

External Plugin Interfaces for OpenStack QA Projects

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https://github.com/mtreinish/external_plugins

What is OpenStack QA?

- ▶ Official Mission Statement:
Develop, maintain, and initiate tools and plans to ensure the upstream stability and quality of OpenStack, and its release readiness at any point during the release cycle.

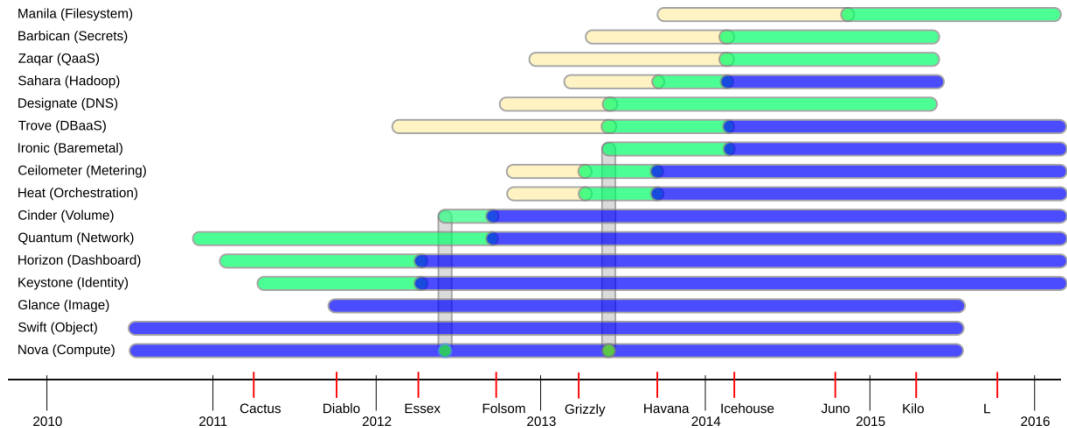
Current QA Projects

- ▶ bashate
- ▶ devstack
- ▶ devstack-plugin-cookiecutter
- ▶ devstack-vagrant
- ▶ grenade
- ▶ tempest
- ▶ temest-lib
- ▶ tempest-plugin-cookiecutter
- ▶ stackviz
- ▶ hacking
- ▶ eslint-config-openstack
- ▶ os-testr
- ▶ openstack-health dashboard

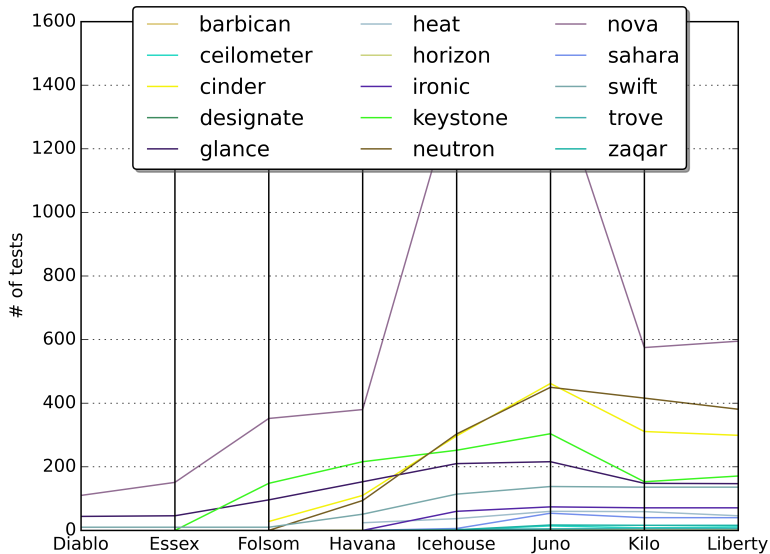
Scaling Limitations

- ▶ Previously QA projects supported all incubated and integrated OpenStack projects
- ▶ This works with 5 projects
- ▶ At 10 things are stretched very thinly

OpenStack Project Growth



Tempest Tests per Project



The Big Tent. . .



QA in the Big Tent

- ▶ QA projects now directly support base
- ▶ Provide stable plugin interfaces to expand functionality
- ▶ Better fits with the growth in projects

Current Projects QA directly supports in-tree

- ▶ Keystone
- ▶ Nova
- ▶ Glance
- ▶ Cinder
- ▶ Neutron
- ▶ Swift

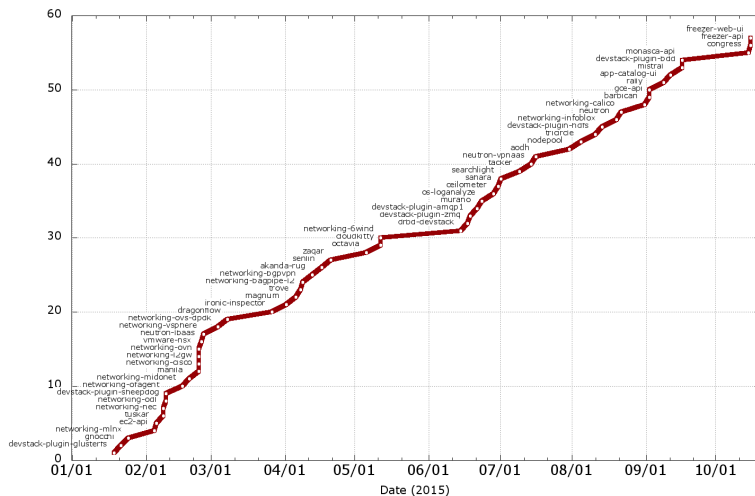
Devstack Plugins

- ▶ Bits of bash code that live outside of devstack tree
- ▶ Called via a strong contract
- ▶ Maintained by the project owners
- ▶ Tested via OpenStack CI

- ▶ Project plugins
 - ▶ Installs new OpenStack service as part of devstack
- ▶ Driver / configuration plugins
 - ▶ Configures existing OpenStack service to use a different driver / backend
- ▶ Registry of plugins maintained by the community:
<http://docs.openstack.org/developer/devstack/plugin-registry.html>

Projects using Devstack Plugins

Number of devstack plugins over time



Source: `git log --diff-filter=A --format=%cd --date=short -1 -- devstack/plugin.sh`

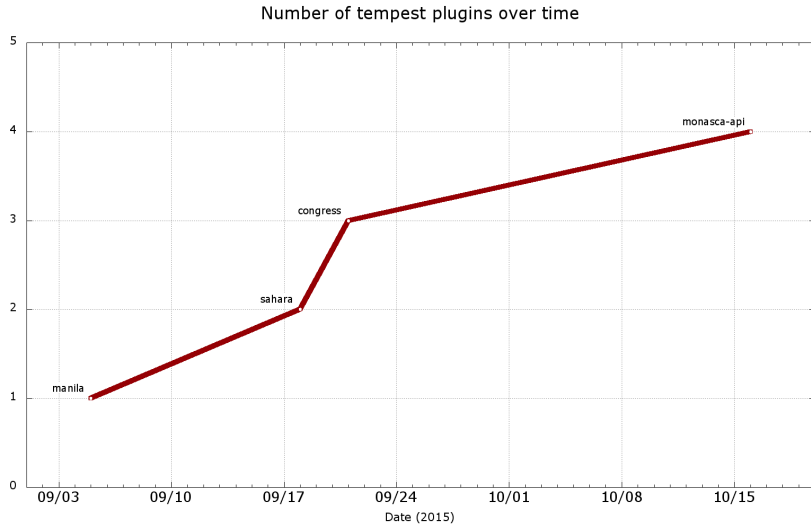
Howto write a Devstack Plugin

- ▶ Devstack plugin cookie-cutter:
`git://git.openstack.org/openstack-dev/devstack-plugin-cookiecutter`
- ▶ Implement functions relevant to the plugin

Tempest Plugins

- ▶ Integrates any external tests into a tempest run
- ▶ Unifies configuration between plugin(s) and in-tree
- ▶
- ▶ Based on stevedore plugin model
- ▶ Automatically discovered when installed
- ▶ Test code built on top of tempest-lib

Projects using tempest plugins



Source: `git blame -L '/^tempest/,+1' setup.cfg | awk '{print $1}' | xargs git log -1 --format=%cd --date=short`

Howto Write a Tempest Plugin

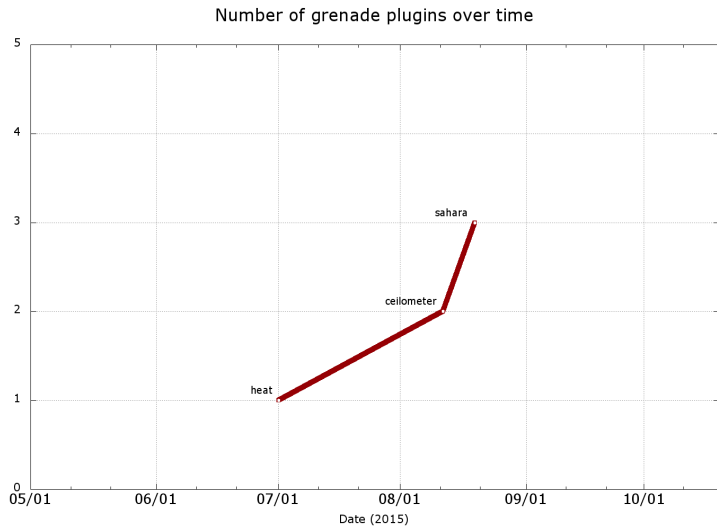
- ▶ Code can be hosted in existing or dedicated git project
- ▶ Extend `plugins.TempestPlugin` from `tempest` (or `tempest-lib`)
- ▶ Implement all abstract methods
 - ▶ Test discovery:
 - ▶ Configuration options:
- ▶ Check if everything you need is tempest lib
- ▶ Setup CI to run test using your plugin, and to keep it tested

Tempest Plugin Interface

```
class TempestPlugin(plugin.TempestPlugin)  
    pass
```


Grenade Plugins

Projects using Grenade Plugins



Source: `git log --diff-filter=A --format=%cd --date=short -1 -- devstack/upgrade/upgrade.sh`

Howto Write a Grenade Plugin

- ▶ upgrade.sh
 - ▶
- ▶ shutdown.sh
 - ▶
- ▶ settings
 - ▶ register the project for upgrade
 - ▶
- ▶ resources.sh
 - ▶
- ▶ Per Release manual steps
 - ▶

Where to get more information

- ▶ Tempest Plugin Docs: <http://docs.openstack.org/developer/tempest/plugin.html>
- ▶ Devstack Plugin Docs:
<http://docs.openstack.org/developer/devstack/plugins.html>
- ▶ Grenade Plugin Docs: <http://docs.openstack.org/developer/grenade/plugins.html>
- ▶ openstack-dev ML: openstack-dev@lists.openstack.org
- ▶ #openstack-qa on Freenode

Questions?