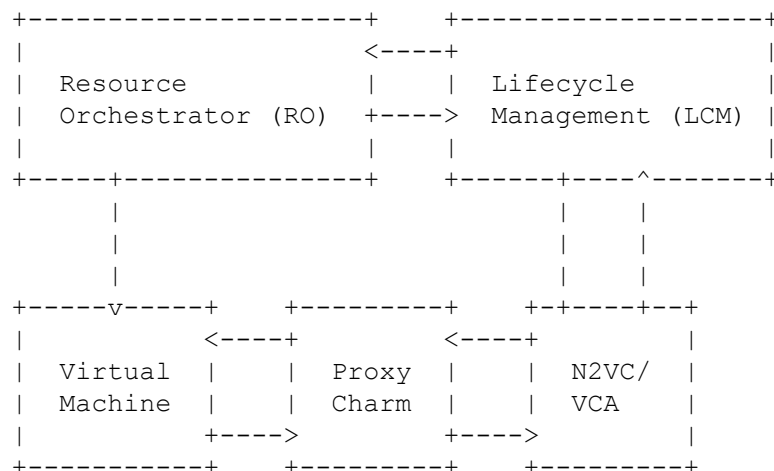
- Used for Kubernetes Network Functions
- Charm runs as Operators in Kubernetes
- Manages lifecycle and day 0, day 1 and day 2 configuration
- Planned for Release SIX

OSM today

- OSM supports proxy charms in all maintained releases. This will be our focus today.
- Release FIVE expanded support for machine charms, but awaits a point release to enable them within the LCM
- Support for Kubernetes charms is planned for Release SIX

Proxy Charms

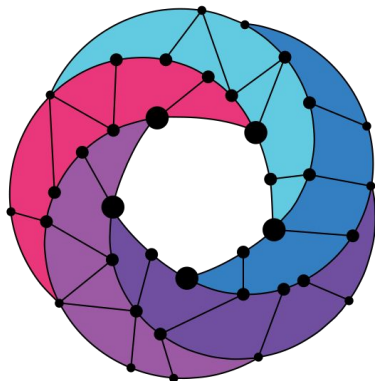
Here is a simple diagram showing how a proxy charm fits into the OSM workflow:



- A VNF package is instantiated via the LCM
- The LCM requests a virtual machine from the RO
- The RO instantiates a VM with the VNF image
- The LCM instructs N2VC, using the VCA, to deploy a VNF proxy charm, and tells it how to access your VM (hostname, user name, and password)

VNF primitives in OSM

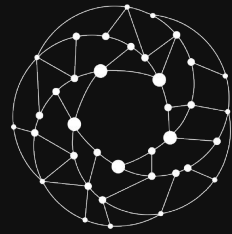
- Primitives are declared in the VNF Descriptor
- The initial-config-primitive (Day-1) is invoked by the LCM at instantiation time
 - This is where the special 'config' primitive is invoked, setting ssh credentials.
- The config-primitive (Day-2) is invoked by the LCM at operator demand (or demanded through the NBI e.g. from an OSS)
- These primitives are a 1:1 map to a charm action or the 'config' hook



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The End

