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.
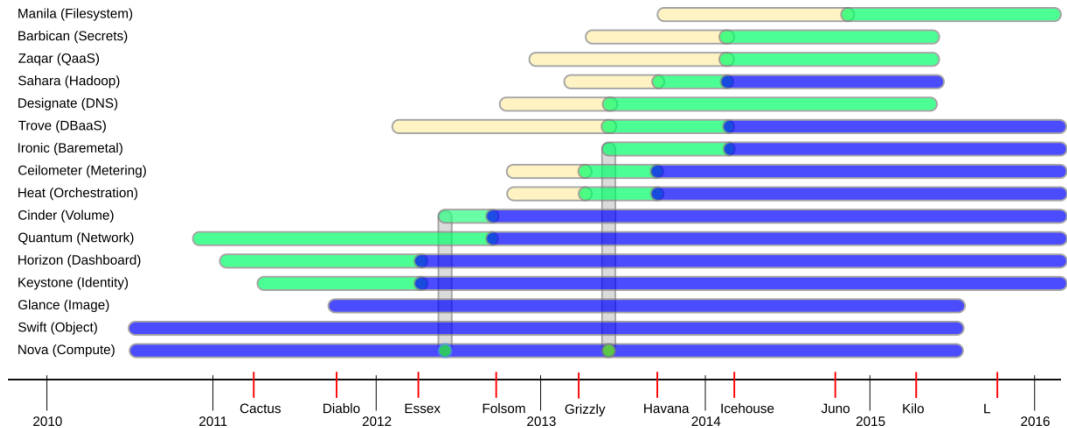
Current QA Projects

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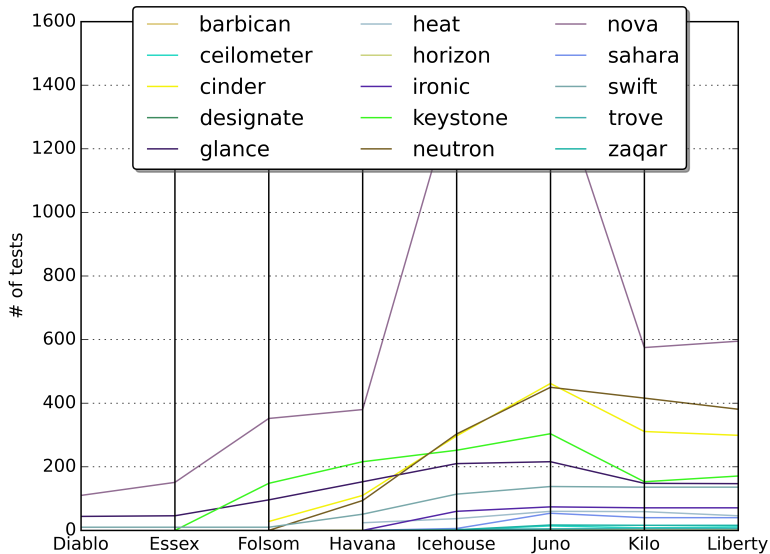- eslint-config-openstack
- os-testr
- openstack-health dashboard

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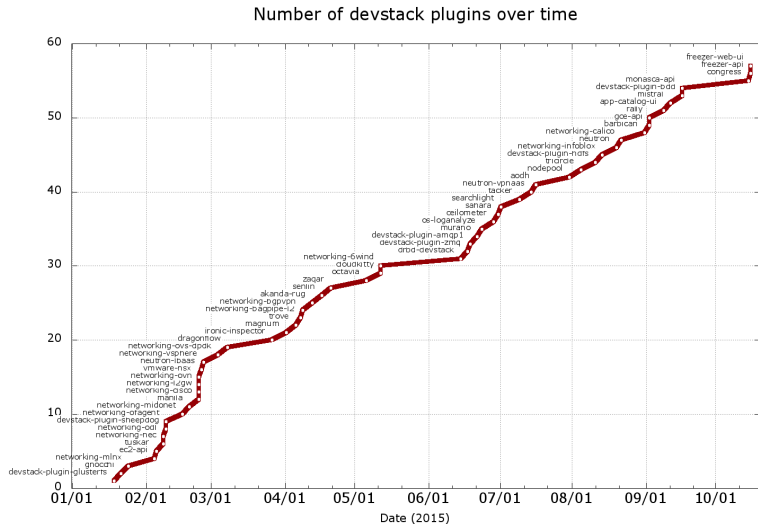
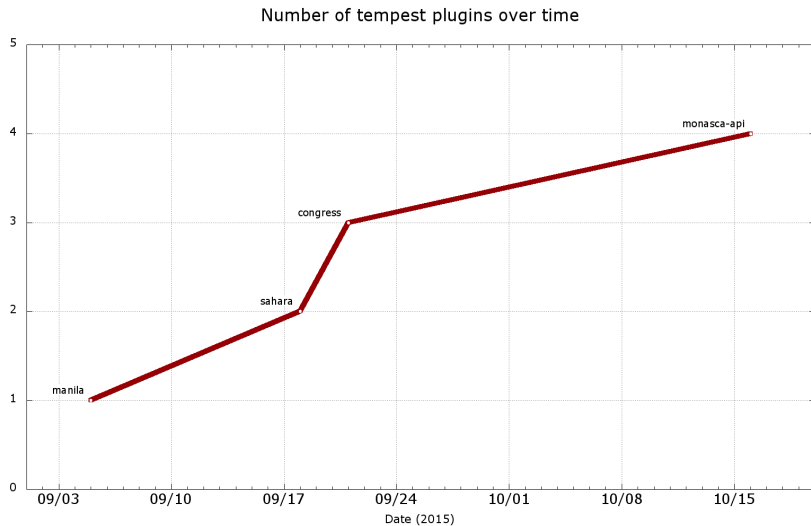Source: git log –diff-filter=A –format=%cd –date=short -1 – devstack/plugin.sh

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

Number of tempest plugins over time

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

Grenade Plugins

Projects using Grenade Plugins

Number of grenade plugins over time
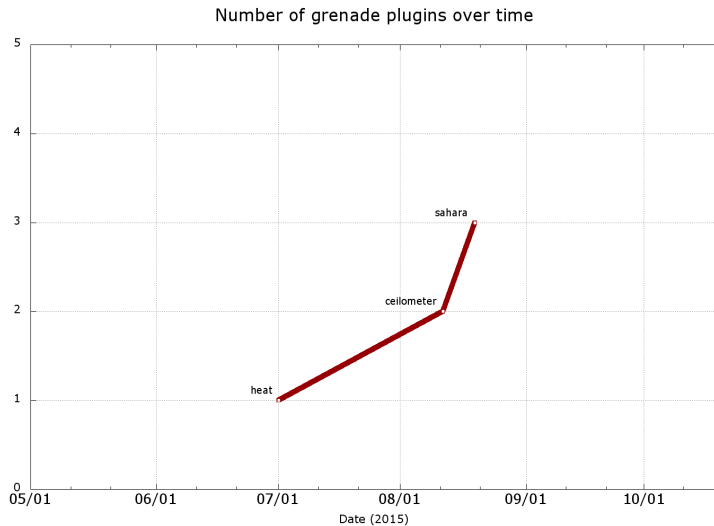
Source: git log --diff-filter=A --format=%cd --date=short -1 -- devstack/upgrade/upgrade.sh

Howto Write a Grenade Plugin

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?