

How to Participate Open Source development

- Open Source development tooling and community in the upstream -

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Freenode GitHub Twitter LinkedIn

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@openSUSE.Asia Summit 2019

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

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Agenda

1. Who am I?
2. Today's Goal
3. What is Open Source?
4. OpenStack as an example
5. True Stories
6. How to Participate
7. Summary

DISCLAIMER

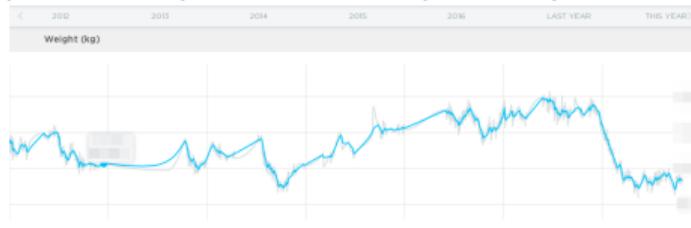
These slides are my own opinion

Who am I?

- ▶ 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 QE(Quality Engineering) 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
- ▶ To understand essence of OSS development, and it's fun

Open Source Communities?

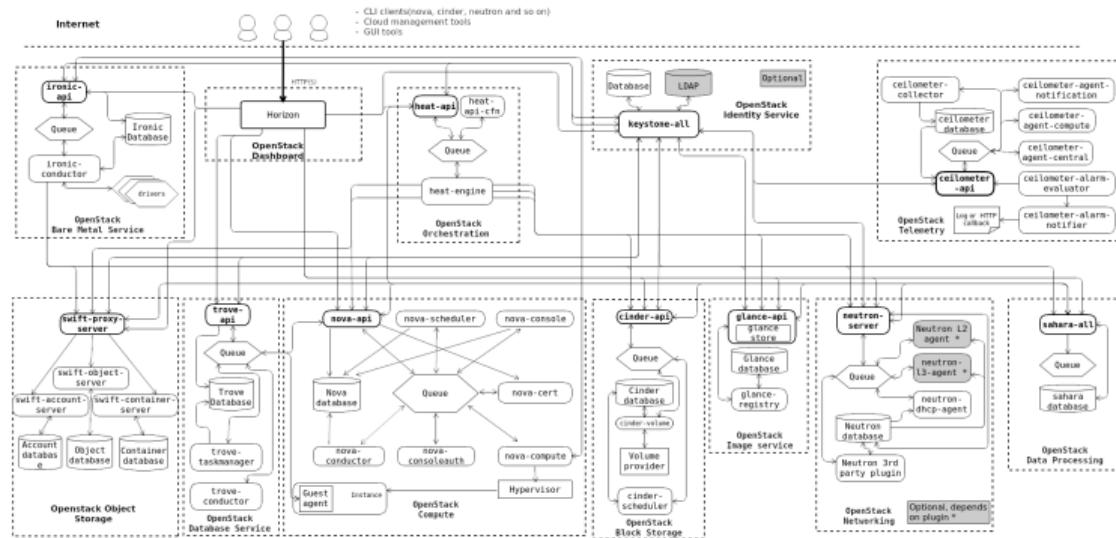
Led by

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

There are a lot differences among OSS projects. Let's take a look at the OpenStack community as an example.

What is the “OpenStack”?

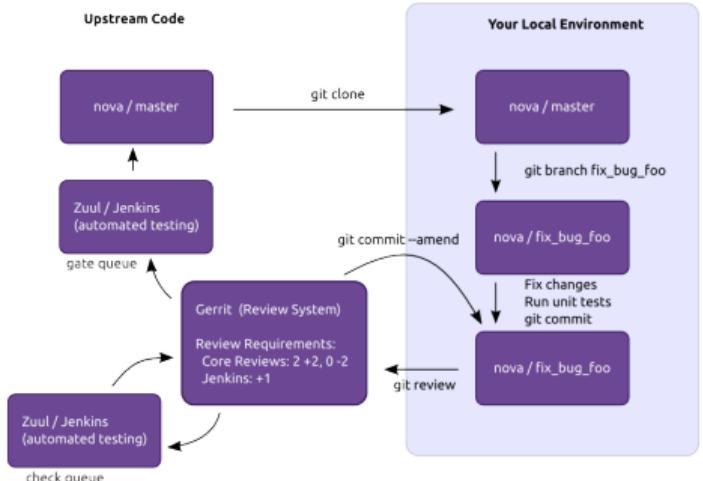
- Written in Python, Open Source Cloud Operation System: Apache License 2.0
- One of the top three active OSS communities
- There are a lot of ‘OpenStack’ projects: [63 projects\(2019-10-05\)](https://www.openstack.org/user-stories/)
- Released every 6 month: Latest version is called ‘Queens’
- Users: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

The screenshot shows the freenode homepage. At the top, there's a navigation bar with links for "Search", "Log In", and "Join". Below the bar, the word "freenode" is written in a large, green, lowercase font. To the right of the logo is a search bar with the placeholder "Search using Google". Further right is a magnifying glass icon and the "PIA" logo. The main content area has a white background with a dark grey header. The header contains the text "Welcome to freenode — supporting free and open source communities since 1998". Below the header are three dark grey rectangular buttons with rounded corners. From left to right, they contain: a speech bubble icon with the word "Chat", a user group icon with the text "Register a group", and a question mark icon with the text "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 Brasseur, Chris Lamb and Bradley Kuhn. Freenode [#live](#) 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, Minetest, Linux Journal and the Hailstone Project.

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

lists.openstack.org Mailing Lists	
Welcome!	Believe in 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 per your subscription. To visit the general information page for an unauthenticated 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 support@lists.openstack.org .	
List	Description
Admins-req.org	[no description available]
API-registry-admin	[no description available]
Ceph-devel	[no description available]
Eddo-consumers	[no description available]
Elections-testing	[no description available]
Enterprise-req	The Enterprise work group
Foundation-devel	General discussion for all activities of the OpenStack Foundation
Foundation-board	OpenStack Foundation Board of Directors
Foundation-testing	working group to set the openstack foundation testing standards for humans not drivers
Icinga-req	Icinga Working Group Mailing List
Ingal-focus	Discussions on Ingalization related to the project
Marketing	The OpenStack Marketing list is meant to facilitate discussion and best practice sharing among marketers and other organizers in the OpenStack community.
Openstack-announce	Key announcements about OpenStack & Security advisories
Openstack-committers	[no description available]
Openstack-codest	The team responsible to write content for openstack.org domain
Openstack-dev	List for General speaking OpenStack users



OpenStack

OpenStack is a cloud computing platform that provides an open-source infrastructure as a service (IaaS) solution. It is designed to be deployed on-premises or in the cloud, and can be used to build private clouds, public clouds, or hybrid clouds. OpenStack is built on top of a set of open-source components, including Nova, Swift, Cinder, Neutron, and Horizon, which are managed by a central API layer.

The OpenStack Open Source Cloud Mission is to produce the ubiquitous Open Source Cloud Computing platform that will meet the needs of public and private clouds regardless of size, by being simple to implement and massively scalable.

Website: <http://www.openstack.org>
Wiki: <http://wiki.openstack.org>
Mailing List: openstack@lists.launchpad.net - see <http://lists.openstack.org/cgi-bin/mailman/listinfo/openstack@lists.launchpad.net>
IRC: #openstack on freenode.net
Documentation: <http://docs.openstack.org>

[Report a bug](#) [Ask a question](#) [Help translate](#) [Register & Migrate](#)

Get Involved

[Report a bug](#) [Ask a question](#) [Help translate](#) [Register & Migrate](#)

Announcements

OpenStack 10.0 "Mitaka" is released and bug triage has been moved to Storybook on 2016-04-06
<https://storybook.openstack.org/#/#/index>

This edition is built on 2016-04-06
A few days ago the tiny Team released Tis to the gentle masses. **OpenStack 10.0 "Mitaka"** is now available for download. **Octavia project is migrating to Storybook on 2017-04-06**
As part of an OpenStack 10.0 release, Octavia has been migrated from Launchpad to Storybook. **Trunk 10.0.0 released(Danilo)**
An [API](#) and [SDK](#) have been released for scheduling automation across Neutron 1.19.

Project group information

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

Bug tracker:
None specified

[Download EPEL metapackages](#)

FAQs for OpenStack

[All FAQs](#)

How to use one cloud glance object storage
Answers to the top project images for hierarchical multi-tiered projects

[Search](#)

Project management by StoryBoard - What's "StoryBoard"

- ▶ Story management tool developed by the OpenStack community
- ▶ Built from scratch
- ▶ 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 (selected), and Stories. The main area shows a list of stories for the project 'openstack-infra/storyboard'. The list includes:

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

Gerrit review system - What's "Gerrit"

- Android development community is using it
- Java, 100% open source
- 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 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 the 'openstack' project with tabs for Open, Merged, and Abandoned, and a search bar for 'status:open'.

The main area features a dashboard with four cards:

- Discuss code**: An icon of a speech bubble, with text: "and 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 is a code review interface showing a diff between two versions of a Java file, `git/policy-action/v3/src/main/java/com/google/gerrit/server/patchset/ChangeAction.java`. The diff highlights changes in the `private void validate(ChangeAction changeAction)` method, including the addition of a new policy action `v3/validate`.

To the right is a detailed view of a pull request list for the 'openstack' project, showing the following table:

Subject	Status	Owner	Project	Branch	Updated	Size	CR	V	W
[PATCH] Add new policy action v3/validate	Open	Bhagatbir Shwale	openstack/tacker	master (399910)	3:25 PM	3.25 KB	-1	+1	-1
[PATCH] Temporarily remove ha guide from index	Merged	Andreas Jaeger	openstack/openstack-manuals	master (379956)	3:23 PM	3.23 KB	-1	-1	-1
[WIP] Add native OVSDB implementation for OpenDaylight	Merged	Rodolfo Alonso Hernandez	openstack/nexentia	master (379956)	3:25 PM	3.25 KB	-1	-1	-1
Node Exporter: allows to set collectors enable/disable	Merged	Jawon Choi	openstack/openstack-helium	master (v3.0_collector)	3:25 PM	3.25 KB	-1	-1	-1
Add charts for Elastic Beats	Merged	Steve Wilkerson	openstack/openstack-helium	master (add_elastic_beats)	3:25 PM	3.25 KB	-1	-1	-1
Check pep8 without ignoring D400	Merged	Dan Cong Tien	openstack/callisto	master	3:24 PM	3.24 KB	-1	-1	-1
Further refine tuning changes for Ceph	Merged	Matthew Hepler	openstack/openstack-helium	master (Ceph-TUNING)	3:24 PM	3.24 KB	-1	-1	-1
Add jobs table for bp add-myself-support-for-freezer	Merged	georgsch2	openstack/freezer-api	master (bp/add-myself-support-for-freezer)	3:24 PM	3.24 KB	-1	-1	-1
Add session api for bp add-myself-support-for-freezer	Merged	gecang	openstack/freezer-api	master (bp/add-myself-support-for-freezer)	3:24 PM	3.24 KB	-1	-1	-1
Add session table for bp add-myself-support-for-freezer	Merged	gecang	openstack/freezer-api	master (bp/add-myself-support-for-freezer)	3:24 PM	3.24 KB	-1	-1	-1
[OPENSTACK] Create Araneus manifest file to deploy Ranges	Merged	Chi Lo	openstack/openstack-helium	master (range_manifest)	3:24 PM	3.24 KB	-1	-1	-1
Release for Stein milestone for tripleo	Merged	Juan Antonio Osorio Robles	openstack/release	master (tripleo/release)	3:23 PM	3.23 KB	-1	-1	-1
Implement Ceph Client helm test	Merged	Reis Makadia	openstack/openstack-helium	master (599915)	3:23 PM	3.23 KB	-1	-1	-1
ceph: make log directory configurable	Merged	chirastubabreddy.muthavarapu	openstack/openstack-helium	master	3:23 PM	3.23 KB	-1	-1	-1
ceph: make log directory configurable	Merged	chirastubabreddy.muthavarapu	openstack/openstack-helium	master	3:23 PM	3.23 KB	-1	-1	-1
starting@headless:~\$ cronjobs	Merged	Dmitri Kuznetsov	openstack/tacker	master	3:23 PM	3.23 KB	-1	-1	-1
openstack/tacker: add cronjob module	Merged	Mike Chee	openstack/tacker	master (trivial)	3:23 PM	3.23 KB	-1	-1	-1
Add additional fix for ansible-role-openstack-operations for stable	Merged	Juan Antonio Osorio Robles	openstack/release	master (tripleo/release)	3:22 PM	3.22 KB	-1	-1	-1
Add zappa status upgrade check command	Merged	Rajat Dhurmsa	openstack/zappa	master (upgrade-checkers)	3:22 PM	3.22 KB	-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

Continuous Integration by Zuul - What's "Zuul"

- Set a gate by automated testing - only properly working code can be merged
- CI/CD powered by Ansible
- Dependencies across different projects can be tested

The screenshot shows the Zuul CI interface with several project queues:

- Queue: openstack/tripleo-heat-templates**
 - openstack/tripleo-heat-templates 612249.1 (Status: Pending, 0 min)
 - openstack/tripleo-heat-templates 612316.1 (Status: Pending, 0 min)
 - openstack/tripleo-heat-templates 612601.1 (Status: Pending, 0 min)
 - openstack/tripleo-heat-templates 612602.1 (Status: Pending, 3 hr 51 min)
- Queue: openstack/networking-own**
 - openstack/networking-own 608252.4 (Status: Pending, 0 min)
- Queue: openstack/mistral**
 - openstack/mistral 610461.12 (Status: Pending, 0 min)
- gate [16]**

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>

 - openstack/tripleo-quickstart-extras 609550.3 (Status: Pending, 15 min)
 - openstack/tripleo-quickstart 612289.1 (Status: Pending, 25 min)
 - openstack/tripleo-heat-templates 611309.3 (Status: Pending, 2 hr 20 min)
- Queue: integrated**
 - openstack/nova 612230.1 (Status: Pending, 1 hr 5 min)
 - openstack/neutron 610191.2 (Status: Pending, 1 hr 5 min)
 - openstack/neutron 610737.2 (Status: Pending, 1 hr 19 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=hex) 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.

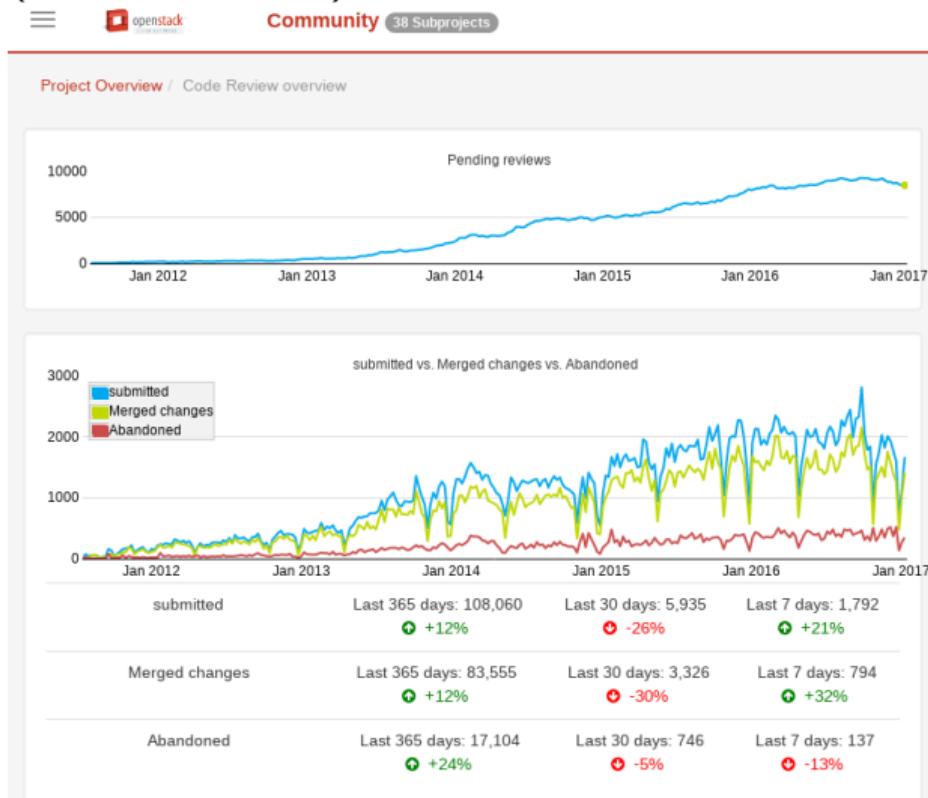
Inside Story

1. It takes a long time to get merged. Reason?
2. Unstable CI
3. Communication is important

1. It takes a long time to get merged. Reason?

- ▶ 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. Reason)



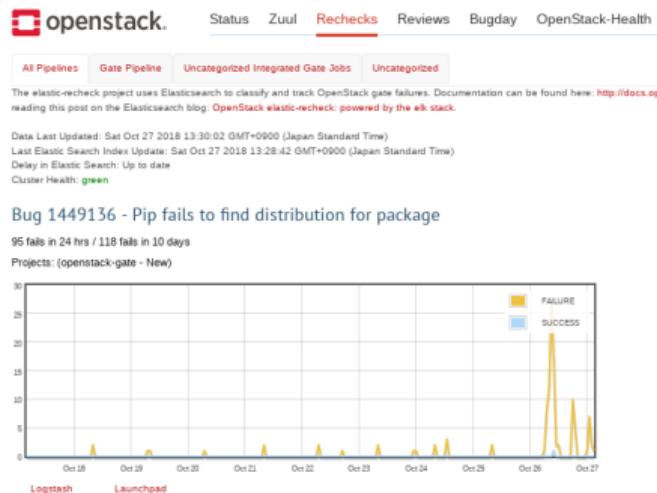
<http://activity.openstack.org/dash/browser/scr.html>

2. Unstable CI

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

2. Elastic Recheck (cont. Unstable CI)

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



The screenshot shows a code editor displaying a YAML file named 1737039.yaml. The file contains a single query definition:

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

Below the code editor are buttons for Raw, Permalink, Blame, History, and edit/delete icons.

<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 [@knelson92](#) 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 development

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

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>