

QA in the Open

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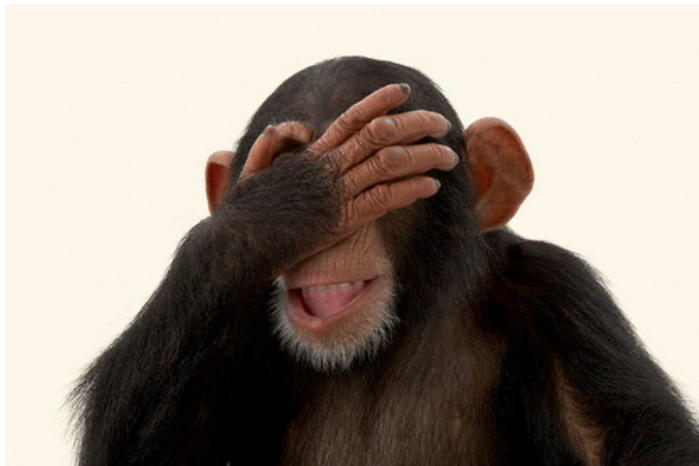
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<https://github.com/mtreinish/qa-in-the-open/tree/linuxcon-jp>

What do I mean by Open Source QA

- ▶ Doing Software QA in an Open Source manner
- ▶ Includes running tests and hosting results in the public
- ▶ Basically treat a project's QA like any other Open Source project

My Personal Experiences with Enterprise QA



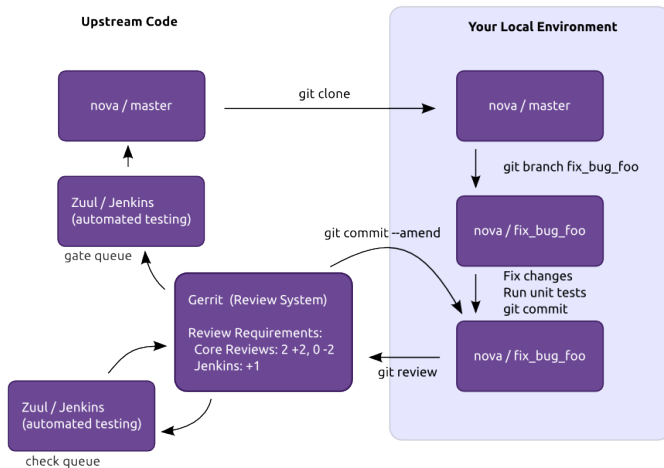
What is OpenStack QA?

- ▶ 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.

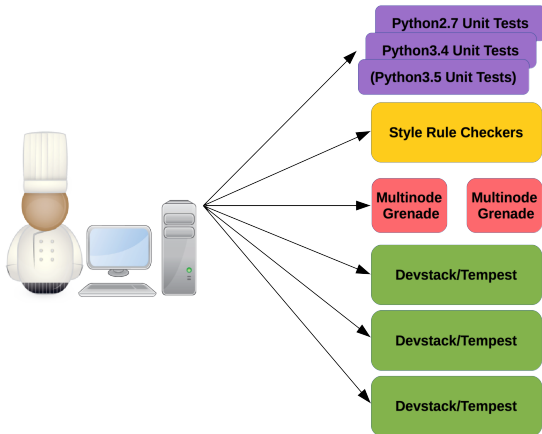
Current OpenStack QA Projects

- ▶ devstack
- ▶ devstack-plugin-cookiercutter
- ▶ devstack-plugin-ceph
- ▶ devstack-vagrant
- ▶ grenade
- ▶ tempest
- ▶ tempest-lib
- ▶ tempest-plugin-cookiercutter
- ▶ bashate
- ▶ stackviz
- ▶ hacking
- ▶ eslint-config-openstack
- ▶ os-testr
- ▶ os-performance-tools
- ▶ openstack-health
dashboard
- ▶ karma-subunit-reporter

What is “the OpenStack Gate”?



What Happens when you push a change?



check

(268)

gate

(26)

post

(79)

Newly uploaded patches enter this pipeline to receive an initial +1. Verified vote from Jenkins.

Changes that have been approved by core developers are enqueued in order in this pipeline, and if they pass tests in Jenkins, will be merged.

This pipeline runs jobs that operate after each change is merged.

Change queue: **operstack/neutron**

operstack/neutron	unknown
161874.23	3 hr 57 min
gate-neutron-docs:	SUCCESS
gate-neutron-pep8:	SUCCESS
gate-neutron-python27:	FAILURE
gate-neutron-python34:	FAILURE
gate-temppest-dsvm-neutron-full:	queued
gate-granade-dsvm-neutron:	SUCCESS
gate-neutron-dsvm-apt:	SUCCESS
gate-neutron-dsvm-functional:	SUCCESS
gate-neutron-dsvm-kibstack: (non-voting)	SUCCESS
gate-rally-dsvm-neutron-neutron: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-dvr:	SUCCESS
gate-temppest-dsvm-neutron-identity-v3-only-full-mv: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-knowledge:	SUCCESS
gate-temppest-dsvm-neutron-pg-full: (non-voting)	SUCCESS
gate-neutron-aaasv2-dsvm-minimal:	SUCCESS
gate-granade-dsvm-neutron-multinode: (non-voting)	SUCCESS
gate-granade-dsvm-neutron-dvr-multinode: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-full: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-dvr-multinode-full: (non-voting)	SUCCESS
gate-temppest-dsvm-ironic-pg-pxm: (non-voting)	SUCCESS

Change queue: **operstack/networking-generic-switch**

operstack/networking-generic-switch	unknown
308864.3	3 hr 52 min
gate-networking-generic-switch-docs:	queued
gate-networking-generic-switch-pep8:	SUCCESS
gate-networking-generic-switch-python27:	SUCCESS
gate-networking-generic-switch-python34:	SUCCESS
gate-networking-generic-switch-dsvm:	SUCCESS

Change queue: **operstack/neutron**

operstack/neutron	unknown
209766.12	3 hr 58 min
gate-neutron-docs:	SUCCESS
gate-neutron-pep8:	SUCCESS
gate-neutron-python27:	SUCCESS
gate-neutron-python34:	SUCCESS
gate-temppest-dsvm-neutron-full:	SUCCESS
gate-granade-dsvm-neutron:	SUCCESS
gate-neutron-dsvm-apt:	SUCCESS
gate-neutron-dsvm-functional:	SUCCESS
gate-neutron-dsvm-kibstack: (non-voting)	FAILURE
gate-rally-dsvm-neutron-neutron: (non-voting)	queued
gate-temppest-dsvm-neutron-dvr:	SUCCESS
gate-temppest-dsvm-neutron-identity-v3-only-full-mv: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-knowledge:	SUCCESS
gate-temppest-dsvm-neutron-pg-full: (non-voting)	SUCCESS
gate-neutron-aaasv2-dsvm-minimal:	SUCCESS
gate-granade-dsvm-neutron-multinode: (non-voting)	SUCCESS
gate-granade-dsvm-neutron-dvr-multinode: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-full: (non-voting)	SUCCESS
gate-temppest-dsvm-neutron-dvr-multinode-full: (non-voting)	SUCCESS
gate-temppest-dsvm-ironic-pg-pxm: (non-voting)	SUCCESS

Change queue: **operstack/horizon**

operstack/horizon	0 min
308872.1	3 hr 23 min
gate-horizon-docs:	SUCCESS
gate-horizon-pep8:	SUCCESS

Change queue: **operstack/hwa**

operstack/hwa	0 min
307269.1	1 hr 10 min
gate-nova-docs:	SUCCESS
gate-nova-pep8:	SUCCESS
gate-nova-python27-dbi:	SUCCESS
gate-nova-python34-dbi:	SUCCESS
gate-nova-requirements:	SUCCESS
gate-temppest-dsvm-postgres-full:	SUCCESS
gate-temppest-dsvm-neutron-full:	SUCCESS
gate-granade-dsvm:	SUCCESS
gate-nova-releasesnotes:	SUCCESS
gate-nova-xos-dbi-functional:	SUCCESS
gate-granade-dsvm-multinode:	SUCCESS
gate-temppest-dsvm-cells:	SUCCESS
gate-temppest-dsvm-full-devstack-plugin-ceph:	SUCCESS

Change queue: **operstack/hwa**

operstack/hwa	0 min
304730.1	1 hr 10 min
gate-nova-docs:	SUCCESS
gate-nova-pep8:	SUCCESS
gate-nova-python27-dbi:	SUCCESS
gate-nova-python34-dbi:	SUCCESS
gate-temppest-dsvm:	SUCCESS
gate-temppest-dsvm-postgres-full:	SUCCESS
gate-temppest-dsvm-neutron-full:	SUCCESS
gate-granade-dsvm:	SUCCESS
gate-nova-releasesnotes:	SUCCESS
gate-nova-xos-dbi-functional:	SUCCESS
gate-granade-dsvm-multinode:	SUCCESS
gate-temppest-dsvm-cells:	SUCCESS
gate-temppest-dsvm-full-devstack-plugin-ceph:	SUCCESS

Change queue: **operstack/hwa**

operstack/hwa	0 min
302995.1	1 hr 5 min
gate-nova-docs:	SUCCESS
gate-nova-pep8:	SUCCESS
gate-nova-python27-dbi:	SUCCESS
gate-nova-python34-dbi:	SUCCESS
gate-temppest-dsvm:	SUCCESS
gate-temppest-dsvm-postgres-full:	SUCCESS
gate-temppest-dsvm-neutron-full:	SUCCESS
gate-granade-dsvm:	SUCCESS
gate-nova-xos-dbi-functional:	SUCCESS
gate-granade-dsvm-multinode:	SUCCESS
gate-temppest-dsvm-cells:	SUCCESS
gate-temppest-dsvm-full-devstack-plugin-ceph:	SUCCESS

Change queue: **operstack/devstack**

operstack/devstack	0 min
308791.1	1 hr 5 min
gate-devstack-docs:	SUCCESS
gate-devstack-bashate:	SUCCESS

Change queue: **operstack/horizon**

operstack/horizon	0 min
303595.6	1 hr 10 min
gate-horizon-docs:	SUCCESS
gate-horizon-pep8:	SUCCESS
gate-horizon-python27:	SUCCESS
gate-horizon-python34:	SUCCESS
gate-horizon-rqm-run-lint:	SUCCESS
gate-horizon-rqm-run-test:	SUCCESS
gate-horizon-ha-gy27q38:	SUCCESS
gate-horizon-ha-gy27q39:	SUCCESS

Change queue: **operstack/oslo-concurrency**

operstack/oslo-concurrency	unknown
342693	5 hr 2 min
oslo-concurrency-branch-terball:	SUCCESS
oslo-concurrency-docs:	queued
oslo-concurrency-upstream-translation-update:	queued
oslo-concurrency-coverage:	queued

Change queue: **operstack-infra/project-config**

operstack-infra/project-config	unknown
3800105	5 hr 0 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: **operstack-infra/project-config**

operstack-infra/project-config	unknown
3607766	4 hr 56 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: **operstack/networking-vsphere**

operstack/networking-vsphere	unknown
183616	4 hr 55 min
networking-vsphere-branch-terball:	queued
networking-vsphere-docs:	queued

Change queue: **operstack-infra/project-config**

operstack-infra/project-config	unknown
477038	4 hr 54 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: **operstack-infra/project-config**

operstack-infra/project-config	unknown
806237	4 hr 52 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: **operstack/stackalytics**

operstack/stackalytics	unknown
450718	4 hr 7 min
hook-stackalytics-rtb:	SUCCESS
stackalytics-branch-terball:	queued

Change queue: **operstack/stackalytics**

operstack/stackalytics	unknown
465837	4 hr 7 min
hook-stackalytics-rtb:	SUCCESS
stackalytics-branch-terball:	queued

Change queue: **operstack/governance**

operstack/governance	unknown
468104	4 hr 2 min
static-governance-publish:	queued

Change queue: **operstack/glance_store**

operstack/glance_store	unknown
376619	3 hr 16 min
glance_store-branch-terball:	queued
glance_store-docs:	queued
glance_store-releasesnotes:	queued
glance_store-upstream-translation-update:	SUCCESS

In The Beginning

- ▶ Projects had unit tests
- ▶ Some projects had functional tests
- ▶ Testing was central to OpenStack culture
- ▶ But, no dedicated effort on QA or testing

Then there was Tempest

- ▶ The OpenStack integration suite
- ▶ Runs against a running OpenStack cloud via the REST APIs
- ▶ First dedicated QA effort in the community

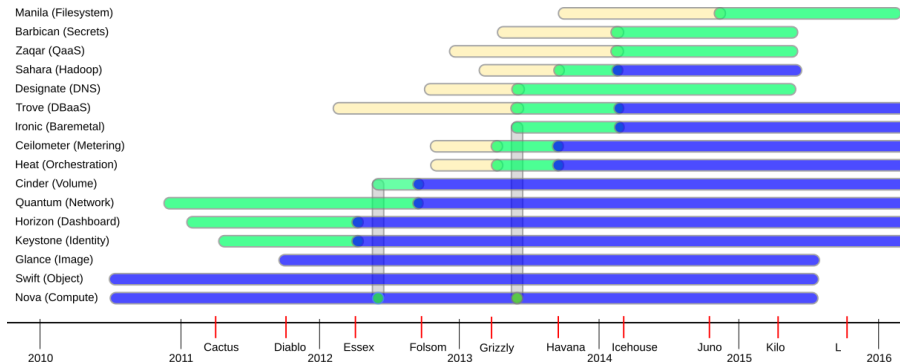
QA Becoming a Defined Group

- ▶ 2 years later a separate project was created in governance around QA
- ▶ Started with just 2 projects: Tempest and Grenade
- ▶ Slowly started to consolidate several existing and add new projects

Early Approach to QA

- ▶ Only support for testing **Integrated** and **Incubated** projects
- ▶ Closer to a more traditional top down approach
- ▶ Testing was mostly unit tests and tempest tests
- ▶ All integrated and incubated projects had to co-gate against each other in 1 large integrated gate queue

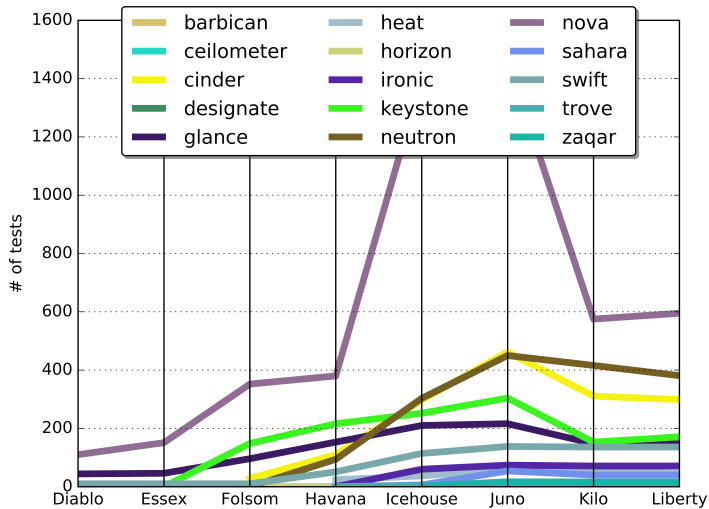
OpenStack Project Growth



QA Growing Pains

- ▶ QA Projects have a small core review team
- ▶ Limited expertise on newer projects
- ▶ Project teams weren't motivated to contribute

Tempest Tests per Project



The Big Tent

- ▶ OpenStack's most recent governance change
- ▶ Went from having a strict 2 stage approval process and a small set of OpenStack projects to a more inclusive approach
- ▶ Integrated and incubated projects no longer a thing
- ▶ Designed to switch from choosing winners to building an ecosystem

The Big Tent...



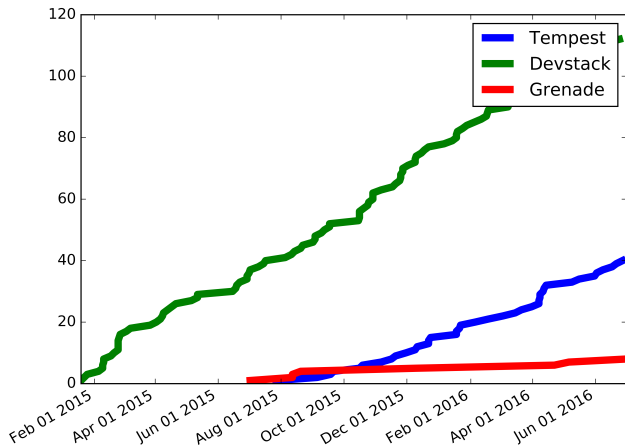
QA in the Big Tent

- ▶ QA projects will still provide direct support for base IaaS projects
- ▶ Provide stable plugin interfaces to expand functionality for other projects
- ▶ Better fits with the growth in projects

Introducing Plugin Interfaces

- ▶ Add stable interfaces to expand QA project functionality
- ▶ Enable any project to self service their own QA
- ▶ Concentrate on making things in QA projects externally reusable
- ▶ Started with Devstack, now Tempest and Grenade too

Lessons from OpenStack QA



- ▶ Monolithic and Separate doesn't scale
- ▶ Keeping Things Separate increases friction

Advantages

- ▶ Enables external audit of testing
- ▶ User confidence in project
- ▶ Enables independently repeatable testing
- ▶ Reusable components

Potential Issues

- ▶ Lack of Corporate Contribution
- ▶ Limited Free Resources for running tests
- ▶ Sometimes difficult to get community buy in

Where to get more information

- ▶ openstack-dev ML openstack-dev@lists.openstack.org
- ▶ #openstack-qa on Freenode
- ▶ <https://wiki.openstack.org/wiki/QA>

Questions?