

# 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

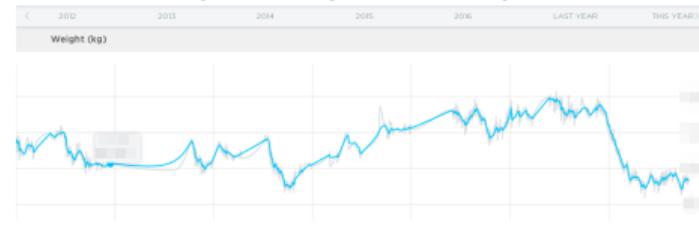
These slides are my own opinion

# 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](http://stackalytics.com/?user_id=igawa), [github.com/masayukig](https://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

## Are you a User/Developer/Operator?

- ▶ An Open Source Software isn't generate by automatically
- ▶ Someone wrote, tested, developed
- ▶ If you're just a user, why not join development?

# Today's Goal

- ▶ Development ways/tools in OpenStack/OSS communities
- ▶ Challenges in OSS development, but 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, ...)



openstack®

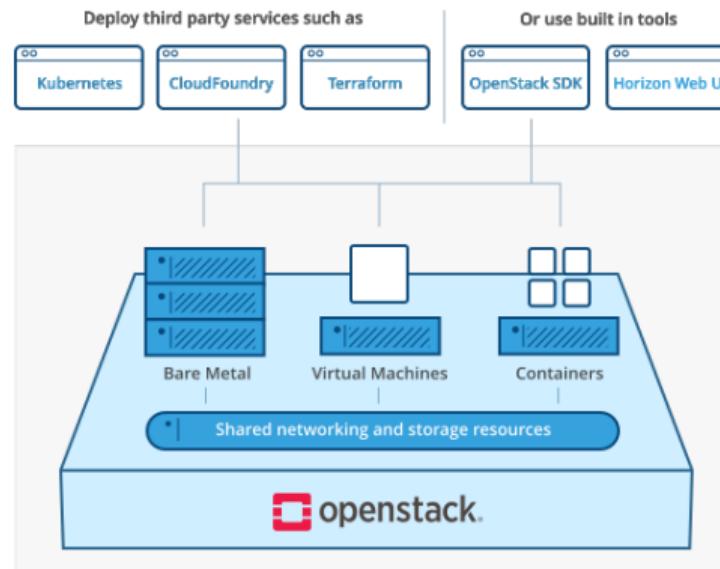


Let's take a look at the OpenStack community as an example.

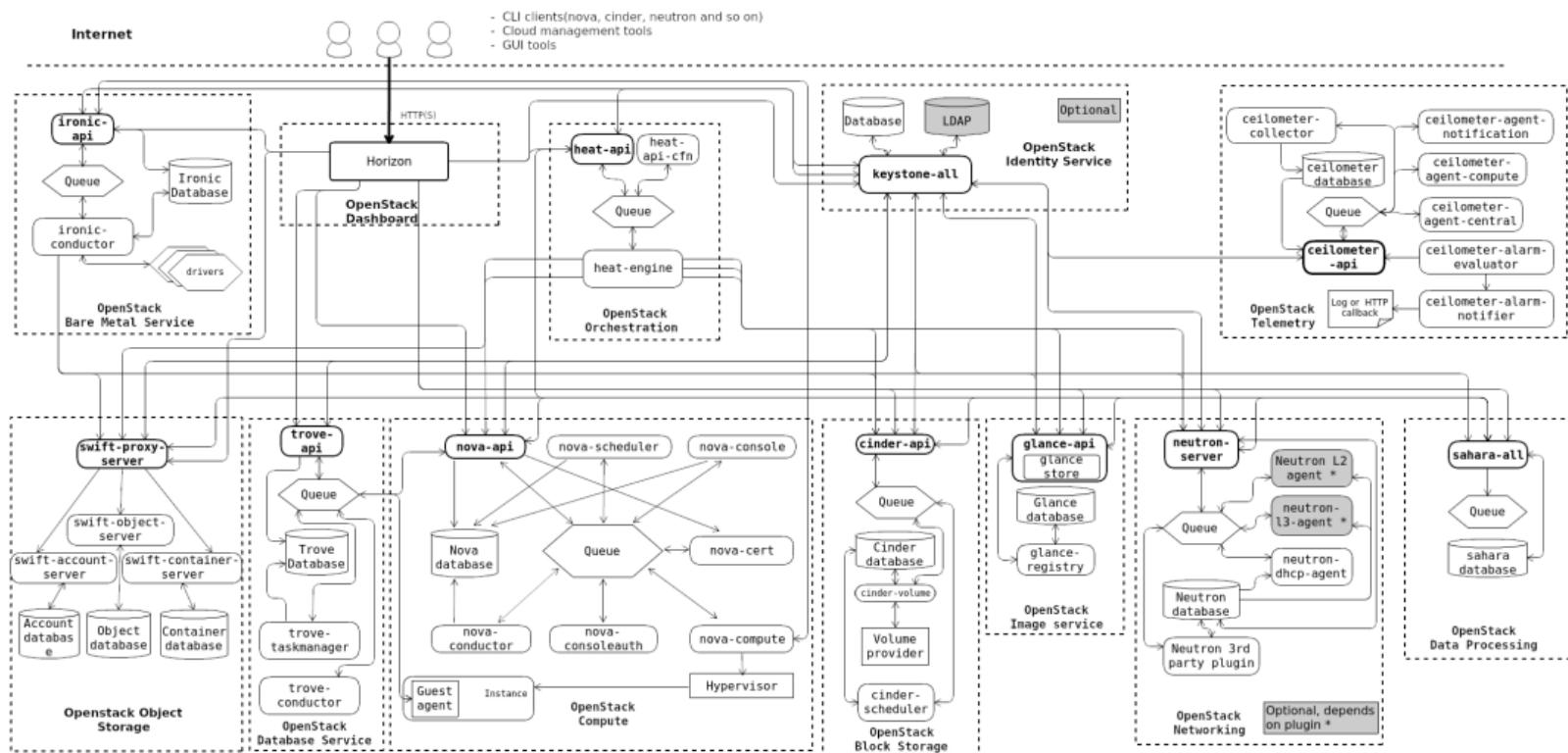
# OpenStack community as an example

# 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/>



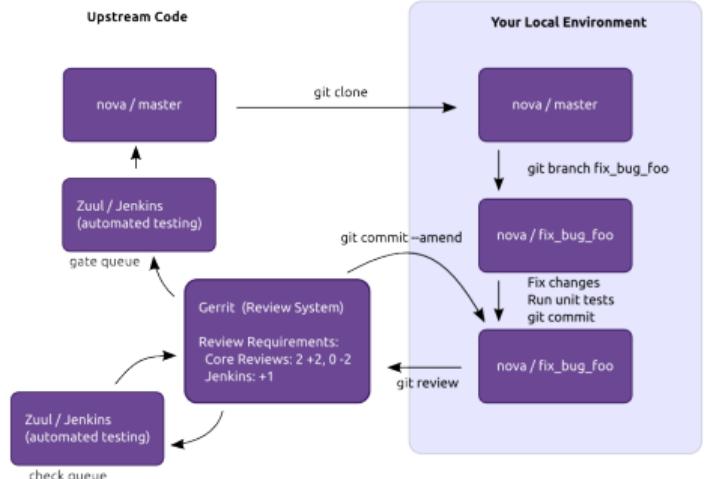
# Actual (What is the “OpenStack”?)



# 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 image shows the top navigation bar of the freenode website. It features the 'freenode' logo in green on the left, a search bar with the placeholder 'Search using Google' and a magnifying glass icon in the center, and the PIA logo on the right.

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, Mintest, Linux

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

lists.openstack.org Mailing Lists	
Welcome!	<a href="#">lists.openstack.org</a>
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.	
List administration, you can visit the <a href="#">list admin overview page</a> to find the management interface for your list.	
If you are having trouble using the lists, please contact <a href="mailto:mail-admin@lists.openstack.org">mail-admin@lists.openstack.org</a> .	
List	Description
<a href="#">Admin-test.org</a>	[no description available]
<a href="#">App-catalog-admin</a>	[no description available]
<a href="#">Ceph</a>	The Ceph mailing list is the main contact point for anybody managing a local OpenStack Group.
<a href="#">Icehouse-testing</a>	[no description available]
<a href="#">Ironic-testing</a>	[no description available]
<a href="#">Enterprise.org</a>	The Enterprise working group
<a href="#">Headquarters</a>	General discussion list for activities of the OpenStack Foundation
<a href="#">Headquarters-board</a>	OpenStack Foundation Board of Directors
<a href="#">Headquarters-testing</a>	working group to set the openstack Foundation testing standards for Ironic and drivers
<a href="#">Icinga-req</a>	Interim Working Group Mailing List
<a href="#">Inqlid-focus</a>	Discussions on legislative matters related to the project
<a href="#">Marketing</a>	The OpenStack Marketing list is the means to facilitate discussion and best practice sharing among marketers and other engineers in the OpenStack community.
<a href="#">Neutron</a>	Neutron development mailing list
<a href="#">Openstack-announce</a>	Key announcements about OpenStack & Security advisories
<a href="#">Openstack-announce-german</a>	[no description available]
<a href="#">Openstack-casted</a>	The team responsible to write content for openstack.org domain
<a href="#">openstack-de</a>	List for German speaking OpenStack users

# 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 (selected), and Stories. The main area has a light background. At the top, there's a navigation bar with a logo, a 'Create New...' button, 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 story ID, title, status, and actions. The 'Active' tab is selected, showing 92 stories. Some stories are in red text, while others are in black. The first few stories listed are:

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

# 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: "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, 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 "PatchBuilder.java" and "PatchBuilderTest.java". The conflict is in the "private void validateMergeConflict(String branch, String targetBranch)" method. The status bar at the bottom of the code viewer indicates "Status: MERGED" and "Merge: 100%".

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 Rossi	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. The top navigation bar includes links for Home, Explore, and Help. Below the repository name, there are tabs for Code and Issues. The main area displays a list of 13059 commits. A specific commit by Matthew Treinish is highlighted, showing a diff for the file `log_req_body_kwarg.go`. The commit message is "Bump the openstack/docstheme extension to 1.20". The commit was made 14 hours ago. The commit list also includes other changes such as 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 a different commit selected. The commit by Matthew Treinish has been clicked, and its details are shown in the right-hand panel. The commit message is "Bump the openstack/docstheme extension to 1.20". The commit was made 14 hours ago. The commit list below shows other recent changes like removing the Stress framework and fixing logging of request body credentials.

# 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 Documentation Tenant openstack

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

Queue openstack/networking-own

openstack/networking-own  
608252.4 0 min 3 hr 50 min

Queue openstack/mistral

openstack/mistral  
610461.12 0 min 2 hr 54 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]

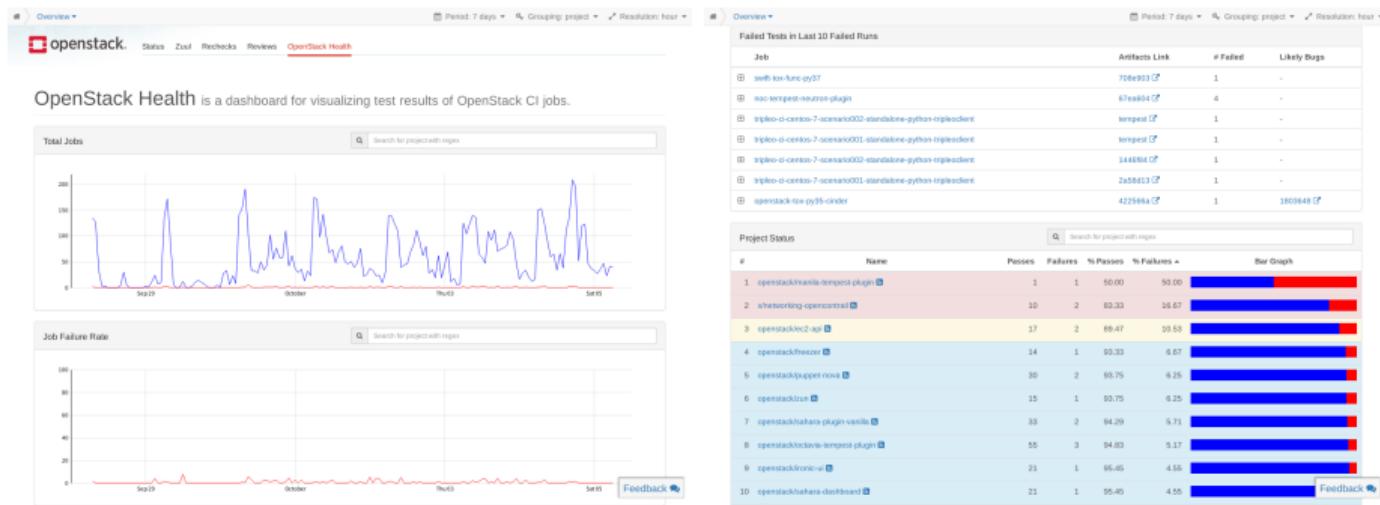
This pipeline runs jobs in response to any tag event.

periodic-stable [0]

Periodic checks of the stable branches

# Gate Health check by OpenStack Health

- A dashboard for visualizing test results of OpenStack CI jobs
- Built from scratch, <https://opendev.org/openstack/openstack-health/>
- Architecture: Frontend: JS/Angular, Backend: Python/Flask
- 100% open source (Apache2.0)



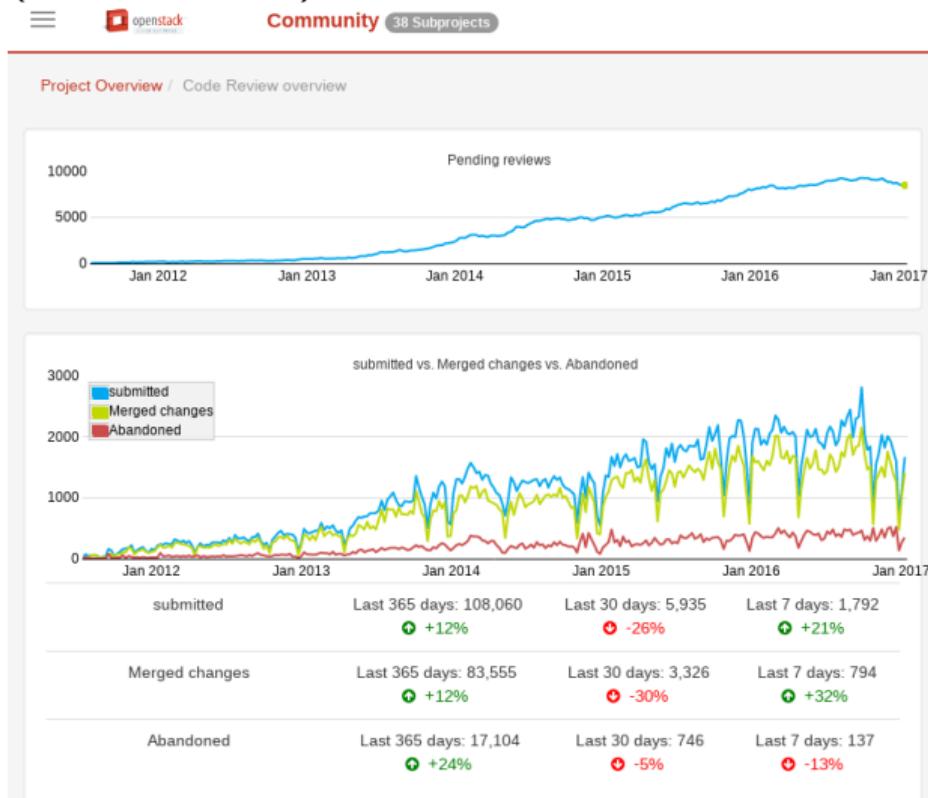
## Inside Story

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
- ▶ Less reviewers (next slide)
- ▶ Unstable and Slow CI

# 1. Less reviewers (cont. Why?)



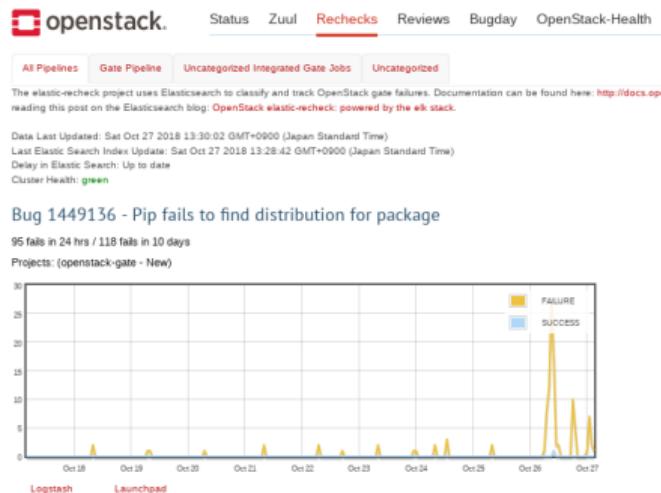
<http://activity.openstack.org/dash/browser/scr.html>

## 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 contains the following code:

```
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))

The screenshot shows the OpenStack Documentation website. At the top, there is a navigation bar with links for Software, Users, Community, Marketplace, Events, Learn, Docs, Join, and Log In. Below the navigation bar, there is a search bar and a logo for 'openstack.'. On the left side, there is a sidebar with a 'Documentation Contributor Guide' section containing links to Quickstart, Documentation team structure, 2017/2018 documentation team vis..., Non-native English speakers (which is currently selected), New contributors with En..., Working with non-native E..., Blueprints and specifications, Project guide setup, Landing pages on docs.openstack..., Governance tag documentation gui..., OpenStack API documentation, Documentation bugs, Writing documentation, Writing style, OpenStack user experience and use..., RST conventions, JSON conventions, and Diagram guidelines.

The main content area has a title 'Non-native English speakers'. Below the title, it says 'THIS PAGE LAST UPDATED: 2019-09-30 11:35:45'. The main text discusses communication challenges for non-native English speakers in the OpenStack community. A 'Note' box contains a note about a talk at linux.conf.au 2017. Below the main text, there is a section titled 'New contributors with English as a second language' which provides tips for non-native English speakers.

**Non-native English speakers**

THIS PAGE LAST UPDATED: 2019-09-30 11:35:45

OpenStack projects communicate in English, and our documentation is written in US English. However, many documentation contributors have English as a second (or third, or fourth) language. This poses many challenges for non-native English speakers, but there are some things that native English speakers can do to make it easier to include non-native speakers in our community. This chapter contains some suggestions for both native and non-native English speakers to help make our community more inclusive and welcoming for all people.

**Note**

This chapter was written based on the wonderful talk given by Masayuki Igawa, Dong Ma, and Samuel De Medeiros Queiroz at linux.conf.au in 2017. Thank you for their permission to use this content, and for their feedback and support during development. You can watch their original talk on YouTube: [Non-native English speakers in Open Source communities: A True Story](#) or read their article on opensource.com: [Tips for non-native English speakers working on open source projects](#).

## New contributors with English as a second language

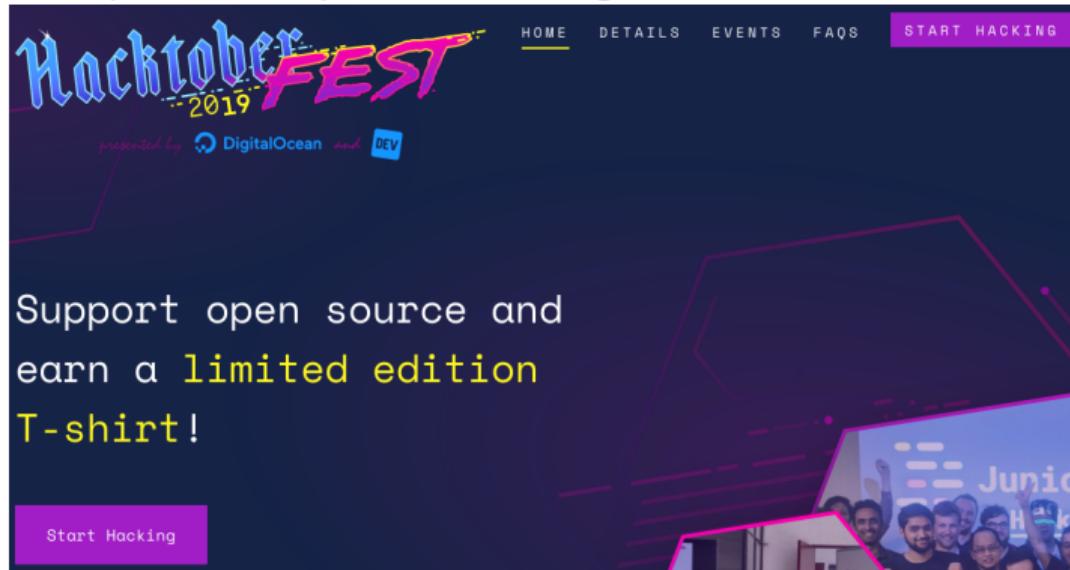
Challenges related to language skills are easier to overcome than cultural ones. Cultural differences need to be respected, while English skills can always be improved.

In order to brush up on your English skills, be in contact with the language as much as you can. Do not think about your limitations. Just do your best and you will improve eventually.

# 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?
- ▶ Find events: [OpenStack Upstream training](#), [GSoC](#), [Hacktoberfest](#)



# 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>