OPENSTACK ORCHESTRATION VIA PUPPET

BY SANJAY UPADHYAY (@SANEAX)

WHO AM I?

- 15 years of devops experience
- last 8 years in CM
- Have been managing large Hadoop clusters
- Now, at RJIL devops for the openstack cloud infra

```
contact
mail      => saneax@gmail.com
twitter   => @saneax
blog      => saneax.github.io
```

OBJECTIVES

- To install a working openstack via puppet
- To make changes upstream (your own forked repo) and test it
- benefits and why use a CM for development environment

WHY PUPPET AND NOT ANSIBLE, SALT & CHEF?

- There is a lot of work already done on puppet
- Openstack infra folks use it
- puppet openstack is moving into big tent
- puppet is a powerful CM system with wider acceptance
- Wider industry acceptance around openstack ie. mirantis, redhat, cisco, enovance etc.

PRE REQUISITE TO ORCHESTRATING PUPPET FOR OPENSTACK

- install vagrant
- install virtualbox
- install the vagrant hostmanager plugin

  ```
  vagrant plugin install vagrant-hostmanager
  ```

- install r10k/puppet-librarian

WHAT IS PUPPETLABS OPENSTACK MODULE?

- puppetlabs-openstack allows for the rapid deployment of an installation of OpenStack Juno.
- The puppetlabs-openstack module is built on the 'Roles and Profiles' pattern.
- The puppetlabs-openstack module is used to deploy a multi-node, all-in-one, or swift-only installation of OpenStack Juno.
- Every node in a deployment is assigned a single role. Every role is composed of some number of profiles, which ideally should be independent of one another, allowing for composition of new roles.

VERSIONING

This module has been given version 4 to track the puppet-openstack modules. The versioning for the puppet-openstack modules are as follows:

```
Puppet Module :: OpenStack Version :: OpenStack Codename
2.0.0         -> 2013.1.0          -> Grizzly
3.0.0         -> 2013.2.0          -> Havana
4.0.0         -> 2014.1.0          -> Icehouse
5.0.0         -> 2014.2.0          -> Juno
```

WHAT ARE THE ROLES ?

1. allinone
2. compute
3. controller
4. network
5. storage
6. tempes

MULTINODE SETUP

For the multi-node, up to six types of nodes are created for the deployment:

- A controller node that hosts databases, message queues and caches, and most api services.
- A storage node that hosts volumes, image storage, and the image storage api.
- A network node that performs L2 routing, L3 routing, and DHCP services.
- A compute node to run guest operating systems.
- Optional object storage nodes to host an object/blob store.
- An optional Tempest node to test your deployment.

ALL IN ONE NODE SETUP

- The all-in-one deployment sets up all of the services except for Swift, including the Tempest testing.
- Note: This module have been tested with Puppet 3.5 and Puppet Enterprise. This module depends upon Hiera.
- Note: the swift module depends on PuppetDB

LIMITATIONS

- High availability and SSL-enabled endpoints are not provided by this module.

STEP 1 (POPULATE THE PUPPET MODULES AND THERE DEPENDENCIES)

```
cd ./puppetlab-openstack/examples/allinone
./00_download_modules.sh
[R10K::Action::Puppetfile::Install - INFO] Updating module /home/s
[R10K::Action::Puppetfile::Install - INFO] Updating module /home/s
[R10K::Action::Puppetfile::Install - INFO] Updating module /home/s
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```

STEPS

1. vagrant up (we have already the correct Vagrant file for virtualbox)

   ```
   vagrant up
   ```

2. Vagrant provision

   ```
   vagrant provision
   ```

3. Install puppet master (this will install puppet inside the vagrant images)

   ```
   ./10_setup_master.sh
   ```

4. setup the puppetmaster

   ```
   ./11_setup_openstack.sh
   ```

STEPS (CONTINUED)

1. Enable puppet agent

   ```
   vagrant ssh puppet -c 'sudo puppet agent --enable'
   vagrant ssh allinone -c 'sudo puppet agent --enable'
   ```

2. create puppet certs and approve them (caution)

   ```
   ./20_setup_node.sh
   ```

If this fails, check if you have correct /etc/host entries.

```
vagrant ssh allinone -c 'cat /etc/hosts'
127.0.0.1       localhost

127.0.0.1       allinone        allinone
192.168.11.3    puppet             <------
Connection to 127.0.0.1 closed.
```

STEPS (CONTINUED)

1. deploy the openstack

   ```
   ./30_deploy.sh
   ```

   - The above might fail, if any of the steps prior to this had errors
   - In case of not being able to get it up, feel free to contact me at saneax@gmail.com

Q & A