QA in the Open

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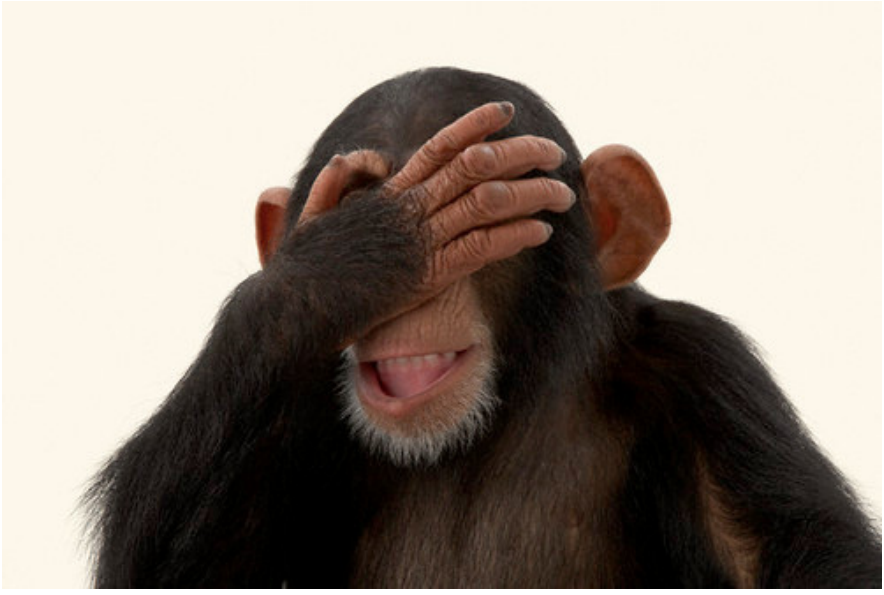
https://github.com/mtreinish/qa-in-the-open/tree/lca2017

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



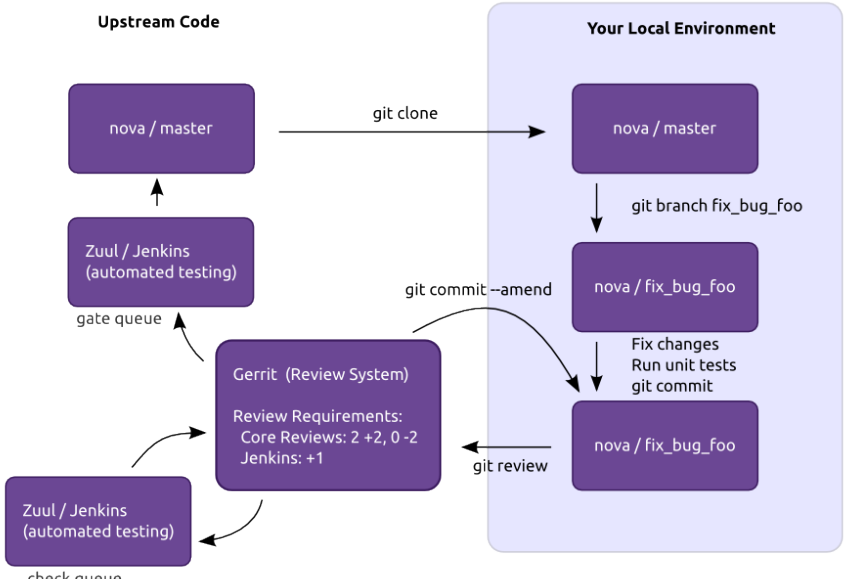
What is OpenStack QA?

- 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.

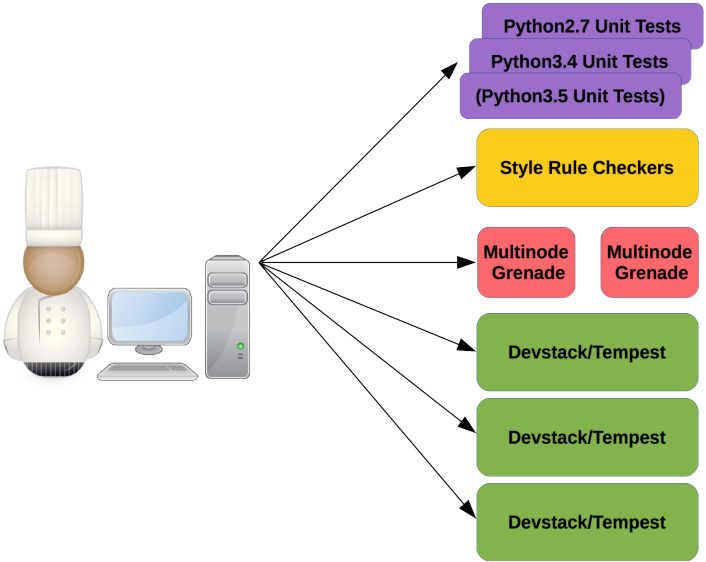
Current OpenStack QA Projects

- devstack
- devstack-plugin-cookiecutter
- devstack-plugin-ceph
- devstack-vagrant
- grenade
- tempest
- tempest-lib
- tempest-plugin-cookiecutter
- 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)

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

Change queue: openstack/neutron

openstack/neutron 181674,23	unknown 3 hr 57 min
gate-neutron-docs:	SUCCESS
gate-neutron-pep8:	SUCCESS
gate-neutron-python27:	FAILURE
gate-neutron-python34:	FAILURE
gate-tempest-dsvm-neutron-full:	queued
gate-grenade-dsvm-neutron:	SUCCESS
gate-neutron-dsvm-api:	SUCCESS
gate-neutron-dsvm-functional:	SUCCESS
gate-neutron-dsvm-fullstack: (non-voting)	SUCCESS
gate-rally-dsvm-neutron-neutron: (non-voting)	SUCCESS
gate-tempest-dsvm-neutron-dvr:	SUCCESS
gate-tempest-dsvm-neutron-identity-v3-only-full-nv: (non-voting)	SUCCESS
gate-tempest-dsvm-neutron-linuxbridge:	SUCCESS
gate-tempest-dsvm-neutron-pg-full: (non-voting)	SUCCESS
gate-neutron-lbaasv2-dsvm-minimal:	SUCCESS
gate-grenade-dsvm-neutron-multinode: (non-voting)	SUCCESS
gate-grenade-dsvm-neutron-dvr-multinode: (non-voting)	SUCCESS
gate-tempest-dsvm-neutron-multinode-full: (non-voting)	SUCCESS
gate-tempest-dsvm-neutron-dvr-multinode-full: (non-voting)	SUCCESS
gate-tempest-dsvm-ironic-pxe_ipa-nv: (non-voting)	SUCCESS

Change queue: openstack/networking-generic-swi...

openstack/networking-generic-switch 308894,3	unknown 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: openstack/neutron

openstack/neutron 280595,12	unknown 3 hr 38 min
gate-neutron-docs:	SUCCESS
gate-neutron-pep8:	SUCCESS
gate-neutron-python27:	SUCCESS
gate-neutron-python34:	SUCCESS
gate-tempest-dsvm-neutron-full:	SUCCESS
gate-grenade-dsvm-neutron:	SUCCESS
gate-neutron-dsvm-api:	SUCCESS
gate-neutron-dsvm-functional:	SUCCESS
gate-neutron-dsvm-fullstack: (non-voting)	FAILURE
gate-rally-dsvm-neutron-neutron: (non-voting)	queued
gate-tempest-dsvm-neutron-dvr:	SUCCESS
gate-tempest-dsvm-neutron-identity-v3-only-full-nv: (non-voting)	SUCCESS
gate-tempest-dsvm-neutron-linuxbridge:	SUCCESS
gate-tempest-dsvm-neutron-pg-full: (non-voting)	SUCCESS

gate (26)

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.

Change queue: integrated

openstack/nova 307269,1	0 min 1 hr 10 min
gate-nova-docs:	SUCCESS
gate-nova-pep8:	SUCCESS
gate-nova-python27-db:	SUCCESS
gate-nova-python34-db:	SUCCESS
gate-nova-requirements:	SUCCESS
gate-tempest-dsvm-full:	SUCCESS
gate-tempest-dsvm-postgres-full:	SUCCESS
gate-tempest-dsvm-neutron-full:	
gate-grenade-dsvm:	SUCCESS
gate-nova-releasenotes:	SUCCESS
gate-nova-tox-db-functional:	SUCCESS
gate-grenade-dsvm-multinode:	SUCCESS
gate-tempest-dsvm-cells:	SUCCESS
gate-tempest-dsvm-full-devstack-plugin-ceph:	SUCCESS

openstack/nova 304730,1	0 min 1 hr 10 min
gate-nova-docs:	SUCCESS
gate-nova-pep8:	SUCCESS
gate-nova-python27-db:	SUCCESS
gate-nova-python34-db:	SUCCESS
gate-tempest-dsvm-full:	SUCCESS
gate-tempest-dsvm-postgres-full:	SUCCESS
gate-tempest-dsvm-neutron-full:	SUCCESS
gate-grenade-dsvm:	SUCCESS
gate-nova-releasenotes:	SUCCESS
gate-nova-tox-db-functional:	SUCCESS
gate-grenade-dsvm-multinode:	SUCCESS
gate-tempest-dsvm-cells:	SUCCESS
gate-tempest-dsvm-full-devstack-plugin-ceph:	SUCCESS

openstack/nova 303995,1	0 min 1 hr 5 min
gate-nova-docs:	SUCCESS
gate-nova-pep8:	SUCCESS
gate-nova-python27-db:	SUCCESS
gate-nova-python34-db:	SUCCESS
gate-tempest-dsvm-full:	SUCCESS
gate-tempest-dsvm-postgres-full:	SUCCESS
gate-tempest-dsvm-neutron-full:	
gate-grenade-dsvm:	SUCCESS
gate-nova-tox-db-functional:	SUCCESS
gate-grenade-dsvm-multinode:	SUCCESS
gate-tempest-dsvm-cells:	SUCCESS
gate-tempest-dsvm-full-devstack-plugin-ceph:	SUCCESS

openstack-dev/devstack 308791,1	0 min 1 hr 5 min
gate-devstack-docs:	SUCCESS

post (79)

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

Change queue: openstack/oslo.concurrency

openstack/oslo.concurrency 342ef43	unknown 5 hr 2 min
oslo.concurrency-branch-tarball:	SUCCESS
oslo.concurrency-docs:	queued
oslo.concurrency-upstream-translation-update:	SUCCESS
oslo.concurrency-coverage:	queued

Change queue: openstack-infra/project-config

openstack-infra/project-config 08001cc	unknown 5 hr 0 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: openstack-infra/project-config

openstack-infra/project-config bd07b6c	unknown 4 hr 56 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: openstack/networking-vsphere

openstack/networking-vsphere 193febe	unknown 4 hr 55 min
networking-vsphere-branch-tarball:	queued
networking-vsphere-docs:	queued

Change queue: openstack-infra/project-config

openstack-infra/project-config d7f06f6	unknown 4 hr 54 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: openstack-infra/project-config

openstack-infra/project-config 8cb6337	unknown 4 hr 52 min
publish-infra-docs-index:	queued
publish-specs-site:	queued

Change queue: openstack/stackalytics

openstack/stackalytics 4087b8	unknown 4 hr 7 min
hook-stackalytics-rtfd:	SUCCESS
stackalytics-branch-tarball:	queued

Change queue: openstack/stackalytics

openstack/stackalytics ae58a37	unknown 4 hr 7 min
hook-stackalytics-rtfd:	SUCCESS
stackalytics-branch-tarball:	queued

Change queue: openstack/governance

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

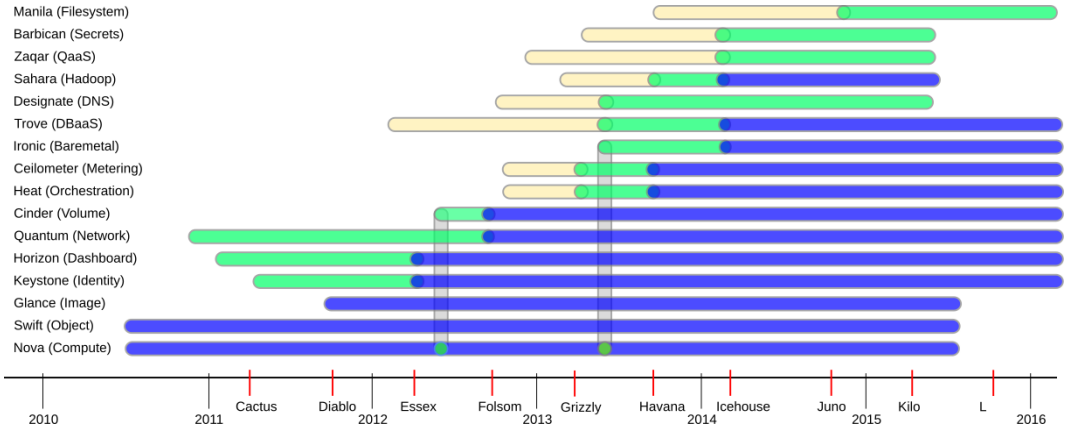
QA Becoming a Defined Group

- 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

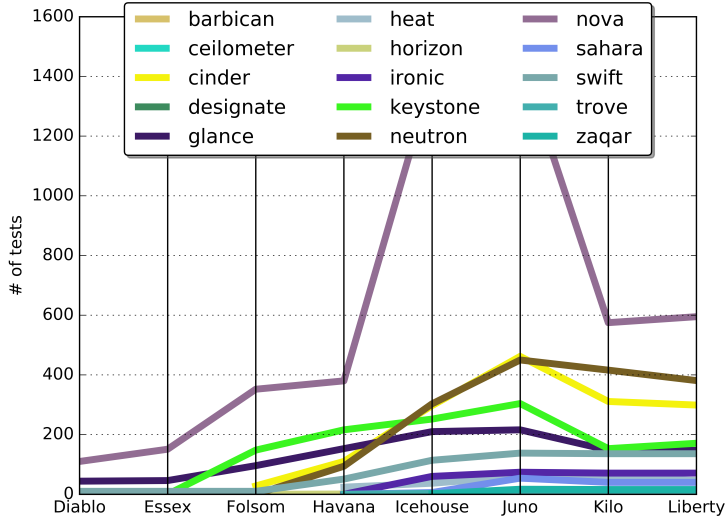
OpenStack Project Growth



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...

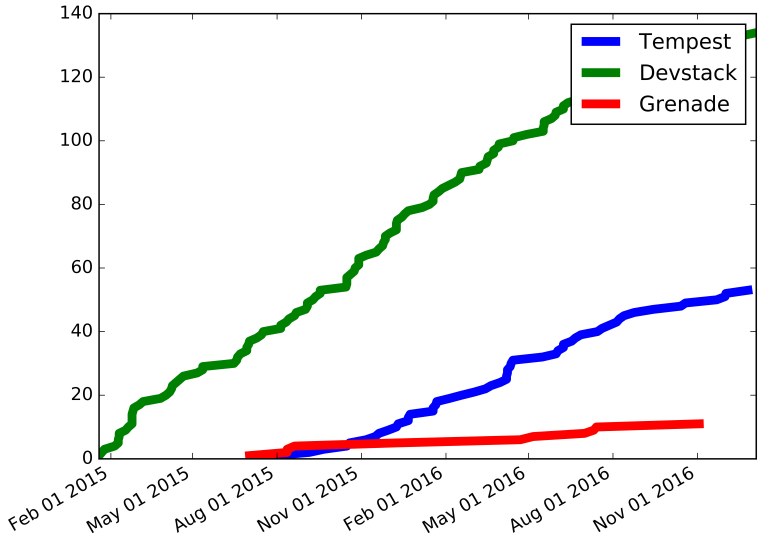
QA in the Big Tent

- 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



Advantages

- Enables external audit of testing
- User confidence in project
- Enables indpendently 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?