

Pragma_boot for virtual clusters

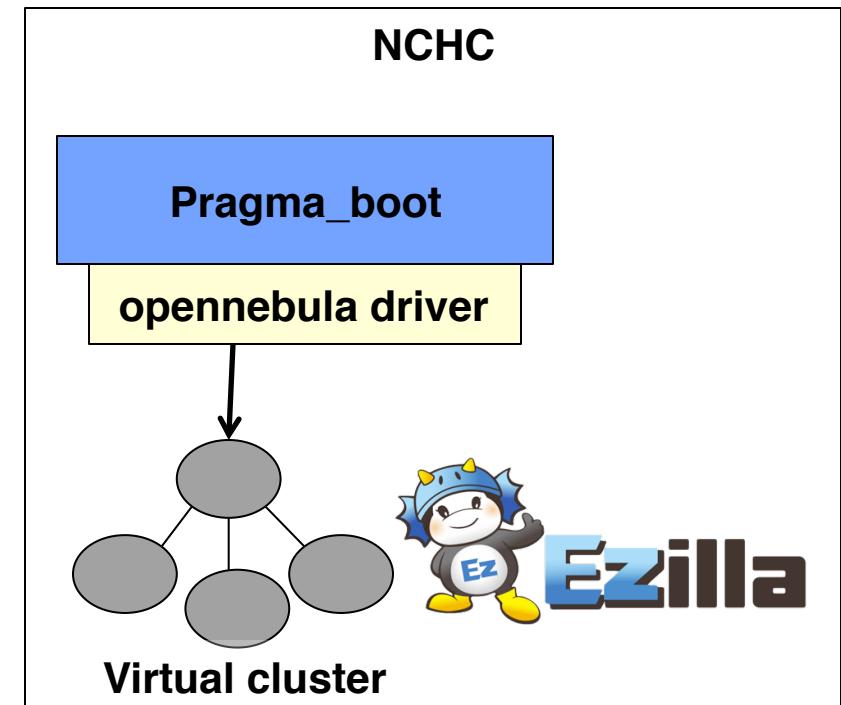
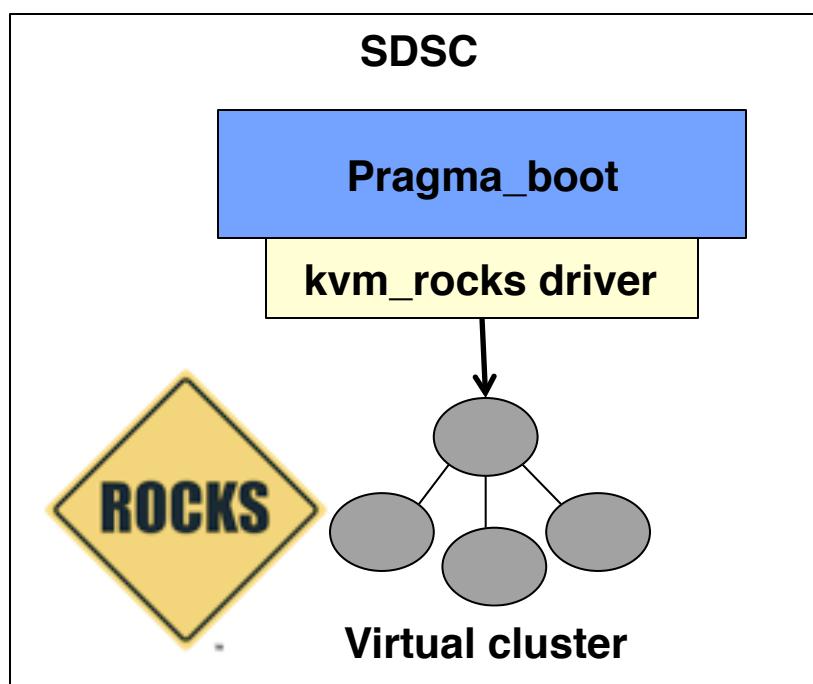
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PRAGMA30 Resource WG

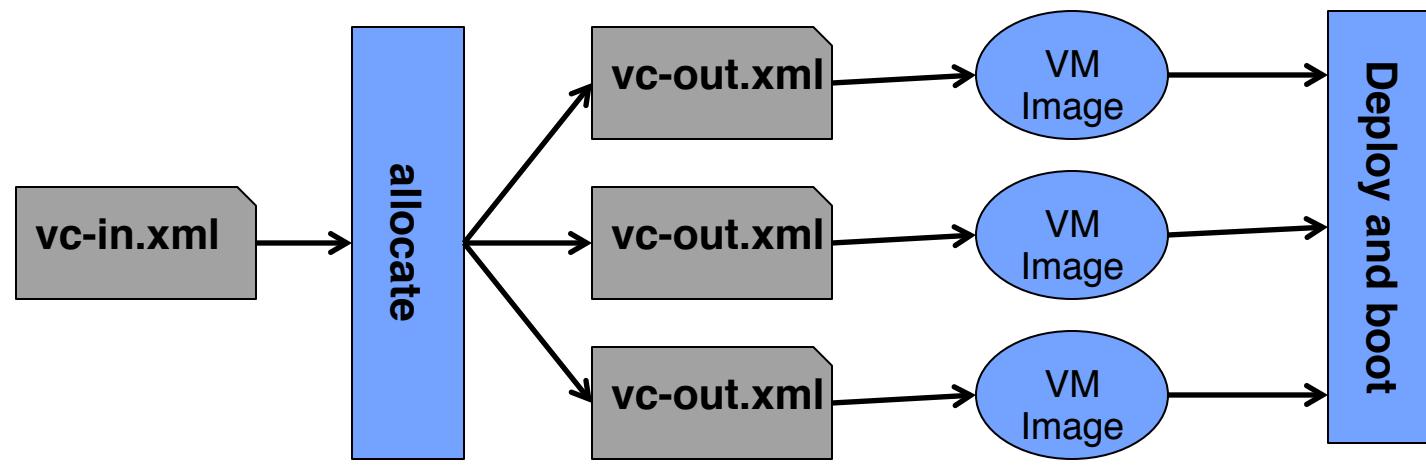
Pragma_boot

- **Goal:** Allocates and boots virtual clusters for users at one or more PRAGMA sites using local VM provisioner



Pragma_boot virtual clusters

- Virtual cluster images must be able to reconfigure themselves.
 - Rocks: Dynip roll, Redhat / Ubuntu : vc-out-parser



- Future Work: Integrate vc-out-parser with CloudInit for greater reconfiguration portability



History of **pragma_boot**

- **2013:** Initial version developed in Python with drivers for Rocks (Bash scripts) and OpenNebula (Ruby).
 - `pragma_boot --vcname wa-dock --num_cpus 0`
- **2014:** Added ability to download virtual cluster images from CloudFront or HTTP repositories
- **2014:** Added ability to launch IPOB enabled cluster (for building multi-site clusters)
- **2015:** Few bug fixes
- **2015/2016:** Restructure into general **pragma** command

Pragma Command

% bin/pragma help

boot – functionality of pragma_boot command

clean – remove virtual cluster

help – print help information

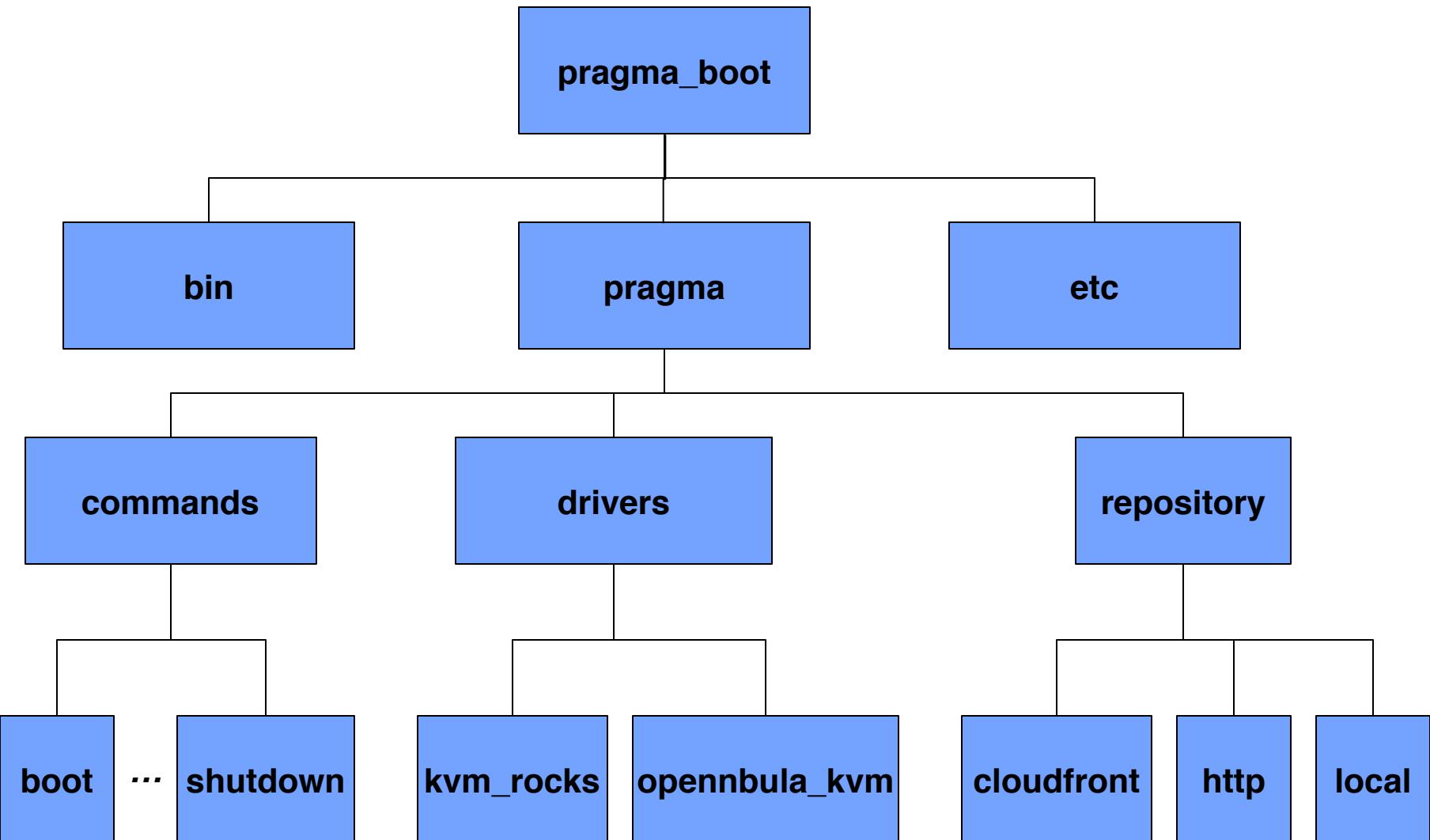
list cluster – print list of virtual clusters

list help - print help information for command list

list repository - print list of available virtual cluster images

shutdown -shutdown running virtual cluster

Pragma_boot directory structure



pragma.drivers.Driver (python)

- **Functions**

- **allocate** – find free public ip and vlan to use for virtual cluster
- **clean** – clean a virtual cluster from the system
- **deploy** – deploy virtual cluster
- **list** – list virtual clusters or details on single virtual cluster
- **shutdown** – shutdown a virtual cluster system
- **Implemented kvm_rocks driver only so far**
- **Future work:** Implement boto driver (Eucalyptus, OpenStack and Open Nebula), others?

Integrating clonezilla into pragma_boot

- **Clonezilla is a partition and disk imaging/cloning program from NCHC**
 - Can convert image from any format to any format.
 - Intermediate format is a Clonezilla Image Directory
- **UCSD recently got Google**
 - We have unlimited disk storage
 - Pragma_boot already understands HTTP (one time transfer, cached locally)

