

Kubernetes The Hard Way

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@JapanContainerDays v18.12

<https://bit.ly/k8s-the-hard-way-jkd-v1812>

Agenda

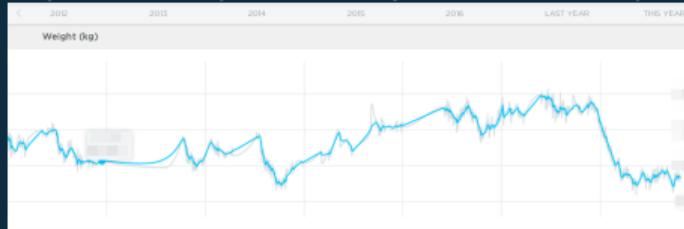
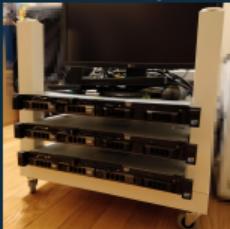
1. 自己紹介
2. 今日のゴール
3. Kubernetes The Hard Way とは？
4. 結論
5. 今後の展望
6. まとめ

DISCLAIMER

この内容は個人の見解であり、所属する組織・団体を代表するものではありません。

Who I am?

- ▶ 所属企業：2017.3- SUSE/Novell Japan
- ▶ 仕事/肩書: Senior Software Engineer/Open Source Programmer
 - ▶ OpenStack QA Up/Downstream development, Core Reviewer
(Tempest, OpenStack-Health, Subunit2SQL, Stackviz), stackalytics.com/?user_id=igawa, github.com/masayukig
- ▶ Books  
- ▶ Hobby: Bike(BMC SLR02), Diet(Low-carb), Clouds(OpenStack...), etc.

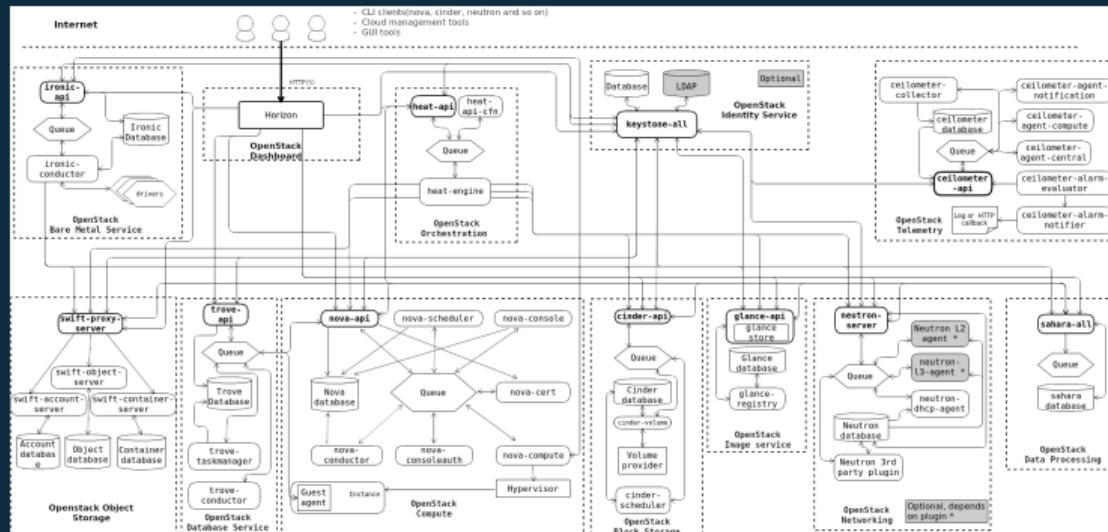


今日のゴール

- ▶ OpenStack/OSS 開発手法・使われているツールを理解(ざっくりと)
- ▶ OSS開発のハマりどころ・面白さを理解

“OpenStack” とは?

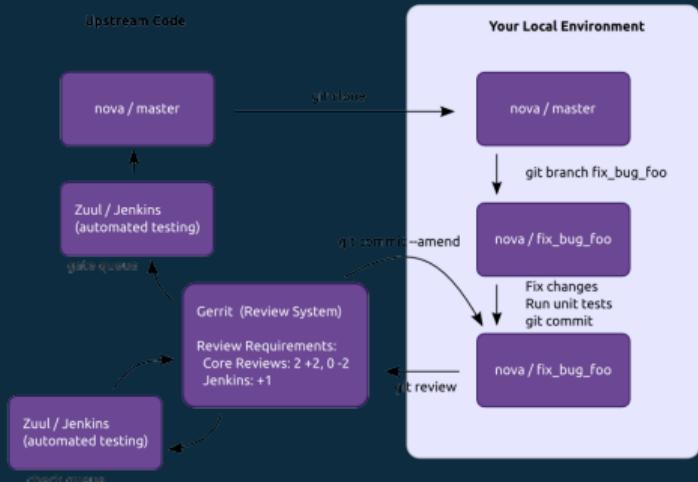
- ▶ Open Source Cloud Operation System: Apache License Version 2.0
- ▶ Written in Python
- ▶ There are a lot of ‘OpenStack’ projects: 63 projects(2018-10-23)
- ▶ Released every 6 month: Latest version is called ‘Queens’
- ▶ Users: AT&T, AA, BBVA, Bloomberg, CERN, China Mobile, Gap, VEXXHOST, Volkswagen, WALMART, etc.. <https://www.openstack.org/user-stories/>



OpenStack の開発ワークフロー

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

1. StoryBoard ヘストーリー登録＆議論
(Option)
2. パッチ作成、Gerrit でパッチ登録
3. Zuul にて CI 自動実行
4. Gerrit 上でレビュー
5. CI再度実行後、メインリポジトリへマージ



コミュニケーションツール

- ▶ IRC on Freenode: [#openstack-*\(dev,nova,glance,qa,..\)](#) <https://freenode.net/>
 - ▶ Mailing List: <http://lists.openstack.org/>
 - ▶ StoryBoard: <https://storyboard.openstack.org/>
 - ▶ Gerrit: <https://review.openstack.org/>
 - ▶ Launchpad: <https://launchpad.net>

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!

posted from [irc://freenode/freenode](#) on 2018-10-01

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 Brouseur, Chris Lamb and Bradley Kuhn, freenode #live once again brings an international free software gathering to the South West.

Other workshops at this year's event will be the returning [Human sponsor](#), [Private Internet Access](#), as well as the free Software Foundations, [OpenSUSE](#), [Minetest](#), [Linux Journal](#) and [The Handshake Project](#).

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

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 per subscription. To get 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 mail-admin@lists.openstack.org .	
List	Description
Admin-test.org	[no description available]
App-catalog-admin	[no description available]
Ceph-operators	The Ceph Operators mailing list is the main contact point for anybody managing a local OpenStack Group.
Icehouse-announce	[no description available]
Icehouse-testing	[no description available]
Icehouse-test-list	The Icehouse test list group
Icehouse	General discussion list for activities of the OpenStack Foundation
Icehouse-board	OpenStack Foundation Board of Directors
Icehouse-testing-list	working group to set the openstack foundation testing standards for binaries not drivers
Inferno-wg	Inferno Working Group Mailing List
Iugal-docs	Discussions on legal matters related to the project
Marketing	The OpenStack Marketing list is the user to facilitate discussion and best practice sharing among marketers and their regulators in the OpenStack community.
Distinsec	The Distinsec mailing list
OpenStack-announce	Key announcements about OpenStack & Security advisories
OpenStack-apt-commons	[no description available]
OpenStack-coded	The team responsible to write content for openstack.org domain
openstack-de	List for German speaking OpenStack users

[Log in / Register](#)

OpenStack

[Workshop](#) [Code](#) [Bugs](#) [Blueprints](#) [Translations](#) [Answers](#)

[Report a bug](#) [Search](#) [Help](#) [About](#)

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://openstack.org>
Wiki: <http://wikis.openstack.org>
Bug: <http://bugzilla.openstack.org> - see <http://status.openstack.org/tickets/meetup/>
Rally: <http://rally.openstack.org> to jobs.
Code review: <http://review.openstack.org>
IRC: #openstack on freenode.net
Documentation: <http://docs.openstack.org>

[Get Involved](#)

[Report a bug](#) [Ask a question](#) [Help Translate](#) [Register a Blueprint](#)

Announcements

[Gathering Future requests and bug fixes from the community](#) [Be there!](#) on 2014-05-23 <https://board.openstack.org/announcements.html#2014-05-23>

[Who's interested in Berlin on 2014-06-09](#) [Be there!](#) on 2014-06-09 A few days ago the #heat team started this in #heat. Many thanks to all who participated.

[Devote project to preparing to Boardwalk on 2015-04-08](#) [Be part of an OpenStack Initiative](#) [Be there!](#) on 2015-04-08 <https://board.openstack.org/announcements.html#2015-04-08>

[Telecon 3.2 release \(Devstack\)](#) [Be there!](#) on 2015-04-15 This is a one hour telecon dedicated for reviewing automation across Neutron...[+](#)

Project group information

Maintainers **Devs**

[OpenStack Administrators](#) Not yet selected

Bug tracker:
None specified

[Download PDF metadata](#)

FAQs for OpenStack

[Ask a question](#) [Search](#)

Projects

[Heat Central plugin](#)
[Ansible](#)
[Ansible AWX](#)
[Ansible Ruby Client](#)
[Azares](#)
[Barbican](#)
[Baremetal](#)
[Barbizon API](#)
[Blazar](#)
[Brewer](#)
[Cinder](#)
[CloudWatch](#)
[Compute](#)
[Container](#)
[Cronos](#)
[Docker](#)
[Elasticsearch](#)
[Eventlet](#)
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[Glance](#)
[Heat](#)
[Horizon](#)
[Ironic](#)
[Keystone](#)
[Liberty](#)
[Magnum](#)
[Neutron](#)
[Octavia](#)
[Panko](#)
[RabbitMQ](#)
[Rebar3](#)
[Sahara](#)
[Swift](#)
[Tempest](#)
[Trove](#)
[Virt](#)
[Watchdog](#)
[Zaqar](#)

Storyboard によるプロジェクト管理 - StoryBoard とは？

- ▶ OpenStack開発の標準タスク管理（≒バグ管理）ツール
- ▶ スクラッチ作成
- ▶ アーキテクチャ（Frontend: JS/Angular, Backend: Python/Pecan）
- ▶ 100% open source (Apache2.0)

The screenshot shows the StoryBoard web application interface. The left sidebar has a dark theme with icons for Search, Dashboard, Project Groups, Projects (selected), and Stories. The main area displays a list of tasks for the project 'openstack-infra/storyboard'. The tasks are listed in a table with columns for ID, Title, and status (Active, Merged, Invalid). The first task is 'unable to install mariadb on multinode architecture' (ID 2004103). The interface includes navigation buttons for 'Add story', 'Jump to...', and a user dropdown.

ID	Title	Status	Action
2004103	unable to install mariadb on multinode architecture	Active	Add
2004098	Create New fails to create stories	Active	Add
2004097	story lists in project view should only show stories with active tasks for that project	Active	Add
2003844	Auto populate assignee to task when review is pushed	Active	Add
2003886	Project Group Descriptions	Active	Add
2003719	BUG: Card links don't work in boards	Active	Add
2003701	Mixed Story & Task Automatic Worklist Error	Active	Add
2003698	Feature Request: Enforce flavor extended parameters	Active	Add
2003663	Browsing tasks on the search view sometimes gives an error	Active	Add
2003554	Unicode issue with (at least) reporter names in migration from Launchpad	Active	Add

Gerrit レビューシステム - Gerrit とは？

- ▶ Android 開発にて利用されている
 - ▶ 開発言語： Java
 - ▶ 100% open source
 - ▶ Pull Request 方式ではなく、中央リポジトリにパッチをレビューし、マージしていく
 - ▶ ターミナルで動作するクライアントもあります > Gertty:
<https://gertty.readthedocs.io/>

Gerrit Code Review

About News Issues Code+ Feedback search...

Projects Documentation status open

Changelog Search Sign in

Gerrit Code Review



Discuss code
and boost your team's code fu by talking about specifics.

[Learn More](#)



Serve Git
As an integrated experience within the larger code review flow.

[Learn More](#)



Manage workflows
with deeply integrated and delegatable access controls.

[Learn More](#)



Download
Our latest release is:
2.15.6

[Download](#)

Search for status:open

Subject	Status	Owner	Project	Branch	Updated	Size	CR	V
Add new policy action via_jenkinslog	Open	Bhagatrai Shewale	openstack/tacker	master (hypervisor-auto-healing)	3:25 PM	1.00 KB	0	1
Temporarily remove ha_guide from index	Merged	Andreas Jaeger	openstack/openstack-manuals	master (bg/1799511)	3:25 PM	0.00 KB	0	1
[WIP] Add native OVSDB implementation for Qodhtool	Open	Rodolfo Alonso Hernandez	openstack/nestor	master (bg/1799592)	3:25 PM	0.00 KB	0	1
Node Exporter: allows to set collectors	Open	Javine Choi	openstack/openstack-helm-infra	master (set_collectors)	3:25 PM	0.00 KB	0	1
Add charts for Elastic Beats	Open	Steve Wilkerson	openstack/openstack-helm-infra	master (add_elastic_beats)	3:25 PM	0.00 KB	0	1
Check pep8 without ignoring D900	Open	Dan Cong Tien	openstack/calculator	master	3:24 PM	0.00 KB	0	1
Further performance tuning changes for Ceptor	Open	Matthew Hepler	openstack/openstack-helm-infra	master (CEPTEU_TWINKI)	3:24 PM	0.00 KB	0	1
Add jobs table for lgt-add-reql-support-for-freezer	Open	gengch	openstack/freezer-api	master (bg/add-reql-support-for-freezer)	3:24 PM	0.00 KB	0	1
Add session api for lgt-add-reql-support-for-freezer	Open	gengch	openstack/freezer-api	master (bg/add-reql-support-for-freezer)	3:24 PM	0.00 KB	0	1
Add session table for lgt-add-reql-support-for-freezer	Open	gengch	openstack/openstack-helm-infra	master (bg/add-reql-support-for-freezer)	3:24 PM	0.00 KB	0	1
[jenkins15] Create Amadeus manifest file to deploy Rancher	Open	Chi Lo	openstack/rancher	master	3:24 PM	0.00 KB	0	1
Re-factor for stein (re-request) for tripleO	Open	Juan Antonio Osorio Rojas	openstack/release	master (ranger_re-request)	3:23 PM	0.00 KB	0	1
Implement Ceph-Client helm test	Open	Irene Makadia	openstack/openstack-helm-infra	master (bg99110)	3:23 PM	0.00 KB	0	1
ceph: re-add log directory configurable	Open	chiranthan&barun@yallaparupu	openstack/openstack-helm-infra	master	3:23 PM	0.00 KB	0	1
Add starting up JenkinsJobs cronjobs	Open	Dmitri Kalinin	openstack/openstack-helm-infra	master	3:23 PM	0.00 KB	0	1
Remove amq-ingress logging module	Open	Mike Chen	openstack/kuryr-kube	master (trivial)	3:23 PM	0.00 KB	0	1
Add deliverable file for ansible role-openstack-operations for stable	Open	Juan Antonio Osorio Rojas	openstack/release	master (tripleo/release)	3:22 PM	0.00 KB	0	1
Add zabbix status upgrade check command	Open	Yuriy Dvornikov	openstack/tracker	master (zabbix-checksums)	3:22 PM	0.00 KB	0	1

参考：Gertty - Gerrit レビューシステム

- ▶ ターミナルで動作するクライアント
- ▶ <https://gertty.readthedocs.io/>
- ▶ デモ

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
549111	Add test test_create_server_with_bdm_source_image	master	bdm_image	zhufl	2018-10-24		1 1
602981	Update REVIEWING docs with fast-track approval process	master	reviewing	Felipe Montelro	2018-10-24		1 1
612277	[Negative] Extend volume over quota limit	master	extend_volume_negati	Liron Kuchlani	2018-10-23		1 1
588120	Set max microversion 2.35 for nova floatingip and securitygroup	master	bp/clear-deprecated-	zhufl	2018-10-23		2 1
611068	Make connectivity test less backend dependent	master	bug/1798317	Lucas Alvares Gomes	2018-10-23		1 1
523935	Add profiler support into Tempest	master	profiler	Ilya Shakhat	2018-10-23		1 1
602415	Use tempest run command directly for full job	master	use-tempest-run	Masayuki Igawa	2018-10-22		1 1
560073	Forbid oslo.log to write to STDOUT	master	bug/1764375	Federico Rossi	2018-10-19		1 1
606909	Adding missing test case of account generator resources	master	606880	Manlik Bindlish	2018-10-18		2 1 1
609644	Add response schema validation for volume limits	master	bp/volume-response-s	zhufl	2018-10-18		1 1
608706	Add ipv6 tempest jobs	master	ipv6job	Antonio Ojea	2018-10-17		1 1
587748	Adding missing test cases in "test_run.py"	master	bp/tempest-cli-unit-	Manlik Bindlish	2018-10-17		1 1
594037	Add testcase for getting hypervisor servers in 2.53	master	hypervisor-252	zhufl	2018-10-16		1 1
600921	Add response schema validation for snapshot manage	master	bp/volume-response-s	zhufl	2018-10-13		1 1
605600	Add response schema validation for volume quota classes	master	bp/volume-response-s	zhufl	2018-10-13		1 1
609624	Add response schema validation for volume snapshots	master	bp/volume-response-s	zhufl	2018-10-12		1 1
606809	Add response schema validation for encryption types	master	bp/volume-response-s	zhufl	2018-10-12		1 1
608875	Add response schema validation for volume manage	master	bp/volume-response-s	zhufl	2018-10-12		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
608898	Add response schema validation for volume transfer	master	bp/volume-response-s	zhufl	2018-10-11		1 1
605595	Add response schema validation for volume extensions	master	bp/volume-response-s	zhufl	2018-10-10		2 1
605985	Add response schema validation for volume types	master	bp/volume-response-s	zhufl	2018-10-10		1 1
606772	Add response schema validation for volume group snapshots	master	bp/volume-response-s	zhufl	2018-10-10		1 1
603339	Add response schema validation for volume quota set	master	bp/volume-response-s	zhufl	2018-10-10		1 1
605917	Add response schema validation for volume pools	master	bp/volume-response-s	zhufl	2018-10-09		1 1
606328	Add response schema validation for volume groups	master	bp/volume-response-s	zhufl	2018-10-09		1 1
606244	Add response schema validation for volume group types	master	bp/volume-response-s	zhufl	2018-10-08		1 1
603580	Add response schema validation for volume messages	master	bp/volume-response-s	zhufl	2018-10-08		1 1
605574	Add response schema validation for volume capabilities	master	bp/volume-response-s	zhufl	2018-10-08		1 1
589279	Immutable user source: test_llst_users	master	bug/1777847	Anna Pankiewicz	2018-10-05		1 1
587878	Immutable user source: test_credentials	master	bug/1777847	Anna Pankiewicz	2018-09-27		1 1
588393	Immutable user source: test_default_project_id	master	bug/1777847	Anna Pankiewicz	2018-09-27		1 1
588395	Immutable user source: test_users_negative	master	bug/1777847	Anna Pankiewicz	2018-09-27		1 1
507726	Use system creds for system operations	master	system-creds	Jamie Lennox	2018-09-25		1 1
384528	Adds protocol options for test_cross_tenant_traffic	master	bug/1363986	Claudiu Belu	2018-09-20		2 1
603295	Add response schema validation for volume hosts	master	bp/volume-response-s	zhufl	2018-09-20		1 1

↳ Subscribed projects

Zuul による継続的インテグレーション - Zuul とは？

- ▶ 自動テストによるゲートを設けて、常に正しく動作するコードのみがマージされるようとする
- ▶ Ansible による CI/CD
- ▶ プロジェクトをまたがった依存関係もテストすることができる

The screenshot shows the Zuul web interface with the following details:

- Top Navigation:** A ZUUL logo, Status, Jobs, Builds, Documentation, and Tenant openstack.
- Check Queue (118 items):** 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-ovn
 - openstack/networking-ovn 608252.4 (0 min, 3 hr 50 min)
 - Queue: openstack/mistral
 - openstack/mistral 610461.12 (0 min, 2 hr 54 min)
- gate Queue (15 items):** 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 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 Queue (0 items):** This pipeline runs jobs that operate after each change is merged. Queue items are identified by the abbreviated hash (git log --format=hh) of the merge commit.
- promote Queue (0 items):** This pipeline runs jobs that operate after each change is merged in order to promote artifacts generated in the gate pipeline.
- pre-release Queue (0 items):** When a commit is tagged with a pre-release tag, this pipeline runs jobs that publish archives and documentation.
- release Queue (0 items):** When a commit is tagged as a release, this pipeline runs jobs that publish archives and documentation.
- periodic Queue (0 items):** Jobs in this queue are triggered on a timer.
- release-post Queue (0 items):** This pipeline runs release-process-critical jobs that operate after specific changes are merged.
- tag Queue (0 items):** This pipeline runs jobs in response to any tag event.
- periodic-stable Queue (0 items):** Periodic checks of the stable branches.

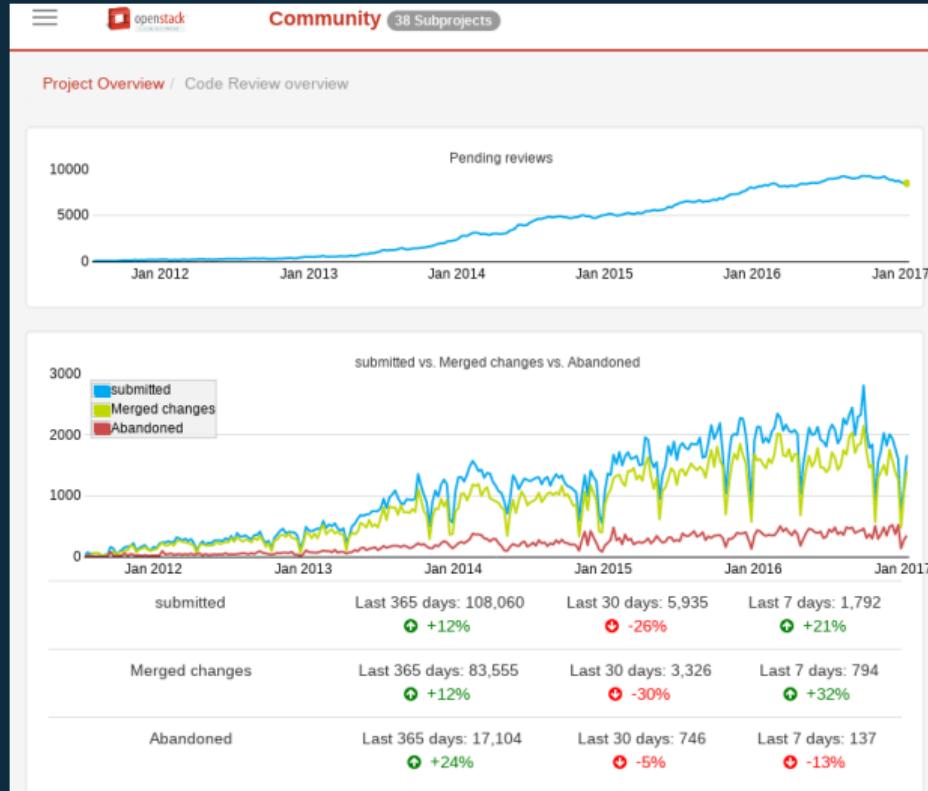
開発裏話

1. パッチがなかなかマージされない！その理由とは？
2. 不安定なCI
3. コミュニケーションスキル・英語(世界標準)の重要性

1. パッチがなかなかマージされない！その理由とは？ - 開発裏話

- ▶ プロジェクト規模≒ステークホルダの数
- ▶ コミュニケーション不足
- ▶ レビュー者数の不足

1. (続き) その理由とは? - レビュー者数の不足



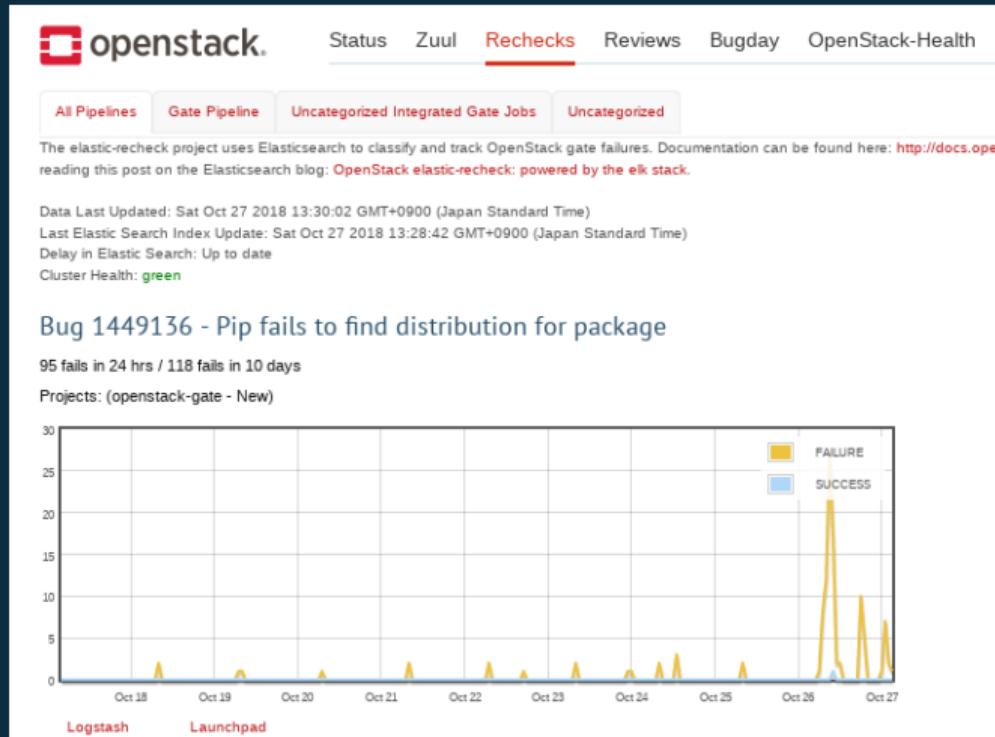
<http://activity.openstack.org/dash/browser/scr.html>

2. 不安定なCI - 開発裏話

- ▶ CIで動いてないものは腐ってくる
- ▶ CIも完璧ではない
- ▶ 迅速な対応が必要

2. 不安定なCI (続き) - Elastic Recheck

Bugとの関連付けをログファイルのシグネチャと紐付けて自動的に！



<http://status.openstack.org/elastic-recheck/>

3. コミュニケーションスキル・英語(世界標準)の重要性 - 開発裏話

- ▶ 議論
- ▶ 職探し（日本で開発者(プログラマ)職困難）
- ▶ 楽しさ（健康には気をつけましょう！（笑））

Masayuki Igawa @  @masayukig

#aftersoc #afterstack #OpenStackSummit
#openstack #suse



1:45 PM - 26 May 2018

12 Likes  12 

1 7 12 由

Kendall Nelson  Following @knelson92

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  7 31 

1 7 31

Conclusion

- ▶ Gerrit, StoryBoard, Zuul 等様々なOSSは、オープンソース開発以外でも利用可能です！
- ▶ 英語重要
- ▶ OSS 開発は（大変なこともあるけど）楽しい！皆さん参加しましょう！

Appendix

- ▶ Slides: <http://bit.ly/osc-2018fall-oss>
- ▶ 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>