

How to Participate Open Source development

- Open Source development tooling and community in the upstream -

Masayuki Igawa: masayuki@igawa.io

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>

This work is licensed under a Creative Commons Attribution 4.0 International License



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

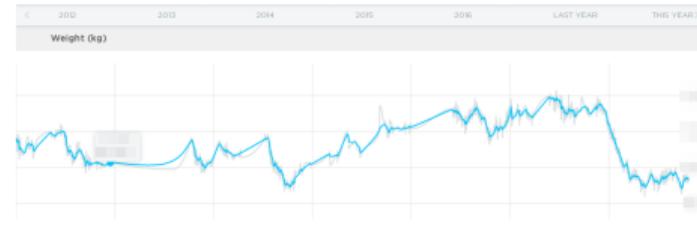
These slides are my own opinion

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

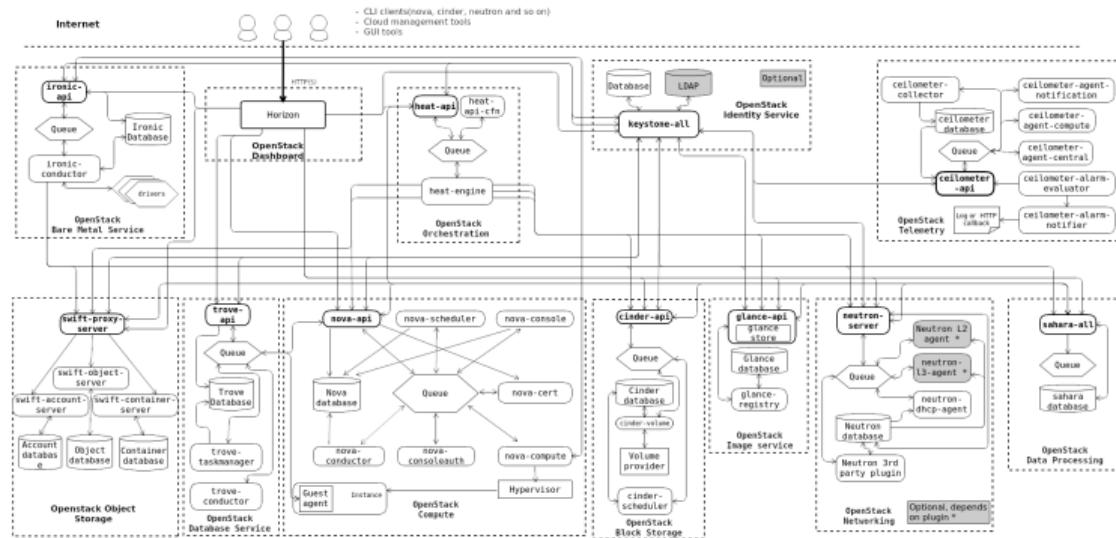
- ▶ Individual (so many, you can find a lot on github)
- ▶ One company (openSUSE, Ansible, Elastic Search, ...)
- ▶ Foundation (OpenStack, Kubernetes, Linux kernel, ...)

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

OpenStack community as an example

What is the “OpenStack”?

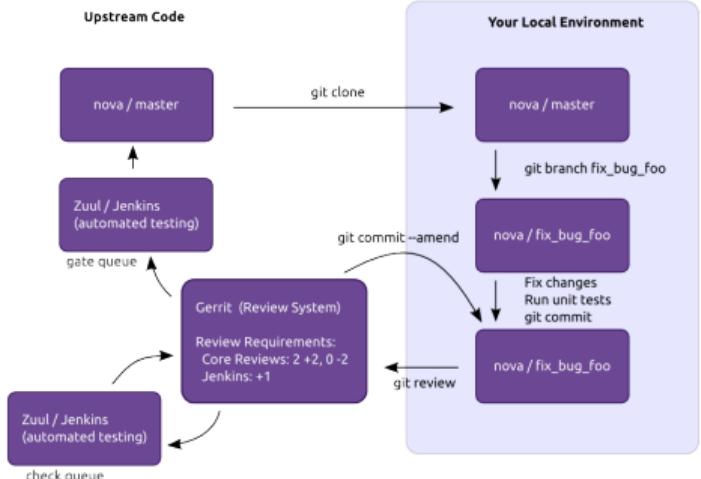
- Written in Python, Open Source Cloud Operation System: Apache License 2.0
- One of the top three active OSS communities
- There are a lot of ‘OpenStack’ projects: [63 projects\(2019-10-05\)](https://www.openstack.org/user-stories/)
- Released every 6 month: Latest version is called ‘Train’
- Users: 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/>

Welcome to freenode — supporting free and open source communities since 1998

Chat Register a group Knowledge Base

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

most from Handshake on 2018-10-01

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

Other exhibitors at this years event will be the returning main sponsor, [Private Internet Access](#), as well as the free Software Foundation, OpenSUSE, Mintezet, Linux journal and the Handshake Project.

Handshake is a new decentralized alternative DNS root, and for a short time before

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 on your subscription. To visit the general information page for an unadvertised list, open a URL similar to this one, but with a ? and the list name appended.

For 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 mailadmin@lists.openstack.org.

List	Description
lists.openstack.org	[no description available]
lists.openstack-admin	[no description available]
lists.openstack-announce	The OpenStack Community team is the main contact point for anybody running a local OpenStack Group. [no description available]
lists.openstack-candidate	The Enterprise working group [no description available]
lists.openstack-communications	The Enterprise working group [no description available]
lists.openstack-dev	General discussion list for activities of the OpenStack Foundation
lists.openstack-board	OpenStack Foundation Board of Directors
lists.openstack-testing	working group to set the openstack foundation testing standards for hardware test drivers
lists.openstack-translations	Translating the OpenStack project
lists.openstack-meeting	Meeting Working Group Mailing List
lists.openstack-legal	Discussions on legal matters related to the project
lists.openstack-marketing	The OpenStack Marketing list is the means to facilitate discussion and best practice sharing among marketers and event organizers in the OpenStack community
lists.openstack-general	The OpenStack General mailing list
lists.openstack-advisance	Announcements from the OpenStack & Security advisories [no description available]
lists.openstack-operators	The operators mailing list
lists.openstack-content	The team responsible to write content for openstack.org domain
lists.openstack-de	List for German speaking OpenStack users

Log In / Register

Welcome to OpenStack

Project group information

Maintainers: [OpenStack Administrators](#) Not yet selected

Bug tracker: None specified

Download ZIP metadata

FAQs for OpenStack

All Data

Projects

- OpenStack Control plugin
- Ansible
- Ariane
- Ansible
- Ansible Ruby Client
- Autoscale
- Badger
- Barbican
- Baremetal
- Baremetal API
- Baremetal
- Barney
- Calister
- Cloudmeter
- Cloudwatch

Announcements

Getting started requests and bug fixes have been moved to Storyboard on 2018-01-23 <https://Storyboard.openstack.org>

Storyboard is a project dedicated to tracking bugs and feature requests for OpenStack.

OpenStack project is migrating to Storyboard on 2018-09-06 <https://Storyboard.openstack.org>

OpenStack project is migrating to Storyboard on 2018-09-06 <https://Storyboard.openstack.org>

As part of an OpenStack migration, the OpenStack project has integrated legacy repositories to Storyboard.

Trunk 3.0.0 released! (Details) on 2018-09-02

Trunk 3.0.0 is a project dedicated to tracking bugs and feature requests across Horizon in ...

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

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 shows the Gerrit Code Review interface. At the top, there are two navigation bars: one for Gerrit Code Review with links for About, News, Issues, Code, Docs, Feedback, and Search; and another for openstack with links for Projects, Documentation, Open, Merged, and Abandoned. Below these are two search bars: one for 'status:open' and another for 'Changes'.

The main content area has a title 'Gerrit Code Review' and a dashboard with four cards:

- Discuss code**: An icon of a speech bubble, with text: "Boost your team's code flu by talking about specifics." and a "Learn More" button.
- Serve GR**: An icon of a person, with text: "As an integrated experience within the larger code review flow." and a "Learn More" button.
- Manage workflows**: An icon of a lock, with text: "With deeply integrated and delegatable access controls." and a "Learn More" button.
- Download**: An icon of a download arrow, with text: "Our latest release is: 2.15.6" and a "Download" button.

Below the dashboard, there is a section titled "Discuss code" which contains a code diff viewer. The diff shows a merge conflict between two branches. The code is related to "gerrit.patchset.upgrade" and "gerrit.patchset.upgrade.ChecksumVerifier". The conflict is located in the "private boolean verifyChecksums" method. The status bar at the bottom of the code viewer indicates "Merge conflict" and "Patch ID: 2000000000000000000000000000000000000000".

On the right side of the screen, there is a table titled "Search for status:open" showing a list of open pull requests. The columns include Subject, Status, Owner, Project, Branch, Updated, Size, and CR/V/W. The table lists several entries, such as "Add new policy action vinfra_auto-healing" by BhagyaShwale, "Temporarily remove ha guide from index" by Andreas Jaeger, and "Add native OVSDB implementation for OpenStack" by Rodolfo Alonso Hernandez.

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, the repository name is displayed along with the description: "OpenStack Testing (Tempest) of an existing cloud". A search bar and a file browser are also present. The main area shows a list of commits from Matthew Treinish, with the most recent commit being "Add release note for log_req_body_kwarg" (14 hours ago). The commit details show a diff of changes in the `tempest` directory.

This screenshot shows the same Gitea interface for the `openstack / tempest` repository, but with a specific branch selected: `tempest / tempest : manager.py`. The commit list is now filtered to show only commits related to the `manager.py` file. The first commit is "manager 2.6KB" (1 year ago), which contains the Apache License 2.0 header. Subsequent commits are listed below it, all related to the `manager.py` file.

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]

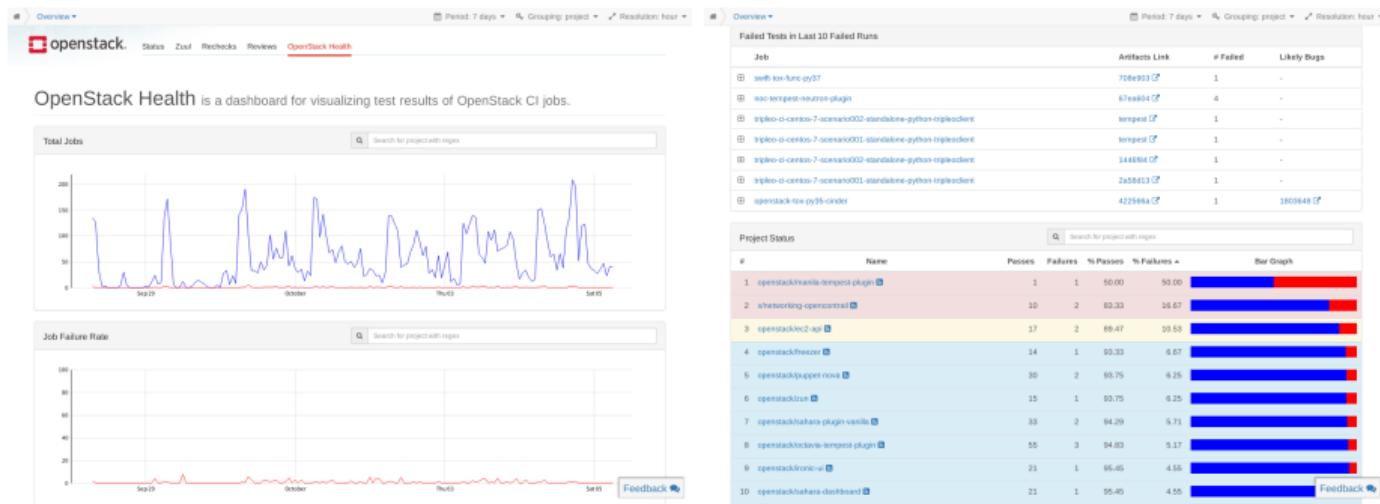
Periodic checks of the stable branches

Documentation Tenant: openstack

refresh auto reload

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)



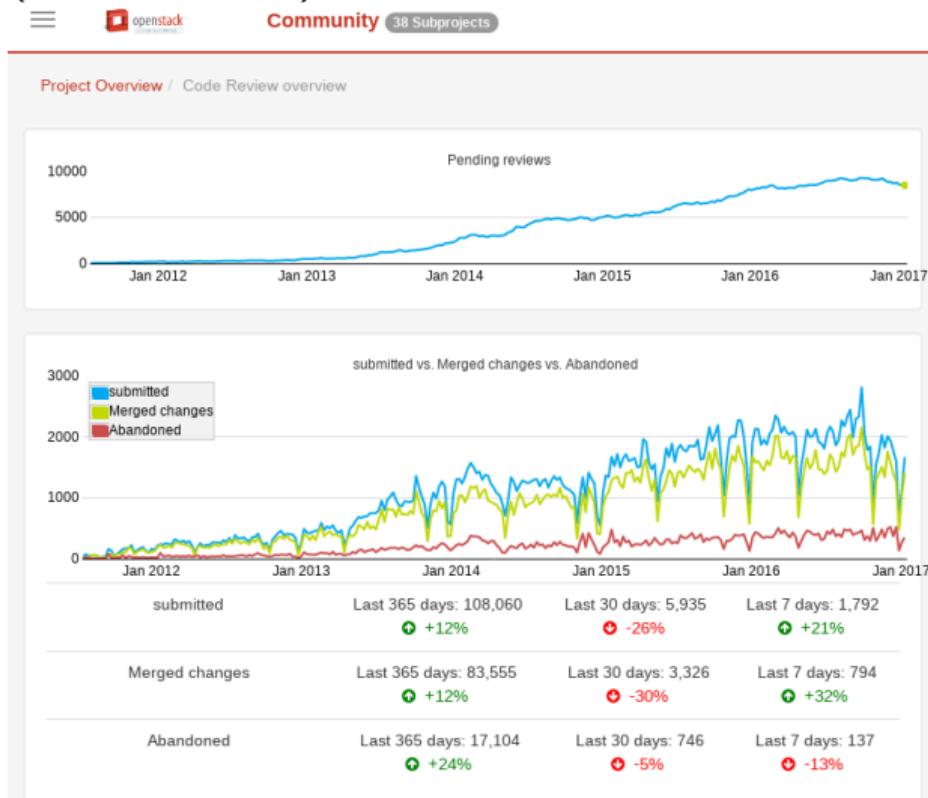
Inside Story

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 \div 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?)



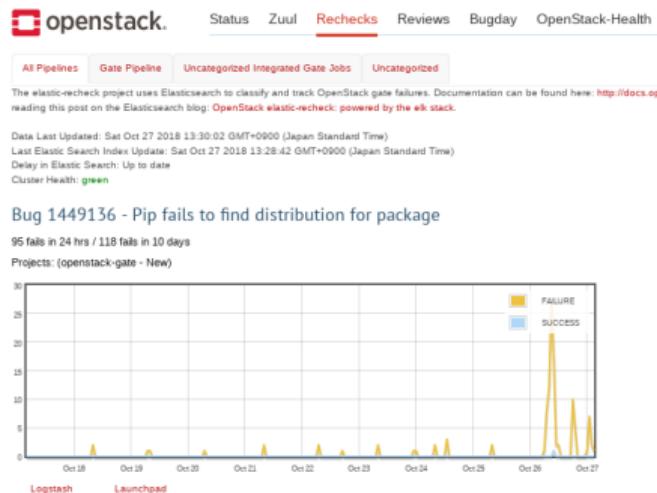
<http://activity.openstack.org/dash/browser/scr.html>

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

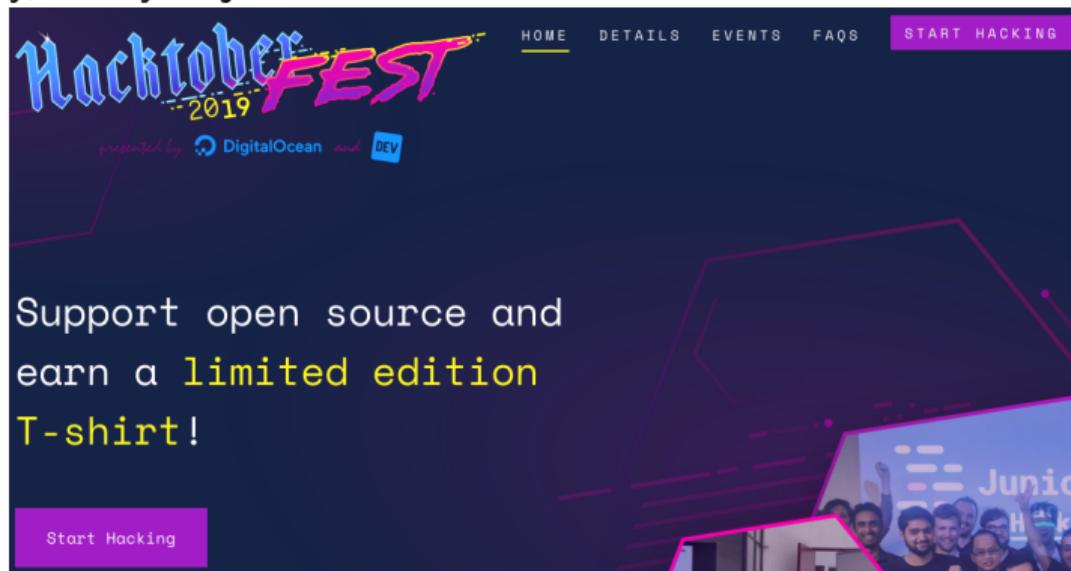
3. English as a second language (cont. Communication is important)

- ▶ 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 projects 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?



<https://hacktoberfest.digitalocean.com/>

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>