Puppet in the Open Source OpenStack Infrastructure

Puppet Camp SF
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Elizabeth K. Joseph

• Linux hobbyist since 2002
• Professional systems administrator since 2006
• Contributor to Ubuntu, Debian and OpenStack projects
• But perhaps most importantly...
Member of the OpenStack Infrastructure team

We have open sourced our infrastructure!

Lots (about 100!) of projects, including ones for configuration available via:

https://git.openstack.org/cgit/openstack-infra
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>openstack-infra</td>
<td></td>
</tr>
<tr>
<td>openstack-infra/activity-board</td>
<td>Tech community metrics dash of the OpenStack community based on the M</td>
</tr>
<tr>
<td>openstack-infra/askbot-theme</td>
<td>Theme for ask.openstack.org.</td>
</tr>
<tr>
<td>openstack-infra/bugdaystats</td>
<td>Tool to produce static HTML that shows progress during a Bug Day</td>
</tr>
<tr>
<td>openstack-infra/devstack-gate</td>
<td>devstack-gate</td>
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<tr>
<td>openstack-infra/elastic-recheck</td>
<td>Classify tempest-devstack failures using ElasticSearch</td>
</tr>
<tr>
<td>openstack-infra/gear</td>
<td>Pure-Python asynchronous interface to Gearman</td>
</tr>
<tr>
<td>openstack-infra/gearman-plugin</td>
<td>The jenkins gearman plugin</td>
</tr>
<tr>
<td>openstack-infra/gerrit</td>
<td>Fork of Gerrit used by OpenStack</td>
</tr>
<tr>
<td>openstack-infra/gerritbot</td>
<td>gerritbot</td>
</tr>
<tr>
<td>openstack-infra/gerritlib</td>
<td>gerritlib</td>
</tr>
<tr>
<td>openstack-infra/git-review</td>
<td>git-review</td>
</tr>
<tr>
<td>openstack-infra/gitdm</td>
<td>A fork of Jonathan Corbet's gitdm for OpenStack</td>
</tr>
<tr>
<td>openstack-infra/groups</td>
<td>OpenStack Groups community portal</td>
</tr>
<tr>
<td>openstack-infra/groups-static-pages</td>
<td>Community portal static pages</td>
</tr>
<tr>
<td>openstack-infra/infra-manual</td>
<td>infra-manual</td>
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<tr>
<td>openstack-infra/infra-specs</td>
<td>OpenStack Infrastructure Blueprint Repository</td>
</tr>
<tr>
<td>openstack-infra/irc-meetings</td>
<td>OpenStack IRC meetings schedule</td>
</tr>
<tr>
<td>openstack-infra/jeepyb</td>
<td>Gerrit Project Builder Tools</td>
</tr>
</tbody>
</table>
Why?
Why?

Examples are awesome

(I don't want to spend all week figuring out how to use your puppet module)
Why?

Encourages better practices

(though delayed, our upgrade to Puppet 3 was not so painful)
Why?

Allows others in your organization to suggest changes
Why?

Sharing is nice
OK, so how?

- Prepare policies
- Segregate code
- Document
- Share!
Have an open source policy

All software used in your infrastructure is Open Source

...if not, segregate out proprietary
Licenses!

Add a license to your configuration files :)

Seriously.

This is important.

Don't make me email you to ask the license of your config.
Puppet: Step 1

Leverage existing modules or write your own with the intent of sharing

Apache
MySQL
Reviewday

Keep these outside your generic configuration tree

(You're already doing this, right?)
Puppet: Step 2

Split out:

- system configuration
- project configuration

This makes it easier to consume by others
Puppet: Step 3

Split out non-sensitive custom configurations into your own module

Example:
http://git.openstack.org/cgit/openstack-infra/system-config/tree/modules/openstack_project/manifests/zuul_prod.pp

(Variables are your friends!)
Puppet: Step 4

Use Hiera for sensitive data

(Hiera is my favorite thing ever (except for when it's not))
Puppet: Step 5

Set up PuppetBoard

For example: http://puppetboard.openstack.org/

Allows people in your org/community to see status without bugging folks with shell access
<table>
<thead>
<tr>
<th>Status</th>
<th>Hostname</th>
<th>Catalog compiled at</th>
<th>Last report</th>
<th></th>
</tr>
</thead>
<tbody>
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<td>Unknown</td>
<td>Wednesday, January 28</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2015 5:33 PM</td>
<td></td>
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<td>Unknown</td>
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<td>2015 5:34 PM</td>
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<tr>
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<td></td>
<td>2015 5:34 PM</td>
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</tr>
<tr>
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<td>Unknown</td>
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<tr>
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<td></td>
<td>2015 5:34 PM</td>
<td></td>
</tr>
<tr>
<td>changed</td>
<td>cacti.openstack.org</td>
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<td>Wednesday, January 28</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2014 12:20 PM</td>
<td>2015 5:44 PM</td>
<td></td>
</tr>
</tbody>
</table>

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Share!

(Oh, and make sure you have a license)
Document

• Links to source
• Work flow for using the configuration
• Contribution instructions
  – Direct commits/reviews
  – Bug reports
• Bootstrapping and glue
Who else has open source Puppet?

Debian:  https://dsa.debian.org/

Mozilla: https://wiki.mozilla.org/ReleaseEngineering/PuppetAgain

Jenkins: http://jenkins-ci.org/content/come-join-infra-team
Resources

OpenStack Project Infrastructure docs:
http://ci.openstack.org/

OpenStack Infrastructure repository:
https://git.openstack.org/cgit/openstack-infra/

OpenStack specs for when we split out some of our configs:

http://specs.openstack.org/openstack-infra/infra-specs/specs/config-repo-split.html

http://specs.openstack.org/openstack-infra/infra-specs/specs/puppet-modules.html