

How to Participate Open Source development

- Open Source development tooling and community in the upstream -

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masayukig on Freenode, GitHub, Twitter, LinkedIn

@Room 201, 13:45-14:30, October 6, 2019

@openSUSE.Asia Summit 2019

<https://github.com/masayukig/oss-development-inside-story>

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Agenda

1. About me
2. Today's Goal
3. Open Source Communities
4. OpenStack as an example
5. True Stories
6. How to Participate
7. Summary

DISCLAIMER

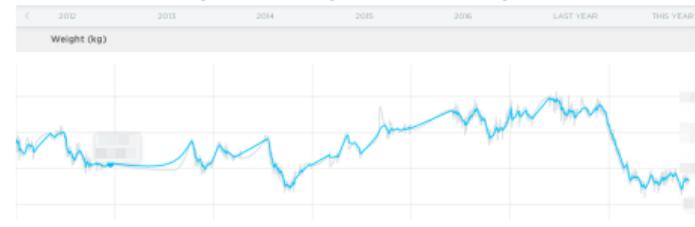
These slides are my own opinion

About me

- ▶ Company : 1998.4-2015.12 Traditional IT company in Japan,
2016.1-2017.3 HPE -> 2017.3- SUSE -> 2019("Further Independence for SUSE")
 - ▶ SUSE OpenStack Cloud Team
- ▶ Job: Senior Software Engineer/Open Source Programmer
 - ▶ [OpenStack QA](#) Up/Downstream development, Core Reviewer
(Tempest, OpenStack-Health, Subunit2SQL, Stackviz,etc.), [stestr](#)
 - ▶ stackalytics.com/?user_id=igawa, github.com/masayukig



- ▶ Books
 - ▶ [OpenStack Cloud Integration](#) (Japanese book) (one of the authors)
 - ▶ [Infra CI Pragmatic Guide - Ansible/GitLab](#) (Japanese book) (as a reviewer)
- ▶ Hobby: Bike(BMC SLR02), Clouds(OpenStack...), Diet(Low-carb), etc.



Introduction

Today's Goal

- ▶ Development ways/tools in OpenStack/OSS communities
- ▶ Essence of OSS development, it's fun

Open Source Communities?

There are a lot styles. All OSS projects are different.

Examples: Led by

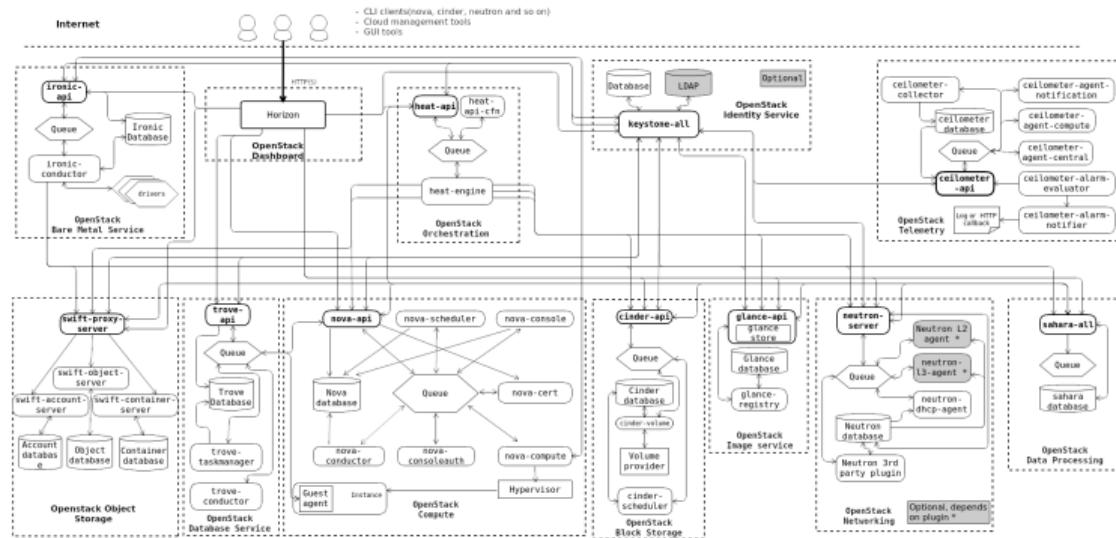
- ▶ Individual (so many, you can find a lot on github)
- ▶ One company (openSUSE, Ansible, Elastic Search, ...)
- ▶ Foundation (OpenStack, Kubernetes, Linux kernel, ...)

Let's take a look at the OpenStack community as an example.

OpenStack community as an example

What is the “OpenStack”?

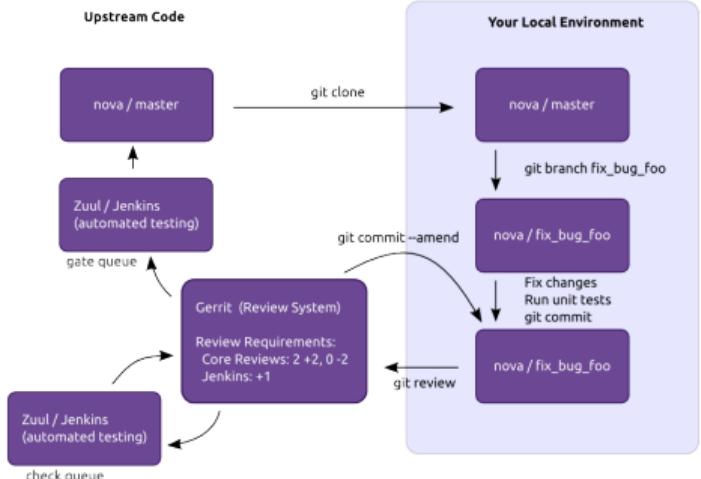
- Written in Python, Open Source Cloud Operation System: Apache License 2.0
- One of the top three active OSS communities
- There are a lot of ‘OpenStack’ projects: [63 projects\(2019-10-05\)](https://www.openstack.org/projects/)
- Released every 6 month: Latest version is called ‘Train’
- Users: AT&T, AA, BBVA, Bloomberg, CERN, China Mobile, Gap, VEXXHOST, Volkswagen, WALMART, etc.. <https://www.openstack.org/user-stories/>



Development Workflow in OpenStack

<https://docs.openstack.org/infra/manual/developers.html>

1. Submit a story to StoryBoard & discuss (Option)
2. Make a patch and submit it to Gerrit
3. Automated testing by Zuul
4. Review it on Gerrit
5. Automated testing by Zuul, and merge



Tools

- ▶ IRC on Freenode: #openstack-*(dev,nova,glance,qa,..) <https://freenode.net/>
 - ▶ Mailing List: <http://lists.openstack.org/>
 - ▶ StoryBoard: <https://storyboard.openstack.org/>
 - ▶ Launchpad: <https://launchpad.net>
 - ▶ Gerrit: <https://review.opendev.org/>
 - ▶ Gitea: <https://opendev.org/openstack/>
 - ▶ Zuul: <https://zuul.openstack.org>
 - ▶ OpenStack-Health: <http://status.openstack.org/openstack-health/>

The screenshot shows the freenode homepage. At the top, there's a dark header with the word "freenode" in green on the left and a search bar with the placeholder "Search using Google" on the right. Below the header is a large white banner with the text "Welcome to freenode — supporting free and open source communities since 1998". Underneath the banner are three dark gray buttons with white icons: a speech bubble for "Chat", two people for "Register a group", and a question mark for "Knowledge Base".

Did you hear? freenode #live is coming to town!

A little over a month from now, the second freenode #live will take place at the Curious in Bristol, with talks from many free and open source community leaders such as Leslie Hawthorn, VM Brasser, Chris Lamb and Bradley Kuhn, freenode alive once again brings an international free software gathering to the South West.

Other exhibitors at this year's event will be the returning main sponsor, [Private Internet Access](#), as well as the Free Software Foundation, OpenSUSE, Minttest, Linux

[Handshake](#) is a new decentralized alternative DNS root, and for a short time before journal and the Handshake Project.

lists.openstack.org Mailing Lists	
Welcome!	
Below is a listing of all the public mailing lists on lists.openstack.org. Click on a list name to get more information about the list, or to subscribe, unsubscribe, and change the preferences as you see fit. To visit the general information page for an unfiltered list, open a URL similar to this one, but with a "?" and the list name appended.	
List Administrators, you can visit the list admin overview page to find the management interface for your list.	
If you are having trouble using the lists, please contact mailing-lists@lists.openstack.org .	
List	Description
Admin-test.org	[no description available]
App-catalog-admins	[no description available]
Community	The OpenStack Community team is the main contact point for anyone managing a local OpenStack Group.
Code-review	[no description available]
Documentation	[no description available]
Enterprise	The Enterprise work group
Headquarters	General discussion list for activities of the OpenStack Foundation.
Headquarters-board	OpenStack Foundation Board of Directors
Headquarters-testing-standards	working group to set the openstack Foundation testing standards for humans not drivers
Icinga-2.org	Interim Working Group Mailing List
Legal-Forum	Discussions on legal matters related to the project
Marketing	The OpenStack Marketing list is the place to facilitate discussion and best practice sharing among marketers and other engineers in the OpenStack community.
OpenStack	The OpenStack General mailing list
OpenStack-announce	Key announcements from the OpenStack & Security advisories
OpenStack-committers	[no description available]
OpenStack-content	The teams responsible to manage openstack.org domain
OpenStack-de	List for German speakers (Deutschsprachiger)



OpenStack

OpenStack is a free and open source cloud computing platform that provides a highly reliable, highly available, and highly scalable infrastructure as a service (IaaS) solution.

Get involved

[Report a bug](#)

[Ask a question](#)

[Help translate](#)

[Register a blueprint](#)

Announcements

OpenStack 12.0 "Rocky" released and now available for download
MyHaven on 2018-07-10
[https://myhaven.openstack.org](#)

Tasks added to review on 2018-07-10

A few days ago the infra team enabled tasks in tempest:
[https://github.com/openstack/tempest/pull/3217](#)

Reviewers are assigned to
Reviewers assigned to
Rocky on 2018-07-10

as part of an OpenStack initiative, Octane has migrated its repository to GitHub.

Tempest 12.0.0 released! (Details)
on 2018-07-02

Tricircle is a project dedicated
to provide an automation
across Horizon + Neutron

FAQs for OpenStack

How to use one glance image to create
support for one project images? (For historical multi-

Projects

- heat control plugin
- Ansible
- Ans
- Ansible
- Ansible Client
- Ansible
- Balooque
- Bartender
- Baremetal
- Bareen
- Bareen API
- Bareen
- Bareen
- Caliper

Additional

Search

How to use one glance image to create
support for one project images? (For historical multi-

Project management by StoryBoard - What's "StoryBoard"

- ▶ Story management tool developed by the OpenStack community
- ▶ Built from scratch, <https://opendev.org/opendev/storyboard/>
- ▶ Architecture: Frontend: JS/Angular, Backend: Python/Pecan
- ▶ 100% open source (Apache2.0)

The screenshot shows the StoryBoard application interface. The left sidebar has a dark theme with icons for Search, Dashboard, Worklists & Boards, Project Groups, Projects (which is selected), and Stories. The main area has a light background. At the top, there's a navigation bar with 'Storyboard' and 'Create New...' buttons, a search bar labeled 'Jump to...', and a user dropdown for 'Masayuki Igawa'. Below the navigation is a header for the project 'openstack-infra/storyboard' with a star icon. A sub-header 'OpenStack Task Tracking API' is followed by a table of stories. The table has columns for 'Active' (with a count of 1), 'Merged' (with a count of 92), and 'Invalid'. The first few rows of the table are:

Story ID	Description	Status
2004103	unable to install mariadb on multinode architecture	Active
2004098	Create New fails to create stories	Active
2004097	story lists in project view should only show stories with active tasks for that project	Active
2003944	Auto populate assignee to task when review is pushed	Active
2003886	Project Group Descriptions	Active
2003719	BUG: Card links don't work in boards	Active
2003701	Mixed Story & Task Automatic Worklist Error	Active
2003698	Feature Request: Enforce flavor extended parameters	Active
2003663	Browsing tasks on the search view sometimes gives an error	Active
2003554	Unicode issue with (at least) reporter names in migration from Launchpad	Active

Gerrit review system - What's "Gerrit"

- Android development community is using it
- Java, 100% open source, <https://www.gerritcodereview.com>
- Not Pull Request, submit a patch and merge it into a central repo
- A terminal client exists > Gerty: <https://gerty.readthedocs.io/>

The screenshot displays two main views of the Gerrit Code Review system.

Main Dashboard: The left side shows a grid of icons and links:

- Discuss code:** Learn More
- Serve GR:** Learn More
- Manage workflows:** Learn More
- Download:** Our latest release is: 2.15.6, Download

Code Review View: The right side shows a list of open pull requests for the 'openstack' project:

Subject	Status	Owner	Project	Branch	Updated	Size	CR	V	W
Add new policy action vifz_autohealing	Open	BhagyaShivale	openstack/tracker	master (bp/edu-auto-healing)	3:25 PM	1	1	1	1
[WIP] Temporarily remove ha guide from index	Merged	Andreas.Jaeger	openstack/openstack-manuals	master (beg/1799010)	3:23 PM	1	1	1	1
[WIP] Add native OVSDB implementation for OpenStack	Merged	Rodolfo.Monsu.Hernandez	openstack/restrictor	master (beg/1799561)	3:25 PM	1	1	1	1
Node Exporter: allows to set collectors enable/disable	Open	Jawon.Choo	openstack/openstack-helptools	master (vmt_collector)	3:25 PM	1	1	1	1
Add charts for Elastic Beats	Merged	Steve.Wilkerson	openstack/openstack-helptools	master (add_elastic_beats)	3:25 PM	1	1	1	1
Check pep8 without ignoring D400	Merged	Dan.Cong.Tien	openstack/cronometer	master	3:24 PM	1	1	1	1
Further refine tuning changes for Ceph	Merged	Matthew.Heller	openstack/openstack-helptools	master (Ceph-TUNING)	3:24 PM	1	1	1	1
Add jobs table for bp add-myosq-support-for-freezer	Open	georgsch2	openstack/freezer-api	master (bp/add-myosq-support-for-freezer)	3:24 PM	1	1	1	1
Add session api for bp add-myosq-support-for-freezer	Open	gecang	openstack/freezer-api	master (bp/add-myosq-support-for-freezer)	3:24 PM	1	1	1	1
Add session table for bp add-myosq-support-for-freezer	Open	gecang	openstack/freezer-api	master (bp/add-myosq-support-for-freezer)	3:24 PM	1	1	1	1
[Openstack] Create Araneus manifest file to deploy Ranges	Open	Chi.Lu	openstack/openstack-helptools	master (zinger_releasefest)	3:24 PM	1	1	1	1
Release forstein reimplementation for tripleo	Open	Juan.Antonio.Osorio.Ballesteros	openstack/releases	master (tripleo/release)	3:23 PM	1	1	1	1
Implement Ceph-client helm test	Open	Reinis.Makadala	openstack/openstack-helptools	master (999910)	3:23 PM	1	1	1	1
ceph: make log directory configurable	Open	chirasaSubreddy.mallavarapu	openstack/openstack-helptools	master	3:23 PM	1	1	1	1
ceph: make log directory configurable	Open	chirasaSubreddy.mallavarapu	openstack/openstack-helptools	master	3:23 PM	1	1	1	1
Implementing the cronjobSeconds field to cronJobs	Open	Dmitrii.Kulakov	openstack/cronometer	master	3:23 PM	1	1	1	1
Adding a dependency module	Open	Mike.Chen	openstack/keystone	master (trivial)	3:23 PM	1	1	1	1
Add additional file for ansible-role openstack-operations-for-stable	Open	Juan.Antonio.Osorio.Ballesteros	openstack/releases	master (tripleo/release)	3:22 PM	1	1	1	1
Add zinger status upgrade check command	Open	Rajat.Dhurjani	openstack/zinger	master (upgrade-checkers)	3:22 PM	1	1	1	1

FYI: Gerty - Gerrit in TTY

- Terminal client
- <https://gerty.readthedocs.io/>
- Demo

File Edit View Bookmarks Settings Help

Unreviewed 51 changes in openstack/tempest Error Sync: 0

Number	Subject	Branch	Topic	Owner	Updated	Size	C	V	W
570287	Deprecate available filters in favor of enabled	master	bug/1628443	Arton Llfshitz	2018-10-24	1	1	1	1
549111	Add test test_create_server_with_bdm_source_image	master	bdm_image	zhufl	2018-10-24	1	1	1	1
602981	Update REVIEWING docs with fast-track approval process	master	reviewing	Felipe Montelro	2018-10-24	1	1	1	1
612277	[Negative] Extend volume over quota limit	master	extend_volume_negati	Liron Kuchlani	2018-10-23	1	1	1	1
588120	Set max microversion 2.35 for nova floatingip and securitygroup	master	bp/clear-deprecated-	zhufl	2018-10-23	2	1	1	1
611068	Make connectivity test less backend dependent	master	bug/1798317	Lucas Alvares Gomes	2018-10-23	1	1	1	1
523935	Add profiler support into Tempest	master	profiler	Ilya Shakhat	2018-10-23	1	1	1	1
602415	Use tempest run command directly for full job	master	use-tempest-run	Masayuki Igawa	2018-10-22	1	1	1	1
560073	Forbid oslo.log to write to STDOUT	master	bug/1764375	Federico Ressi	2018-10-19	1	1	1	1
606909	Adding missing test case of account generator resources	master	606880	Manik Bindlish	2018-10-18	2	1	1	1
609644	Add response schema validation for volume limits	master	bp/volume-response-s	zhufl	2018-10-18	1	1	1	1
608706	Add ipv6 tempest jobs	master	ipv6job	Antonio Ojea	2018-10-17	1	1	1	1
587748	Adding missing test cases in "test_run.py"	master	bp/tempest-cli-unit-	Manik Bindlish	2018-10-17	1	1	1	1
594037	Add testcase for getting hypervisor servers in 2.53	master	hypervisor-252	zhufl	2018-10-16	1	1	1	1
600921	Add response schema validation for snapshot manage	master	bp/volume-response-s	zhufl	2018-10-13	1	1	1	1
605600	Add response schema validation for volume quota classes	master	bp/volume-response-s	zhufl	2018-10-13	1	1	1	1
609624	Add response schema validation for volume snapshots	master	bp/volume-response-s	zhufl	2018-10-12	1	1	1	1
606809	Add response schema validation for encryption types	master	bp/volume-response-s	zhufl	2018-10-12	1	1	1	1
608875	Add response schema validation for volume manage	master	bp/volume-response-s	zhufl	2018-10-12	1	1	1	1
534250	Check network connectivity of the instance before and after live migration	master	scenario.live_migrat	Liang Hao	2018-10-11	1	1	1	1
608898	Add response schema validation for volume transfer	master	bp/volume-response-s	zhufl	2018-10-11	1	1	1	1
605595	Add response schema validation for volume extensions	master	bp/volume-response-s	zhufl	2018-10-10	2	1	1	1
605985	Add response schema validation for volume types	master	bp/volume-response-s	zhufl	2018-10-10	1	1	1	1
606772	Add response schema validation for volume group snapshots	master	bp/volume-response-s	zhufl	2018-10-10	1	1	1	1
603339	Add response schema validation for volume quota set	master	bp/volume-response-s	zhufl	2018-10-10	1	1	1	1
605917	Add response schema validation for volume pools	master	bp/volume-response-s	zhufl	2018-10-09	1	1	1	1
606328	Add response schema validation for volume groups	master	bp/volume-response-s	zhufl	2018-10-09	1	1	1	1
606244	Add response schema validation for volume group types	master	bp/volume-response-s	zhufl	2018-10-08	1	1	1	1
603580	Add response schema validation for volume messages	master	bp/volume-response-s	zhufl	2018-10-08	1	1	1	1
605574	Add response schema validation for volume capabilities	master	bp/volume-response-s	zhufl	2018-10-08	1	1	1	1
589279	Immutable user source: test_llst_users	master	bug/1777847	Anna Pankiewicz	2018-10-05	1	1	1	1
587878	Immutable user source: test_credentials	master	bug/1777847	Anna Pankiewicz	2018-09-27	1	1	1	1
588393	Immutable user source: test_default_project_id	master	bug/1777847	Anna Pankiewicz	2018-09-27	1	1	1	1
588395	Immutable user source: test_users_negative	master	bug/1777847	Anna Pankiewicz	2018-09-27	1	1	1	1
607726	Use system creds for system operations	master	system-creds	Jamie Lennox	2018-09-25	1	1	1	1
384528	Adds protocol options for test_cross_tenant_traffic	master	bug/1363986	Claudiu Belu	2018-09-20	2	1	1	1
603295	Add response schema validation for volume hosts	master	bp/volume-response-s	zhufl	2018-09-20	1	1	1	1

↳ Subscribed projects

Gitea - Git with a cup of tea

- A painless self-hosted Git service
- Golang, MIT license
- <https://gitea.io>

The screenshot shows the Gitea interface for the `openstack / tempest` repository. At the top, there are tabs for `Code` (selected) and `Issues`. Below the tabs, it says "OpenStack Testing (Tempest) of an existing cloud". It displays 13059 commits across 1 branch. A specific commit by Matthew Treinish is highlighted, showing a diff for `log_req_body_kwarg` in the `doc` directory. The commit message is "Bump the openstack/docstheme extension to 1.20". The commit was made 14 hours ago. The commit history lists several other changes, including removing the Stress framework, setting up IPv6-only deployment verification, and fixing logging of request body credentials.

This screenshot shows the same Gitea interface for the `openstack / tempest` repository, but with the branch dropdown set to `tempest / tempest : managerpy`. It still shows 13059 commits across 1 branch. The commit history now includes a file named `manager.py` which contains Apache License 2.0 code. The code includes a header and a detailed explanation of the license terms, noting that the software is distributed under the license and can be modified or redistributed as long as the license is included.

Continuous Integration by Zuul - What's "Zuul"

- <https://zuul-ci.org/>
- Set a gate by automated testing - Stop Merging Broken Code
- CI/CD powered by Ansible
- Cross-Project Dependencies can be tested

ZUUL

Status Jobs Builds

Queue lengths: 0 events:0 management events:0 results.

change or project name Expand by default:

check [110]

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

Queue openstack/tripleo-heat-templates

- openstack/tripleo-heat-templates
612249.1
- openstack/tripleo-heat-templates
612316.1
- openstack/tripleo-heat-templates
612601.1
- openstack/tripleo-heat-templates
612602.1 0 min 3 hr 51 min

gate [15]

Changes that have been approved by core reviewers are enqueued in order in this pipeline, and if they pass tests, will be merged. For documentation on how gating with Zuul works, please see <https://zuul-ci.org/docs/zuul/user/gating.html>

Queue: tripleo

- openstack/tripleo-quickstart-extras
609550.3 15 min 2 hr 39 min
- openstack/tripleo-quickstart
612289.1 25 min 2 hr 5 min
- openstack/tripleo-heat-templates
611309.3 2 hr 20 min 46 min

post [0]

This pipeline runs jobs that operate after each change is merged. Queue items are identified by the abbreviated hash (git log --format=%h) of the merge commit.

promote [0]

This pipeline runs jobs that operate after each change is merged in order to promote artifacts generated in the gate pipeline.

pre-release [0]

When a commit is tagged with a pre-release tag, this pipeline runs jobs that publish archives and documentation.

release [0]

When a commit is tagged as a release, this pipeline runs jobs that publish archives and documentation.

periodic [0]

Jobs in this queue are triggered on a timer.

release-post [0]

This pipeline runs release-process-critical jobs that operate after specific changes are merged.

tag [0]

This pipeline runs jobs in response to any tag event.

periodic-stable [0]

Periodic checks of the stable branches

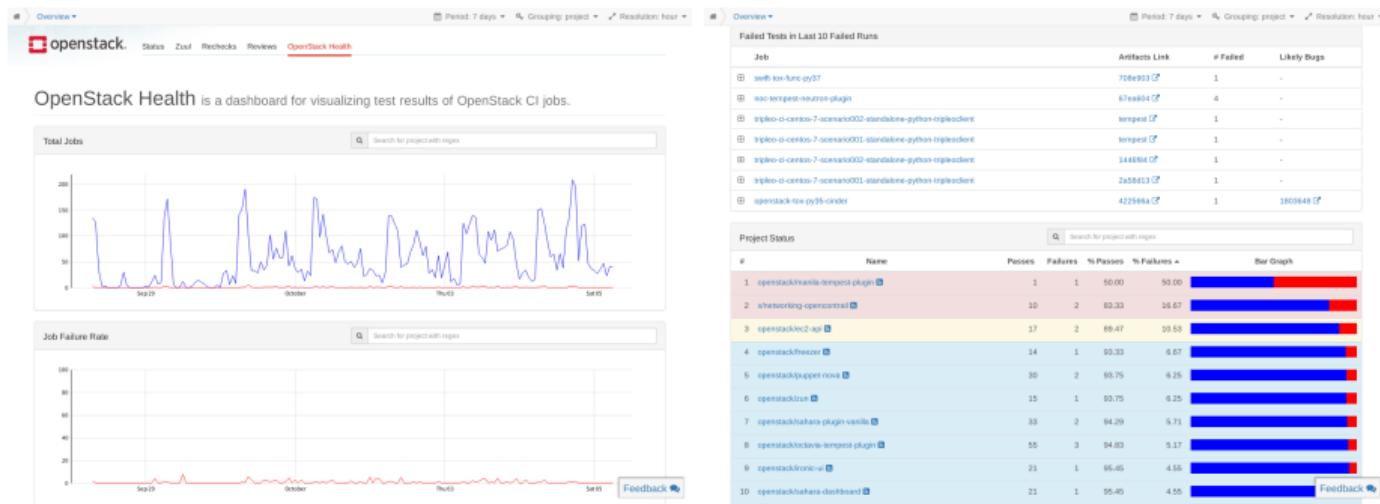
Documentation Tenant: openstack

refresh auto reload

The screenshot shows the Zuul CI interface with various pipelines listed on the left and their corresponding job queues on the right. The pipelines include check, gate, post, promote, pre-release, release, periodic, release-post, tag, and periodic-stable. Each pipeline has a summary box with the number of items, a list of jobs with their status (green circle), and a progress bar indicating completion time. The 'gate' pipeline is currently active with several jobs running. The 'check' pipeline has three pending jobs. Other pipelines like 'tag' and 'periodic' have zero items.

Gate Health check by OpenStack Health

- Story management tool developed by the OpenStack community
- Built from scratch, <https://opendev.org/openstack/openstack-health/>
- Architecture: Frontend: JS/Angular, Backend: Python/Flask
- 100% open source (Apache2.0)



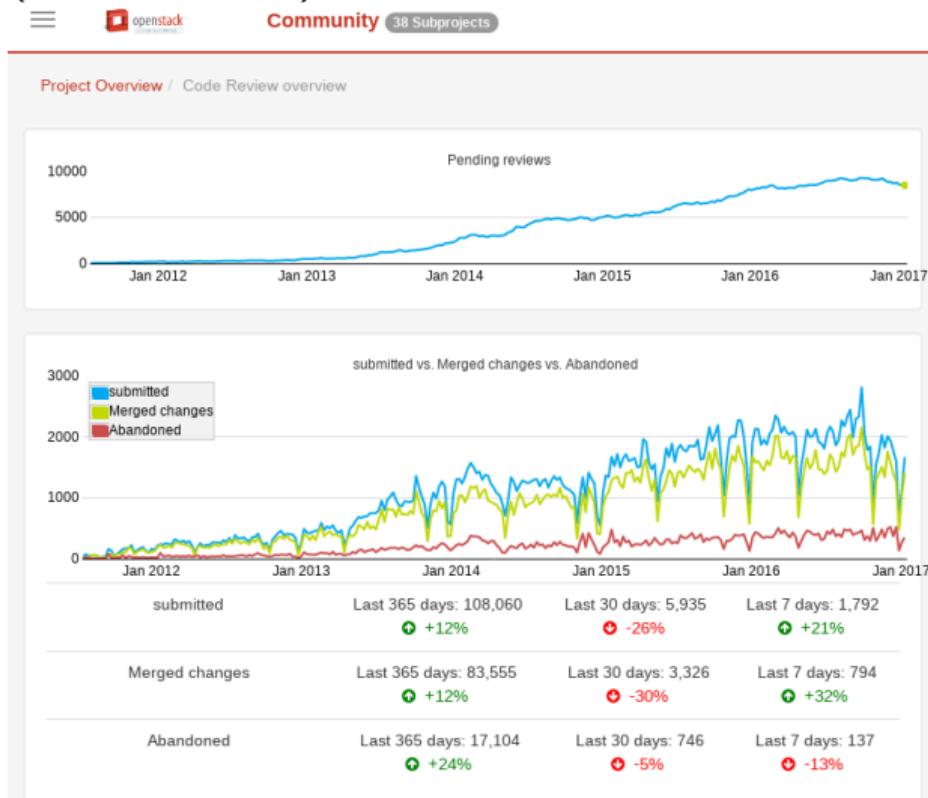
Inside Story

1. Very long time to get merged, why?
2. Unstable and Slow CI
3. Communication is important

1. Very long time to get merged, why?

- ▶ Project size \asymp Number of stakeholders
- ▶ Less communication (sending an email isn't a good idea)
- ▶ Less reviewers (next slide)
- ▶ Unstable and Slow CI

1. Less reviewers (cont. Why?)



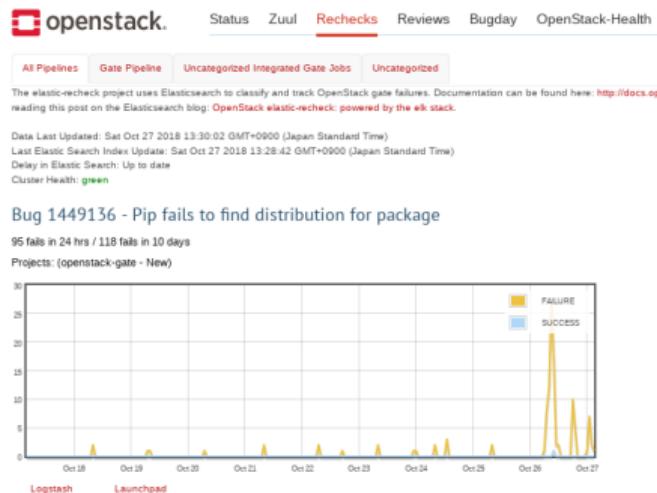
<http://activity.openstack.org/dash/browser/scr.html>

2. Unstable and Slow CI

- ▶ Easily rot if the code doesn't work in CI
- ▶ “CI” is not perfect
- ▶ Busy neighbors problem
- ▶ Rapid fixing is necessary - next slide

2. Elastic Recheck (cont. Unstable and Slow CI)

Correlate a bug to a signature in a log, and detect the bug automatically



A screenshot of a log entry titled "1737039.yaml 105B". Below the title is a toolbar with Raw, Permalink, Blame, History, and edit/delete icons. The log entry itself is a code snippet:

```
1 query: >-
2   message:"Kernel panic - not syncing" AND
3   message:"timer doesn't work" AND
4   tags:"console"
```

<http://status.openstack.org/elastic-recheck/>, <https://opendev.org/opendev/elastic-recheck/src/branch/master/queries/1737039.yaml>

3. Communication is important (English is hard)

- ▶ Discussion
- ▶ Find a job (e.g. difficult to get good salary as a programmer basically in Japan)
- ▶ Fun (Take care of yourself! :)

Masayuki Igawa @ [@masayukig](#)

#aftersoc #afterstack #OpenStackSummit
#openstack #suse



1:45 PM - 26 May 2018

12 Likes 

Comment Share Like 12 More

Kendall Nelson  Following

Kicking off the #OpenStackSummit early with #OpenStackUpstreamInstitute! 19 attendees and 14 mentors made it today :)
@tonybreeds @jungleboyj @ldikoVancsa @vkmc @kmarc @marton_kiss @spotzz_ @ghanshyammann @masayukig



6:59 AM - 20 May 2018

7 Retweets 31 Likes 

Comment Share Like 7 More

3. English as a second language (cont. Communication is important)

- ▶ We have a document:
<https://docs.openstack.org/doc-contrib-guide/non-native-english-speakers.html>
- ▶ Not only language but also culture (For example: Zensho shimasu (善処します))

How to participate Open Source Community

How to participate Open Source development

- ▶ Find a project which you are interested in
- ▶ Find online/offline mentor(s) and friends
- ▶ Understand culture of communities
- ▶ Not only code, using/testing, submit bugs/issues, documentation, translation, etc.
- ▶ As a study, hobby or job?

Conclusion

- ▶ Gerrit, StoryBoard, Zuul, OSS can be used for non-OSS product
- ▶ Communication is important, and English too
- ▶ Development OSS is fun! and tough sometimes. Why not participate in it?

Appendix

- ▶ Slides: [https://github.com/masayukig/oss-development-inside-story/
blob/master/oss-development-inside-story.pdf](https://github.com/masayukig/oss-development-inside-story/blob/master/oss-development-inside-story.pdf)
- ▶ Contact info: masayukig on [Freenode](#), [GitHub](#), [Twitter](#), [LinkedIn](#)
- ▶ StoryBoad:
<https://docs.openstack.org/infra/system-config/storyboard.html>
- ▶ Gerrit: <https://www.gerritcodereview.com/>
- ▶ Zuul: <https://zuul-ci.org/>
- ▶ Non-native English speakers in Open Source communities:
<http://bit.ly/esl-yvr>