OpenStack Community Activity Report
July-September, 2014
Report sponsored by the OpenStack Foundation

Bitergia

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We would like to thank the effort of the following people their effort to provide feedback and validation process.

Executive Summary

The second edition of the quarterly OpenStack Community Activity Report[1] shows a healthy community of developers and users, regularly shipping an extremely complicated set of software projects.

In this version of the report, we've started looking at what's causing the long lead times for new patches to merge: are reviewers or original authors slow to respond to comments? We discovered that the mean waiting time for a reviewer has increased sharply after Q3 2013 but people who submit patches are a lot slower to respond to comments, across all projects. New measures are being put into place to identify and solve the root cause of this problem:

- Upstream Training sessions are training new developers in the 'OpenStack way' of developing software

- a new working group for product managers and decision makers

- a study to understand what motivates companies to join OpenStack and their internal organizational structures

- Nova and Neutron core reviewers have started discussions on how to address this problem. Splitting Nova components and changing the way drivers are maintained are among the proposed solutions.

Key findings:

The number of developers involved in OpenStack keeps growing
202 new developers (+21.5%) and +14.2% increase in regular contributors[2] compared to previous quarter. On average, 567 developers participated in development efforts each month, with a total of 1,139 during the third quarter. Active Core Reviewers almost doubled to 153 from 82 in 2012.

The mean time to merge proposed changes keeps increasing
The time it takes for a proposed patch to go from first proposal to

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[1] This report is produced quarterly to give Community Managers and OpenStack Foundation's management better insights on development activities and online conversations. The quantitative and qualitative assessment start from tracking actions across all OpenStack git repositories, gerrit code reviews, bug trackers as well as IRC channels, mailing lists and questions/answers.

[2] These are developers responsible for delivering the 95% of OpenStack's code

final approval and merge is six times longer since Q4 2012. The mean number of patches in each changeset is also increasing, which may be part of the cause. The longer lead times are creating visible friction in the ecosystem.

Nova is still the most active project in terms of commits
Neutron follows, with Horizon and Keystone in fourth and fifth place. Heat has gone down a couple of positions from the third to fifth place.

Efficiency indicators of OpenStack software development remain stable

Indicators Backlog Management Index, Review Efficiency Index and Time to Merge are fairly stable, with minor oscillations each quarter. These variations appear related to specific roadmap items and seasonal changes, connected to release cycle. On average, the Review Efficiency Index is 0.75, meaning that of 100 changesets submitted, the community of developers is able to close 75 of them either by merging or abandoning them.

Contents

Chapter 1

Overview of the Project

1.1 General Activity

The OpenStack Community Activity Report is produced quarterly to give Community Managers and OpenStack Foundation's management better insights on development activities and online conversations. The quantitative and qualitative assessment start from tracking actions across all OpenStack git repositories, gerrit code reviews, bug trackers as well as IRC channels, mailing lists and questions/answers site Ask OpenStack.

The report looks at activities across the OpenStack community during the third quarter of 2014, comparing it to previous eigth quarters.[1].

The analysis aims at providing a detailed view of how the OpenStack project is evolving with special focus on each of the OpenStack programs[2]. OpenStack Integrated Releases are delivered at the beginning of the second and fourth quarters of each year and cycles of development activity are visible in the report: the first and third quarters of the year are periods of higher activity while during the second and fourth ones show other recognizable patterns of activity in the OpenStack ecosystem.

A more detailed information about the community activity comparing two periods: September 2012-September 2013 and September 2013-September 2014, shows an increase in all of the analyzed data sources. Special focus on the increments in the question and answers tool[3] and in the

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[1]The analyzed data sources are available in appendixB

[2]Each of the projects mentioned are following the analysis of the Programs specified at `http://git.openstack.org/cgit/openstack/governance/tree/reference/programs.yaml`. Besides, the hierarchy of projects and their repositories can be found at the correspondent appendixB

[3]`https://ask.openstack.org`

IRC channels[4].

Data source	Activity 365 days	Change (wrt to prev. 365 days)
Gits	52123 commits	59%
Tickets	12172 closed tickets	72%
Mailing Lists	47343 sent emails	97%
Gerrit	58805 submitted reviews	72%
Askbot	5550 posted questions	139%
IRC	1942016 messages	256%

Table 1.1: Activity during the last 365 days and its evolution

Focusing on the development activity, and specially on the integrated programs[5], the most active in terms of commits is Nova with 1,140 commits in the third quarter of 2014 followed by Neutron with 559 commits and Horizon with 448 commits.

Integrated Project	Commits
nova	1140
neutron	559
horizon	448
keystone	400
heat	392
cinder	311
sahara	233
ceilometer	202
glance	179
swift	135
trove	112

Table 1.2: Last quarter integrated projects number of commits

1.2 Development and Conversations

Regarding to the community, developers are divided into three main sets, core, regular and occasional[6]. Every quarter in the past two years shows

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[4]http://eavesdrop.openstack.org/irclogs/

[5]The full list of the repositories analyzed per program is available at B

[6]Contributing developers are characterized as core, regular and occasional depending on their activity in the git repositories. The classification is built by sorting contributors by their total number of commits; we sum the total commits per each individual contributors:

a continuous increase in the levels of core and regular developers. Third quarter of 2014 has the highest levels with 188 core developers and 392 regular ones.
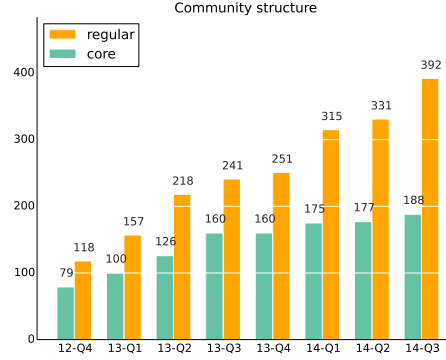
Community structure

Figure 1.1: Evolution of the last 8 quarters of the core, regular and occasional developers (Git activity)

Period	Core	Regular	Occasional
12-Q4	79	118	174
13-Q1	100	157	236
13-Q2	126	218	277
13-Q3	160	241	384
13-Q4	160	251	360
14-Q1	175	315	477
14-Q2	177	331	429
14-Q3	188	392	559

Table 1.3: Characterization of developers by their total contribution to the OpenStack projects

The mean number of developers per month also shows a continuous increment. The third quarter of 2014 has reached the maximum of the series with a mean of 567 different developers per month.

the individuals whose commits sum up to 80% of the total number of commits in the quarter are the core contributors in that quarter. The regular contributors are those whose commits sum up to 95% of the total. The others are the occasional contributors.
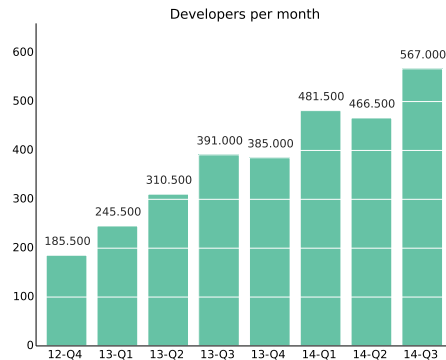
Developers per month

Figure 1.2: Number of developers per month in mean for each quarter

The main organizations[7] participating in the development are listed in the table below, per project[8].

Integrated project	Top 1 (commits)	Top 2 (commits)
neutron	Red Hat (72)	Cisco Systems (64)
sahara	Mirantis (156)	Red Hat (52)
ceilometer	Red Hat (45)	Mirantis (34)
horizon	Red Hat (83)	IBM (77)
heat	Red Hat (170)	Mirantis (53)
nova	IBM (329)	Red Hat (198)
trove	Tesora (43)	HP (19)
swift	SwiftStack (34)	Rackspace (29)
glance	Red Hat (41)	IBM (30)
cinder	IBM (48)	SolidFire (32)
keystone	IBM (155)	Metacloud (60)

Table 1.4: Organizations leading the development integrated projects during the last quarter

The most active developers for each of the integrated projects are listed

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[7]The details about affiliation between individual contributors and employer is derived from: information provided by the individuals in their Foundation membership data, guessed from corporate email addresses and from manual corrections.

[8]Integrated projects consist of the projects identified as integrated by the Programs yaml file available at `http://git.openstack.org/cgit/openstack/governance/tree/reference/programs.yaml` at the moment of this analysis

in the following table.

Integrated project	Top Contributor	Commits
neutron	Kevin Benton	44
sahara	Andrew Lazarev	53
ceilometer	Nejc Saje	24
horizon	Akihiro MOTOKI	30
heat	Steve Baker	59
nova	garyk	61
trove	Amrith Kumar	22
swift	Samuel Merritt	21
glance	Flavio Percoco	37
cinder	John Griffith	32
keystone	Brant Knudson	81

Table 1.5: Top developers in commits per integrated project during the last quarter

The most popular email threads were focused on the future of the project from several points of view. The thread initiated by Thierry Carrez on August 5th, 2014[9] focused on the future of the integrated releases, with 185 messages at the moment of this analysis. The second most popular focused on potential issues in Nova, initiated by Daniel P. Berrange on September 4th, 2014[10] with 126 emails at the moment of this analysis. The third largest thread focused on the TC meeting and the Zaqar community. This thread was initiated by Flavio Percoco on the 4th of September, 2014[11] and contains 85 different emails.

1.3   Efficiency

Two metrics have been identified to measure efficiency: the review efficiency index (REI) and the Time to Merge. REI is measured as the number of closed (merged or abandoned) changesets out of the submitted changesets in a given period. Time to Merge is measured as the time since a review is submitted until this is closed. Typical BMI values in the OpenStack Integrated projects rounds a 0.75, what indicates that for 100 opened changesets

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[9]http://lists.openstack.org/pipermail/openstack-dev/2014-August/041929.html

[10]http://lists.openstack.org/pipermail/openstack-dev/2014-September/044872.html

[11]http://lists.openstack.org/pipermail/openstack-dev/2014-September/044845.html

in a period, the community closes 75. Besides, the median Time to Merge
is of 7.82, having an increase from the previous period.

Integrated project	Reviews Efficiency	Time to Merge (median)
neutron	0.65	7.37 days
sahara	0.91	2.57 days
ceilometer	0.8	7.47 days
horizon	0.7	4.75 days
heat	0.72	13.53 days
nova	0.7	14.92 days
trove	0.69	13.75 days
swift	0.77	5.16 days
glance	0.66	5.27 days
cinder	0.81	5.59 days
keystone	0.82	5.66 days

Table 1.6: Closed changesets out of opened changesets and median Time to
Merge in Gerrit

Chapter 2

Per Project break down

This chapter aims at providing a detailed report on the activity of the Open-Stack Foundation projects. This is mainly focused on the activity per project as defined, stressing the point on the 'integrated' projects.

Each of the projects is divided into three sections and provides information from the last eight quarters.:

- activity: centered in the following metrics: commits from git activity, submitted, merge and abandoned reviews from the review system and opened and closed tickets from the issue tracking system.

- community: active core reviewers in gerrit, active authors in Git and top ten developers and top ten organizations contributing to the development in the last quarter. of each project.

- process: efficiency closing changesets, Time to Merge (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

2.1 Overall OpenStack Programs

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: OpenStack Software
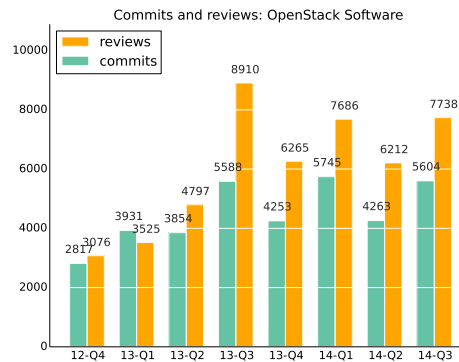
Period	Commits	Reviews
12-Q4	2817	3076
13-Q1	3931	3525
13-Q2	3854	4797
13-Q3	5588	8910
13-Q4	4253	6265
14-Q1	5745	7686
14-Q2	4263	6212
14-Q3	5603	7738

Opened and closed tickets: OpenStack Software
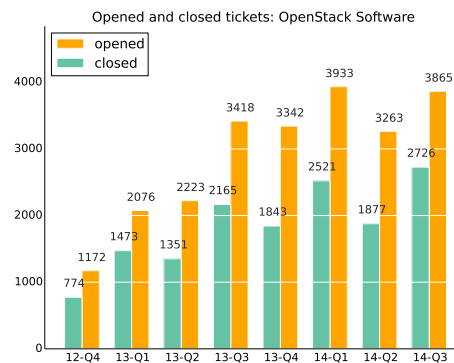
Period	Closed	Opened
12-Q4	774	1172
13-Q1	1473	2076
13-Q2	1351	2223
13-Q3	2165	3418
13-Q4	1843	3342
14-Q1	2521	3933
14-Q2	1877	3263
14-Q3	2726	3865

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Merged and abandoned reviews: OpenStack Software

Period	Merged	Abandoned
12-Q4	2482	425
13-Q1	3488	629
13-Q2	3442	727
13-Q3	4766	1132
13-Q4	3702	1185
14-Q1	4520	1706
14-Q2	3488	875
14-Q3	4784	1018

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: OpenStack Software
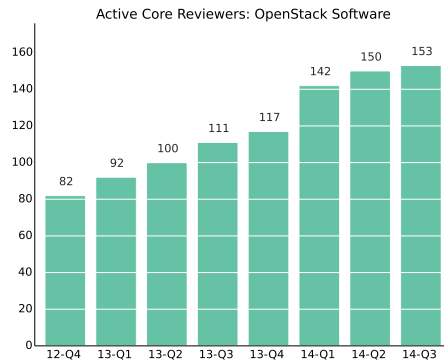
Period	Active Core
12-Q4	82
13-Q1	92
13-Q2	100
13-Q3	111
13-Q4	117
14-Q1	142
14-Q2	150
14-Q3	153

Authors OpenStack Software
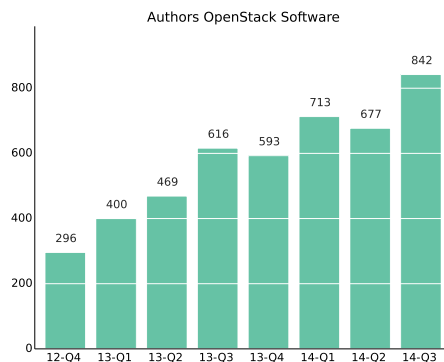
Period	Authors
12-Q4	296
13-Q1	400
13-Q2	469
13-Q3	616
13-Q4	593
14-Q1	713
14-Q2	677
14-Q3	842

Commit (s)	Author
98	Brant Knudson
87	Andreas Jaeger
84	Jamie Lennox
83	Flavio Percoco
66	Andrew Lazarev
65	garyk
65	Steve Martinelli
64	Valeriy Ponomaryov
62	Morgan Fainberg
61	Matt Riedemann

Commit (s)	Organizations
1078	Red Hat
791	IBM
554	Mirantis
530	HP
408	Rackspace
175	VMware
158	NEC
130	Intel
114	Cisco Systems
112	SUSE

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.
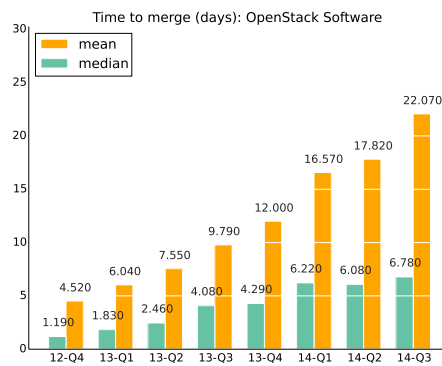
Efficiency closing tickets: OpenStack Software
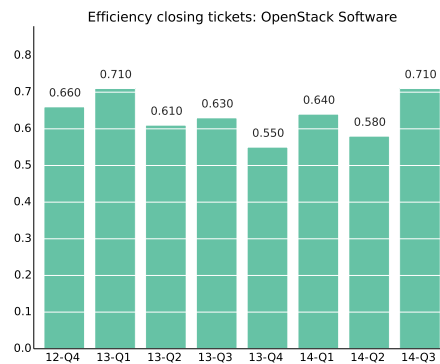
Period	Closed/Opened
12-Q4	0.66
13-Q1	0.71
13-Q2	0.61
13-Q3	0.63
13-Q4	0.55
14-Q1	0.64
14-Q2	0.58
14-Q3	0.71

Changesets efficiency OpenStack Software
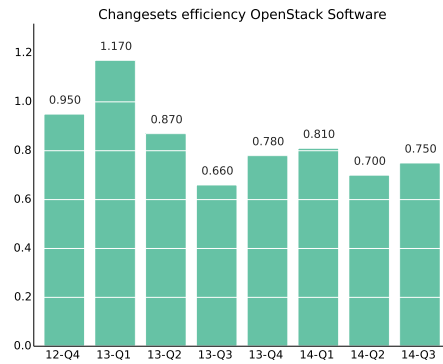
Period	Closed/Opened
12-Q4	0.95
13-Q1	1.17
13-Q2	0.87
13-Q3	0.66
13-Q4	0.78
14-Q1	0.81
14-Q2	0.7
14-Q3	0.75

Time to merge (days): OpenStack Software

Period	Median	Mean
12-Q4	1.19	4.52
13-Q1	1.83	6.04
13-Q2	2.46	7.55
13-Q3	4.08	9.79
13-Q4	4.29	12.0
14-Q1	6.22	16.57
14-Q2	6.08	17.82
14-Q3	6.78	22.07

Patchsets per Changeset: OpenStack Software
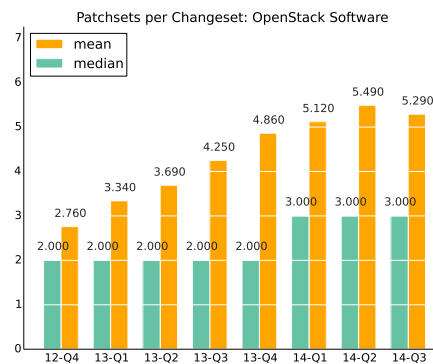
Period	Median	Mean
12-Q4	2.0	2.76
13-Q1	2.0	3.34
13-Q2	2.0	3.69
13-Q3	2.0	4.25
13-Q4	2.0	4.86
14-Q1	3.0	5.12
14-Q2	3.0	5.49
14-Q3	3.0	5.28

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Time waiting for the reviewer: OpenStack Software
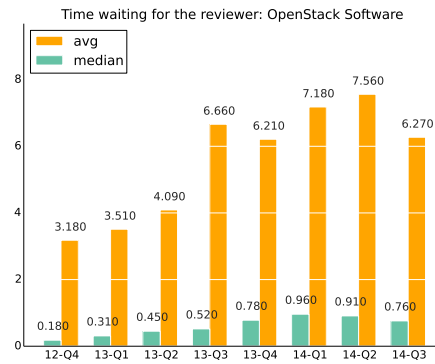
Period	Median	Mean
12-Q4	0.18	3.18
13-Q1	0.31	3.51
13-Q2	0.45	4.09
13-Q3	0.52	6.66
13-Q4	0.78	6.21
14-Q1	0.96	7.18
14-Q2	0.91	7.56
14-Q3	0.76	6.27

Time waiting for the submitter: OpenStack Software
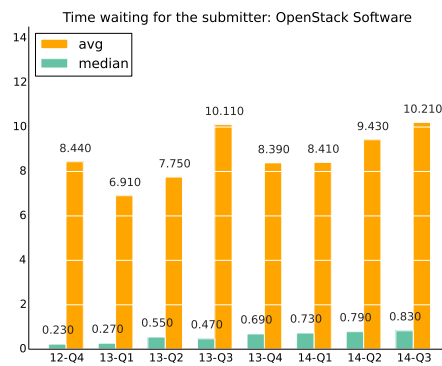
Period	Median	Mean
12-Q4	0.23	8.44
13-Q1	0.27	6.91
13-Q2	0.55	7.75
13-Q3	0.47	10.11
13-Q4	0.69	8.39
14-Q1	0.73	8.41
14-Q2	0.79	9.43
14-Q3	0.83	10.21

2.1.1 OpenStack Integrated Programs

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: integrated
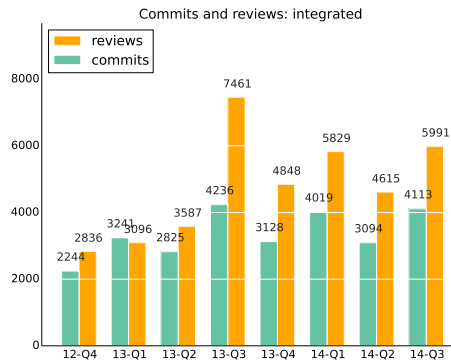
Period	Commits	Reviews
12-Q4	2244	2836
13-Q1	3241	3096
13-Q2	2825	3587
13-Q3	4236	7461
13-Q4	3128	4848
14-Q1	4019	5829
14-Q2	3094	4615
14-Q3	4112	5991

Opened and closed tickets: integrated
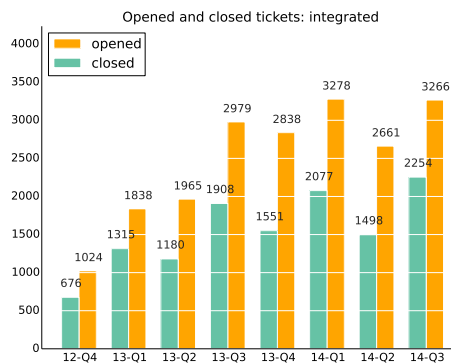
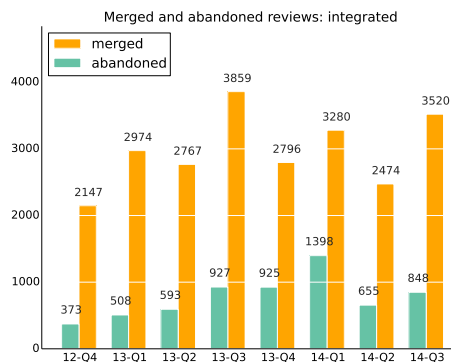| Period	Closed	Opened
12-Q4	676	1024
13-Q1	1315	1838
13-Q2	1180	1965
13-Q3	1908	2979
13-Q4	1551	2838
14-Q1	2077	3278
14-Q2	1498	2661
14-Q3	2254	3266

Merged and abandoned reviews: integrated

Period	Merged	Abandoned
12-Q4	2147	373
13-Q1	2974	508
13-Q2	2767	593
13-Q3	3859	927
13-Q4	2796	925
14-Q1	3280	1398
14-Q2	2474	655
14-Q3	3520	848

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: integrated
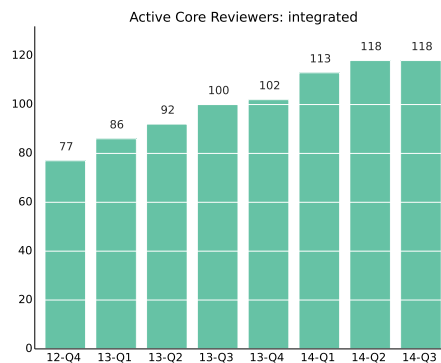
Period	Active Core
12-Q4	77
13-Q1	86
13-Q2	92
13-Q3	100
13-Q4	102
14-Q1	113
14-Q2	118
14-Q3	118

Authors integrated
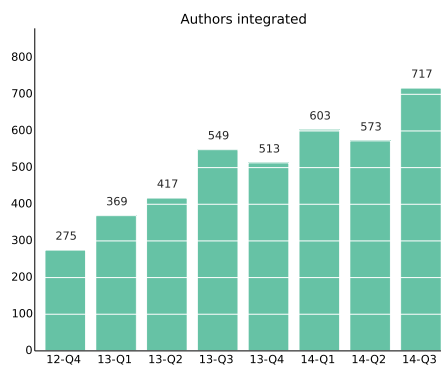
Period	Authors
12-Q4	275
13-Q1	369
13-Q2	417
13-Q3	549
13-Q4	513
14-Q1	603
14-Q2	573
14-Q3	717

Commit (s)	Author	Commit (s)	Organizations
88	Brant Knudson	741	Red Hat
65	garyk	716	IBM
61	Morgan Fainberg	378	Mirantis
60	Andrew Lazarev	346	HP
59	Daniel P. Berrange	246	Rackspace
59	Steve Baker	173	VMware
56	Matt Riedemann	136	NEC
54	Dan Smith	111	Cisco Systems
48	Steven Hardy	109	Intel
46	Steve Martinelli	73	Huawei

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: integrated
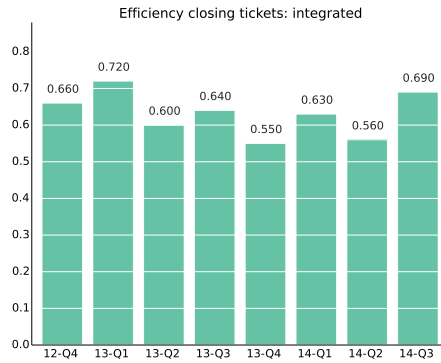
Period	Closed/Opened
12-Q4	0.66
13-Q1	0.72
13-Q2	0.6
13-Q3	0.64
13-Q4	0.55
14-Q1	0.63
14-Q2	0.56
14-Q3	0.69

Changesets efficiency integrated
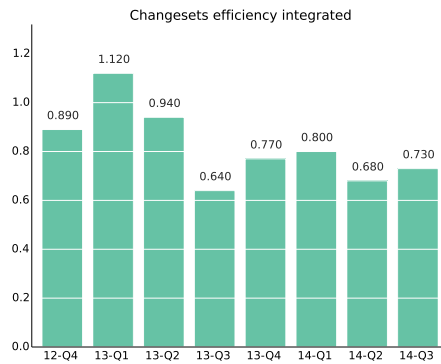
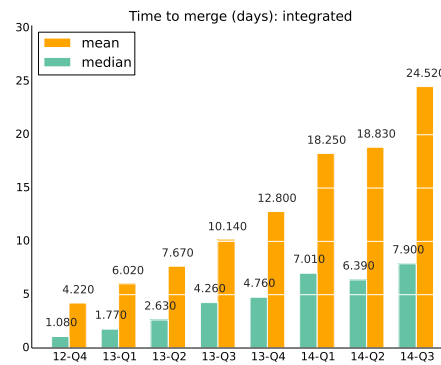| Period	Closed/Opened
12-Q4	0.89
13-Q1	1.12
13-Q2	0.94
13-Q3	0.64
13-Q4	0.77
14-Q1	0.8
14-Q2	0.68
14-Q3	0.73

Time to merge (days): integrated

Period	Median	Mean
12-Q4	1.08	4.22
13-Q1	1.77	6.02
13-Q2	2.63	7.67
13-Q3	4.26	10.14
13-Q4	4.76	12.8
14-Q1	7.01	18.25
14-Q2	6.39	18.83
14-Q3	7.9	24.52

Patchsets per Changeset: integrated
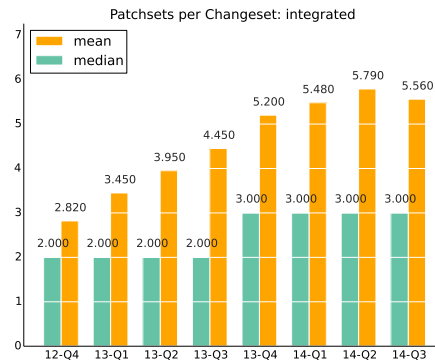
Period	Median	Mean
12-Q4	2.0	2.82
13-Q1	2.0	3.45
13-Q2	2.0	3.95
13-Q3	2.0	4.45
13-Q4	3.0	5.2
14-Q1	3.0	5.48
14-Q2	3.0	5.78
14-Q3	3.0	5.55

Time waiting for the reviewer: integrated
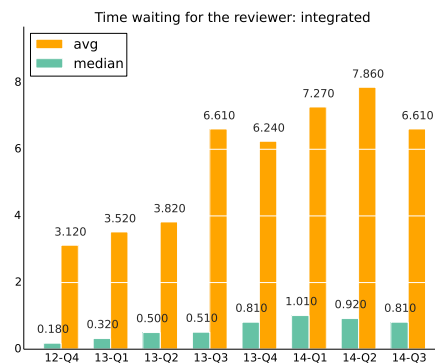
Period	Median	Mean
12-Q4	0.18	3.12
13-Q1	0.32	3.52
13-Q2	0.5	3.82
13-Q3	0.51	6.61
13-Q4	0.81	6.24
14-Q1	1.01	7.27
14-Q2	0.92	7.86
14-Q3	0.81	6.61

Time waiting for the submitter: integrated
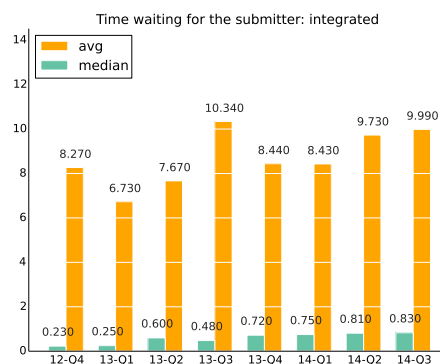
Period	Median	Mean
12-Q4	0.23	8.27
13-Q1	0.25	6.73
13-Q2	0.6	7.67
13-Q3	0.48	10.34
13-Q4	0.72	8.44
14-Q1	0.75	8.43
14-Q2	0.81	9.73
14-Q3	0.83	9.99

2.1.1.1 Ceilometer

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: ceilometer
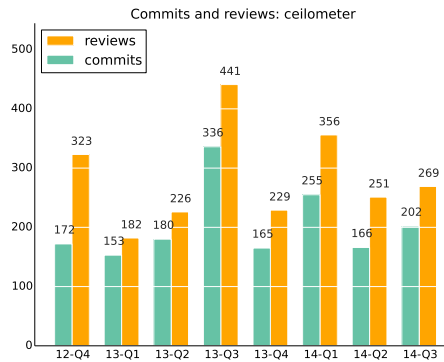
Period	Commits	Reviews
12-Q4	172	323
13-Q1	153	182
13-Q2	180	226
13-Q3	336	441
13-Q4	165	229
14-Q1	255	356
14-Q2	166	251
14-Q3	202	269

Opened and closed tickets: ceilometer
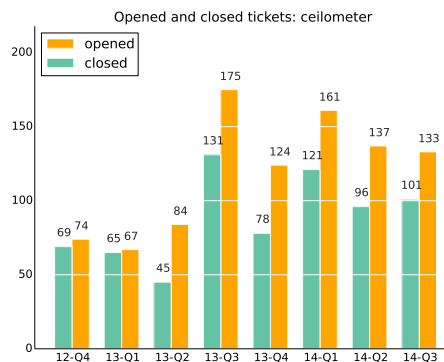
Period	Closed	Opened
12-Q4	69	74
13-Q1	65	67
13-Q2	45	84
13-Q3	131	175
13-Q4	78	124
14-Q1	121	161
14-Q2	96	137
14-Q3	101	133

Merged and abandoned reviews: ceilometer
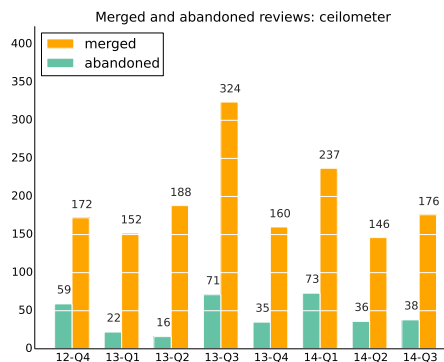
Period	Merged	Abandoned
12-Q4	172	59
13-Q1	152	22
13-Q2	188	16
13-Q3	324	71
13-Q4	160	35
14-Q1	237	73
14-Q2	146	36
14-Q3	176	38

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: ceilometer
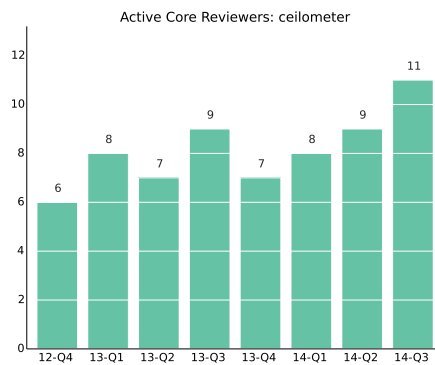
Period	Active Core
12-Q4	6
13-Q1	8
13-Q2	7
13-Q3	9
13-Q4	7
14-Q1	8
14-Q2	9
14-Q3	11

Authors ceilometer
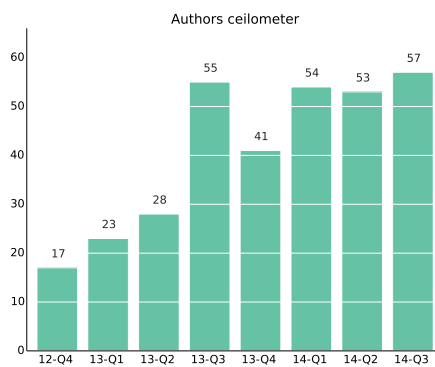
Period	Authors
12-Q4	17
13-Q1	23
13-Q2	28
13-Q3	55
13-Q4	41
14-Q1	54
14-Q2	53
14-Q3	57

Commit (s)	Author	Commit (s)	Organizations
24	Nejc Saje	45	Red Hat
20	Gordon Chung	34	Mirantis
14	Mehdi Abaakouk	30	IBM
11	Dina Belova	24	XLAB
10	Julien Danjou	14	Intel
9	Chris Dent	9	Cisco Systems
9	Pradeep Kilambi	8	HP
8	Igor Degtiarov	6	Huawei
7	Ilya Tyaptin	4	NTT
7	Ladislav Smola	2	99cloud

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: ceilometer

Period	Closed/Opened
12-Q4	0.93
13-Q1	0.97
13-Q2	0.54
13-Q3	0.75
13-Q4	0.63
14-Q1	0.75
14-Q2	0.7
14-Q3	0.76

Changesets efficiency ceilometer
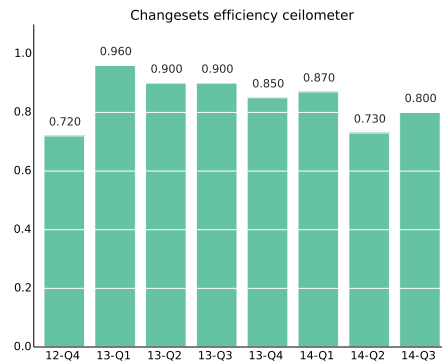
Period	Closed/Opened
12-Q4	0.72
13-Q1	0.96
13-Q2	0.9
13-Q3	0.9
13-Q4	0.85
14-Q1	0.87
14-Q2	0.73
14-Q3	0.8

Time to merge (days): ceilometer
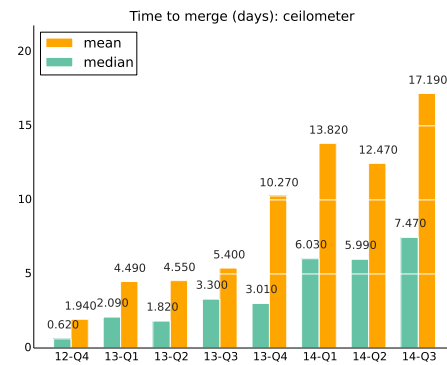
Period	Median	Mean
12-Q4	0.62	1.94
13-Q1	2.09	4.49
13-Q2	1.82	4.55
13-Q3	3.3	5.4
13-Q4	3.01	10.27
14-Q1	6.03	13.82
14-Q2	5.99	12.47
14-Q3	7.47	17.19

Patchsets per Changeset: ceilometer
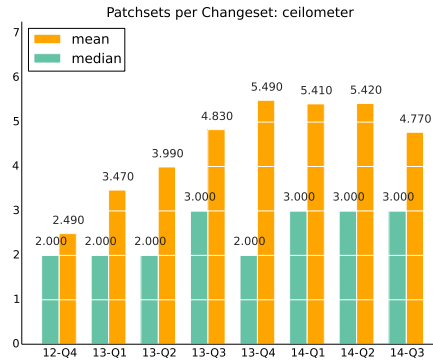
Period	Median	Mean
12-Q4	2.0	2.49
13-Q1	2.0	3.47
13-Q2	2.0	3.99
13-Q3	3.0	4.83
13-Q4	2.0	5.49
14-Q1	3.0	5.41
14-Q2	3.0	5.42
14-Q3	3.0	4.77

Time waiting for the reviewer: ceilometer
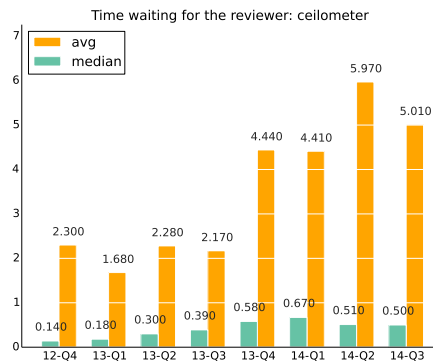
Period	Median	Mean
12-Q4	0.14	2.3
13-Q1	0.18	1.68
13-Q2	0.3	2.28
13-Q3	0.39	2.17
13-Q4	0.58	4.44
14-Q1	0.67	4.41
14-Q2	0.51	5.97
14-Q3	0.5	5.01

Time waiting for the submitter: ceilometer
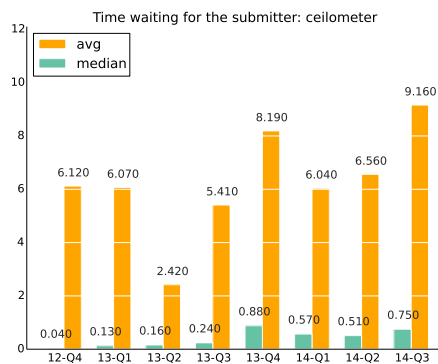
Period	Median	Mean
12-Q4	0.04	6.12
13-Q1	0.13	6.07
13-Q2	0.16	2.42
13-Q3	0.24	5.41
13-Q4	0.88	8.19
14-Q1	0.57	6.04
14-Q2	0.51	6.56
14-Q3	0.75	9.16

2.1.1.2 Cinder

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: cinder
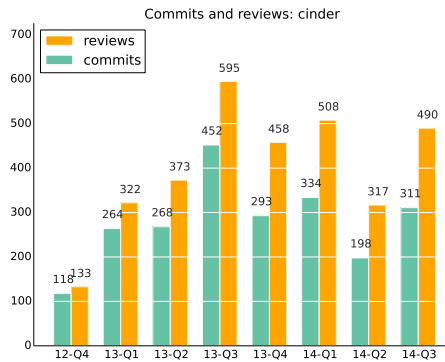
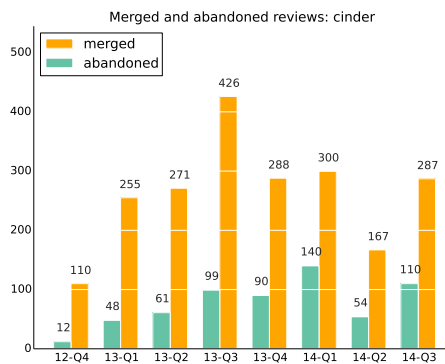| Period	Commits	Reviews
12-Q4	118	133
13-Q1	264	322
13-Q2	268	373
13-Q3	452	595
13-Q4	293	458
14-Q1	334	508
14-Q2	198	317
14-Q3	311	490

Opened and closed tickets: cinder
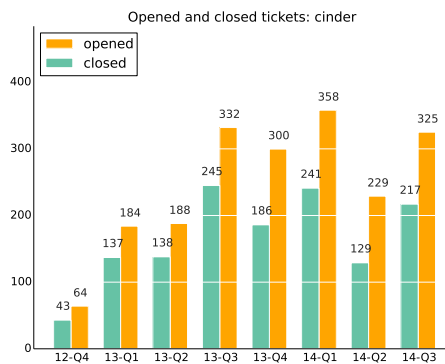
Period	Closed	Opened
12-Q4	43	64
13-Q1	137	184
13-Q2	138	188
13-Q3	245	332
13-Q4	186	300
14-Q1	241	358
14-Q2	129	229
14-Q3	217	325

Merged and abandoned reviews: cinder

Period	Merged	Abandoned
12-Q4	110	12
13-Q1	255	48
13-Q2	271	61
13-Q3	426	99
13-Q4	288	90
14-Q1	300	140
14-Q2	167	54
14-Q3	287	110

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: cinder
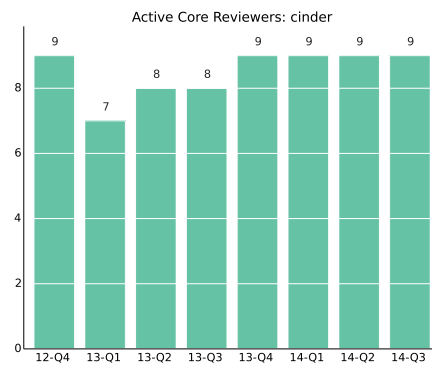
Period	Active Core
12-Q4	9
13-Q1	7
13-Q2	8
13-Q3	8
13-Q4	9
14-Q1	9
14-Q2	9
14-Q3	9

Authors cinder
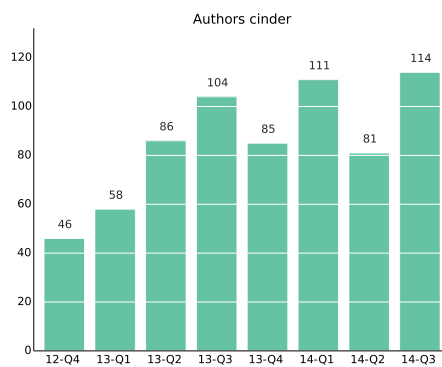
Period	Authors
12-Q4	46
13-Q1	58
13-Q2	86
13-Q3	104
13-Q4	85
14-Q1	111
14-Q2	81
14-Q3	114

Commit (s)	Author	Commit (s)	Organizations
32	John Griffith	48	IBM
19	Jay Bryant	32	SolidFire
19	Vipin Balachandran	26	HP
15	Zhiteng Huang	19	Red Hat
11	Xing Yang	19	VMware
9	Eric Harney	16	Intel
8	vishvananda	15	EMC
7	e0ne	11	Mirantis
6	Mark Sturdevant	11	NetApp
5	git-harry	8	Nebula

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: cinder
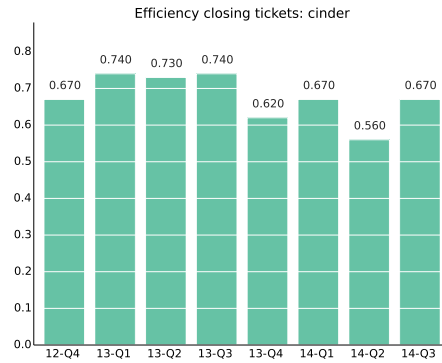
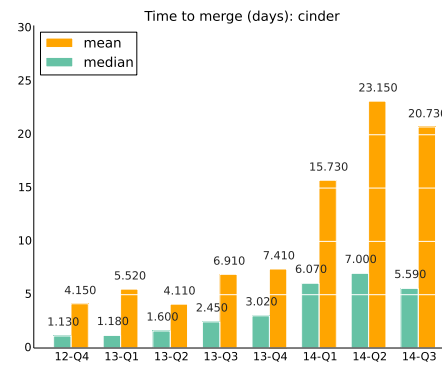| Period	Closed/Opened
12-Q4	0.67
13-Q1	0.74
13-Q2	0.73
13-Q3	0.74
13-Q4	0.62
14-Q1	0.67
14-Q2	0.56
14-Q3	0.67

Changesets efficiency cinder
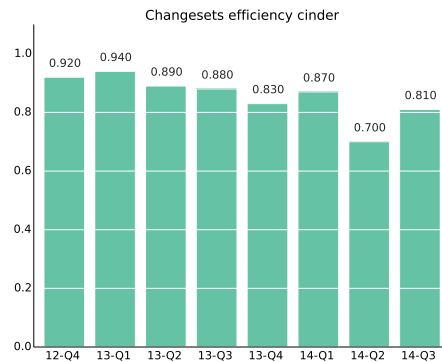
Period	Closed/Opened
12-Q4	0.92
13-Q1	0.94
13-Q2	0.89
13-Q3	0.88
13-Q4	0.83
14-Q1	0.87
14-Q2	0.7
14-Q3	0.81

Time to merge (days): cinder

Period	Median	Mean
12-Q4	1.13	4.15
13-Q1	1.18	5.52
13-Q2	1.6	4.11
13-Q3	2.45	6.91
13-Q4	3.02	7.41
14-Q1	6.07	15.73
14-Q2	7.0	23.15
14-Q3	5.59	20.73

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Patchsets per Changeset: cinder
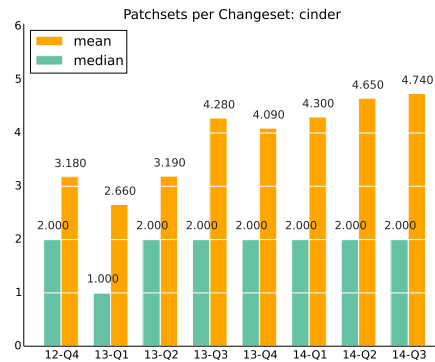
Period	Median	Mean
12-Q4	2.0	3.18
13-Q1	1.0	2.66
13-Q2	2.0	3.19
13-Q3	2.0	4.28
13-Q4	2.0	4.09
14-Q1	2.0	4.3
14-Q2	2.0	4.65
14-Q3	2.0	4.74

Time waiting for the reviewer: cinder
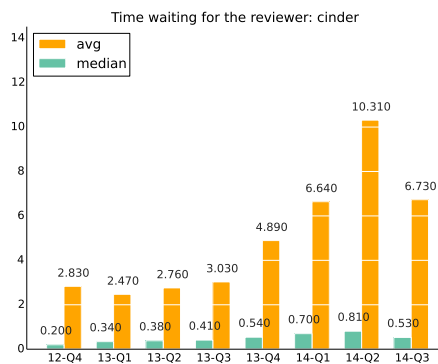
Period	Median	Mean
12-Q4	0.2	2.83
13-Q1	0.34	2.47
13-Q2	0.38	2.76
13-Q3	0.41	3.03
13-Q4	0.54	4.89
14-Q1	0.7	6.64
14-Q2	0.81	10.31
14-Q3	0.53	6.73

Time waiting for the submitter: cinder
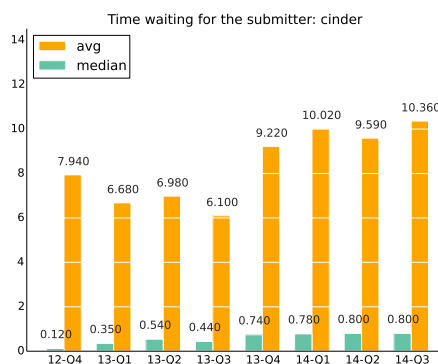
Period	Median	Mean
12-Q4	0.12	7.94
13-Q1	0.35	6.68
13-Q2	0.54	6.98
13-Q3	0.44	6.1
13-Q4	0.74	9.22
14-Q1	0.78	10.02
14-Q2	0.8	9.59
14-Q3	0.8	10.36

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2.1.1.3 Glance

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: glance
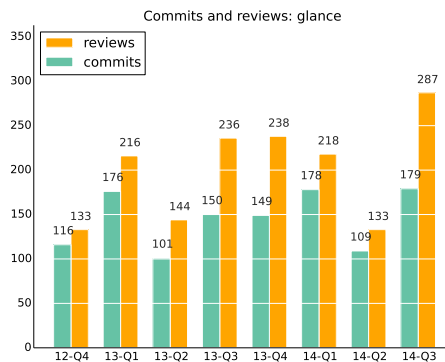
Period	Commits	Reviews
12-Q4	116	133
13-Q1	176	216
13-Q2	101	144
13-Q3	150	236
13-Q4	149	238
14-Q1	178	218
14-Q2	109	133
14-Q3	179	287

Opened and closed tickets: glance
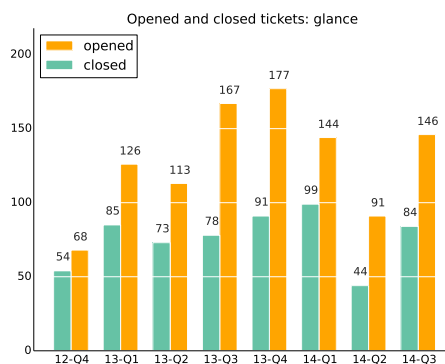
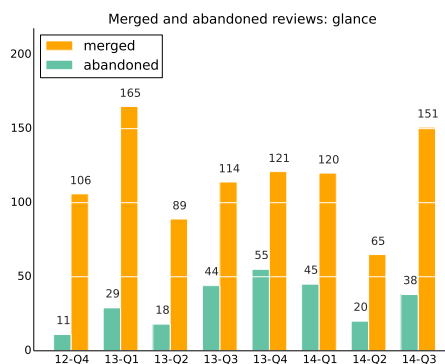| Period	Closed	Opened
12-Q4	54	68
13-Q1	85	126
13-Q2	73	113
13-Q3	78	167
13-Q4	91	177
14-Q1	99	144
14-Q2	44	91
14-Q3	84	146

Merged and abandoned reviews: glance

Period	Merged	Abandoned
12-Q4	106	11
13-Q1	165	29
13-Q2	89	18
13-Q3	114	44
13-Q4	121	55
14-Q1	120	45
14-Q2	65	20
14-Q3	151	38

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: glance
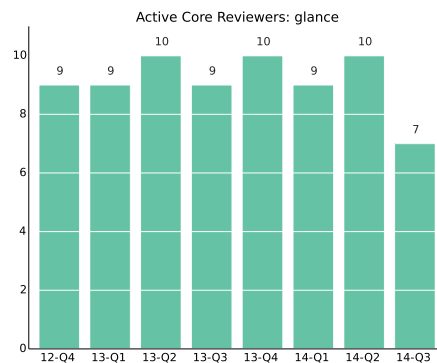
Period	Active Core
12-Q4	9
13-Q1	9
13-Q2	10
13-Q3	9
13-Q4	10
14-Q1	9
14-Q2	10
14-Q3	7

Authors glance
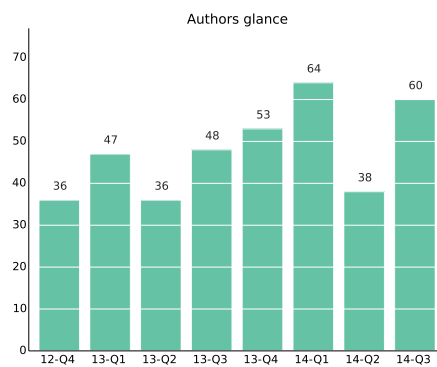
Period	Authors
12-Q4	36
13-Q1	47
13-Q2	36
13-Q3	48
13-Q4	53
14-Q1	64
14-Q2	38
14-Q3	60

Commit (s)	Author	Commit (s)	Organizations
37	Flavio Percoco	41	Red Hat
23	Zhi Yan Liu	30	IBM
8	Arnaud Legendre	24	HP
8	Louis Taylor	18	Mirantis
8	Travis Tripp	11	Rackspace
7	Oleksii Chuprykov	8	Intel
5	Andreas Jaeger	8	VMware
5	Nikhil Komawar	6	Canonical
4	Boris Pavlovic	5	SUSE
4	Stuart McLaren	3	NTT

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: glance

Period	Closed/Opened
12-Q4	0.79
13-Q1	0.67
13-Q2	0.65
13-Q3	0.47
13-Q4	0.51
14-Q1	0.69
14-Q2	0.48
14-Q3	0.58

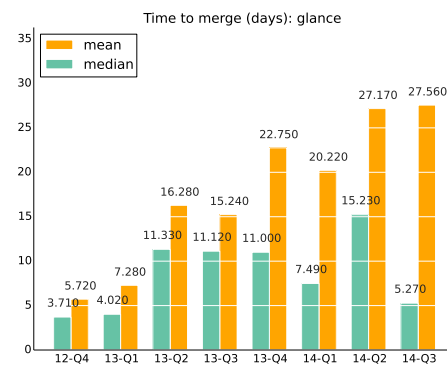Changesets efficiency glance
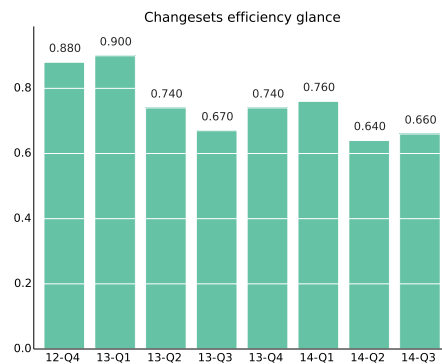
Period	Closed/Opened
12-Q4	0.88
13-Q1	0.9
13-Q2	0.74
13-Q3	0.67
13-Q4	0.74
14-Q1	0.76
14-Q2	0.64
14-Q3	0.66

Time to merge (days): glance

Period	Median	Mean
12-Q4	3.71	5.72
13-Q1	4.02	7.28
13-Q2	11.33	16.28
13-Q3	11.12	15.24
13-Q4	11.0	22.75
14-Q1	7.49	20.22
14-Q2	15.23	27.17
14-Q3	5.27	27.56

Patchsets per Changeset: glance
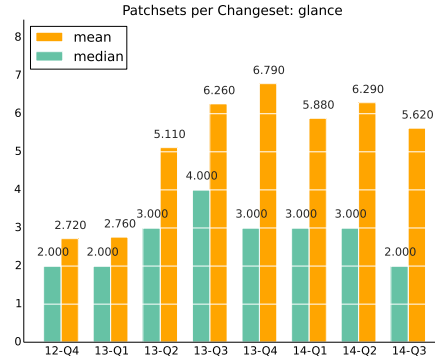
Period	Median	Mean
12-Q4	2.0	2.72
13-Q1	2.0	2.76
13-Q2	3.0	5.11
13-Q3	4.0	6.26
13-Q4	3.0	6.79
14-Q1	3.0	5.88
14-Q2	3.0	6.29
14-Q3	2.0	5.62

Time waiting for the reviewer: glance
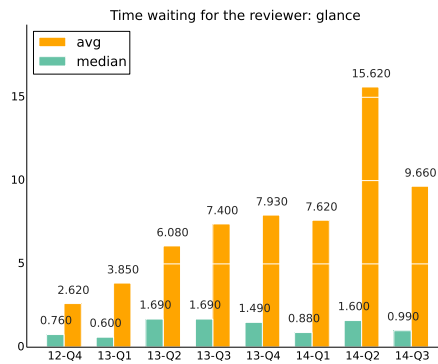
Period	Median	Mean
12-Q4	0.76	2.62
13-Q1	0.6	3.85
13-Q2	1.69	6.08
13-Q3	1.69	7.4
13-Q4	1.49	7.93
14-Q1	0.88	7.62
14-Q2	1.6	15.62
14-Q3	0.99	9.66

Time waiting for the submitter: glance
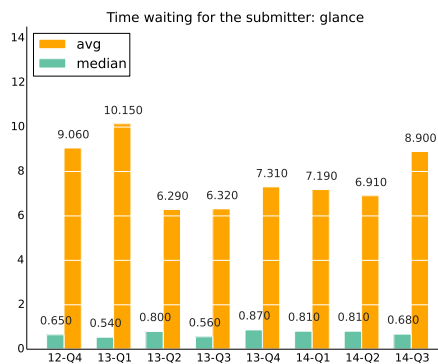
Period	Median	Mean
12-Q4	0.65	9.06
13-Q1	0.54	10.15
13-Q2	0.8	6.29
13-Q3	0.56	6.32
13-Q4	0.87	7.31
14-Q1	0.81	7.19
14-Q2	0.81	6.91
14-Q3	0.68	8.9

2.1.1.4 Heat

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: heat
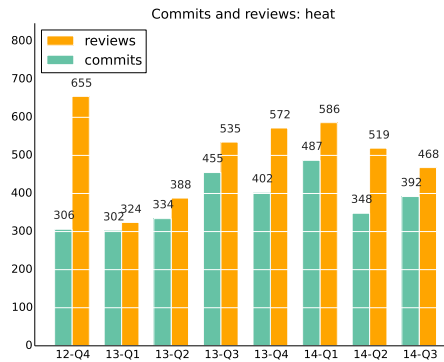
Period	Commits	Reviews
12-Q4	306	655
13-Q1	302	324
13-Q2	334	388
13-Q3	455	535
13-Q4	402	572
14-Q1	487	586
14-Q2	348	519
14-Q3	392	468

Opened and closed tickets: heat
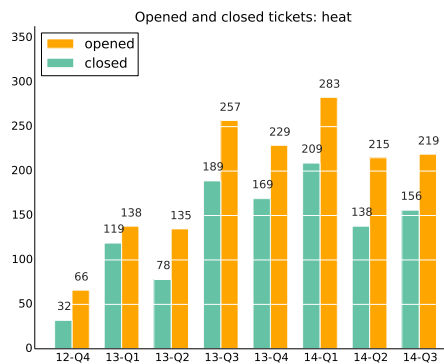
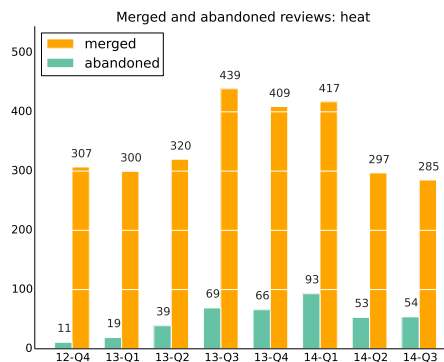| Period	Closed	Opened
12-Q4	32	66
13-Q1	119	138
13-Q2	78	135
13-Q3	189	257
13-Q4	169	229
14-Q1	209	283
14-Q2	138	215
14-Q3	156	219

Merged and abandoned reviews: heat

Period	Merged	Abandoned
12-Q4	307	11
13-Q1	300	19
13-Q2	320	39
13-Q3	439	69
13-Q4	409	66
14-Q1	417	93
14-Q2	297	53
14-Q3	285	54

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: heat
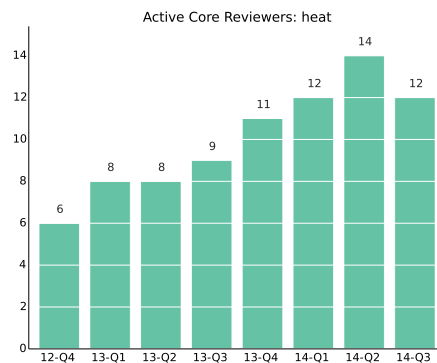
Period	Active Core
12-Q4	6
13-Q1	8
13-Q2	8
13-Q3	9
13-Q4	11
14-Q1	12
14-Q2	14
14-Q3	12

Authors heat
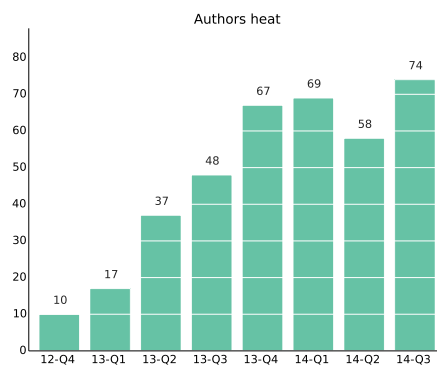
Period	Authors
12-Q4	10
13-Q1	17
13-Q2	37
13-Q3	48
13-Q4	67
14-Q1	69
14-Q2	58
14-Q3	74

Commit (s)	Author	Commit (s)	Organizations
59	Steve Baker	170	Red Hat
48	Steven Hardy	53	Mirantis
29	Pavlo Shchelokovskyy	53	Rackspace
27	Zane Bitter	34	Huawei
23	Tianhua Huang	31	IBM
16	Sergey Kraynev	14	HP
15	Angus Salkeld	9	NTT
15	Thomas Herve	3	Objectif-libre
12	Randall Burt	3	SUSE
11	Ethan Lynn	2	B1 Systems

Process: Efficiency closing changesets and tickets, time to review (mean

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and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: heat

Period	Closed/Opened
12-Q4	0.48
13-Q1	0.86
13-Q2	0.58
13-Q3	0.74
13-Q4	0.74
14-Q1	0.74
14-Q2	0.64
14-Q3	0.71

Changesets efficiency heat
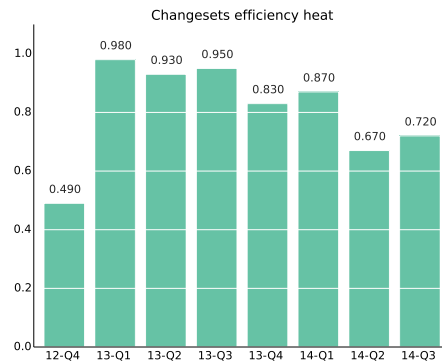
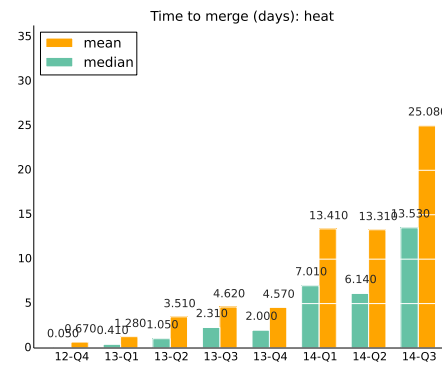| Period	Closed/Opened
12-Q4	0.49
13-Q1	0.98
13-Q2	0.93
13-Q3	0.95
13-Q4	0.83
14-Q1	0.87
14-Q2	0.67
14-Q3	0.72

Time to merge (days): heat

Period	Median	Mean
12-Q4	0.05	0.67
13-Q1	0.41	1.28
13-Q2	1.05	3.51
13-Q3	2.31	4.62
13-Q4	2.0	4.57
14-Q1	7.01	13.41
14-Q2	6.14	13.31
14-Q3	13.53	25.08

Bitergia

Patchsets per Changeset: heat
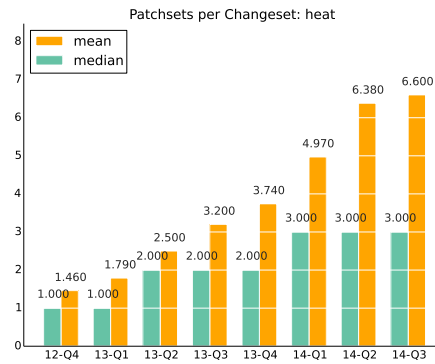
Period	Median	Mean
12-Q4	1.0	1.46
13-Q1	1.0	1.79
13-Q2	2.0	2.5
13-Q3	2.0	3.2
13-Q4	2.0	3.74
14-Q1	3.0	4.97
14-Q2	3.0	6.38
14-Q3	3.0	6.59

Time waiting for the reviewer: heat
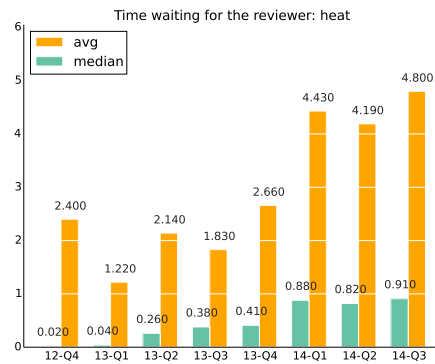
Period	Median	Mean
12-Q4	0.02	2.4
13-Q1	0.04	1.22
13-Q2	0.26	2.14
13-Q3	0.38	1.83
13-Q4	0.41	2.66
14-Q1	0.88	4.43
14-Q2	0.82	4.19
14-Q3	0.91	4.8

Time waiting for the submitter: heat
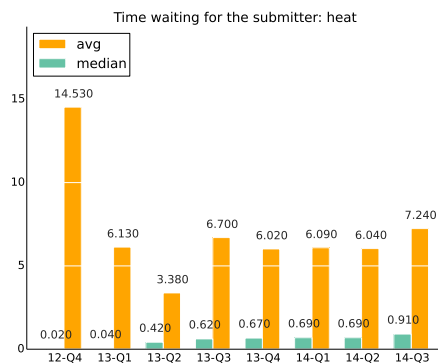
Period	Median	Mean
12-Q4	0.02	14.53
13-Q1	0.04	6.13
13-Q2	0.42	3.38
13-Q3	0.62	6.7
13-Q4	0.67	6.02
14-Q1	0.69	6.09
14-Q2	0.69	6.04
14-Q3	0.91	7.24

2.1.1.5 Horizon

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: horizon
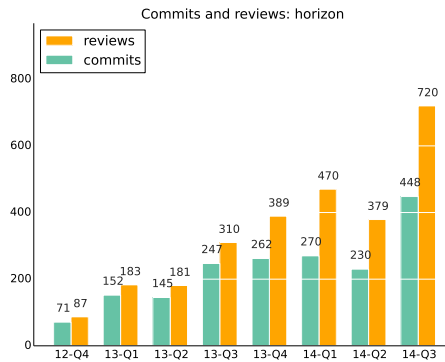
Period	Commits	Reviews
12-Q4	71	87
13-Q1	152	183
13-Q2	145	181
13-Q3	247	310
13-Q4	262	389
14-Q1	270	470
14-Q2	230	379
14-Q3	448	720

Opened and closed tickets: horizon
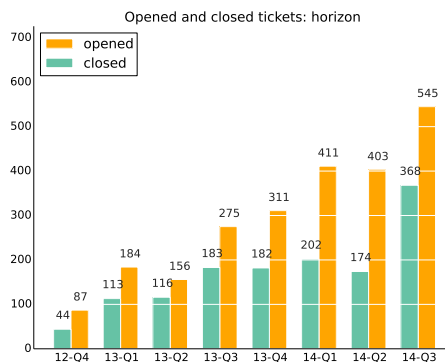
Period	Closed	Opened
12-Q4	44	87
13-Q1	113	184
13-Q2	116	156
13-Q3	183	275
13-Q4	182	311
14-Q1	202	411
14-Q2	174	403
14-Q3	368	545

Merged and abandoned reviews: horizon
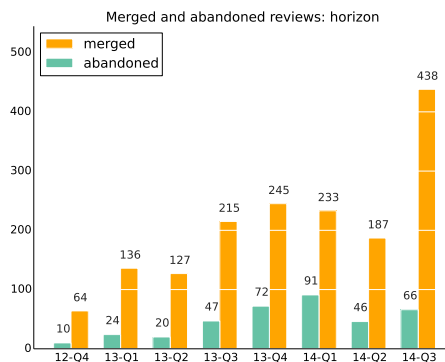
Period	Merged	Abandoned
12-Q4	64	10
13-Q1	136	24
13-Q2	127	20
13-Q3	215	47
13-Q4	245	72
14-Q1	233	91
14-Q2	187	46
14-Q3	438	66

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: horizon
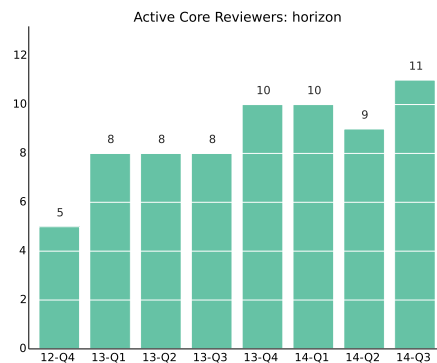
Period	Active Core
12-Q4	5
13-Q1	8
13-Q2	8
13-Q3	8
13-Q4	10
14-Q1	10
14-Q2	9
14-Q3	11

Authors horizon
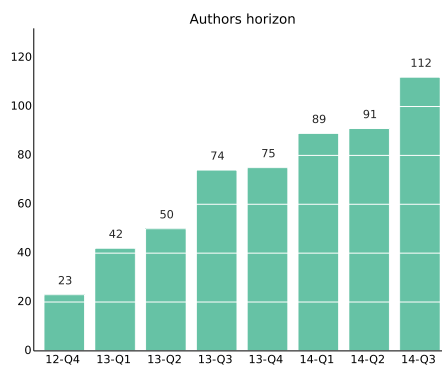
Period	Authors
12-Q4	23
13-Q1	42
13-Q2	50
13-Q3	74
13-Q4	75
14-Q1	89
14-Q2	91
14-Q3	112

Commit (s)	Author	Commit (s)	Organizations
30	Akihiro MOTOKI	83	Red Hat
21	Chad Roberts	77	IBM
21	Cindy Lu	67	HP
18	Doug Fish	30	NEC
17	Andrew Bramley	26	Mirantis
16	Radomir Dopieralski	19	Cisco Systems
15	Sam Betts	17	Tesora
14	Julie Pichon	14	Intel
13	Tatiana Ovchinnikova	11	Kylin OS Co.
12	Justin Pomeroy	8	Cloudwatt

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: horizon
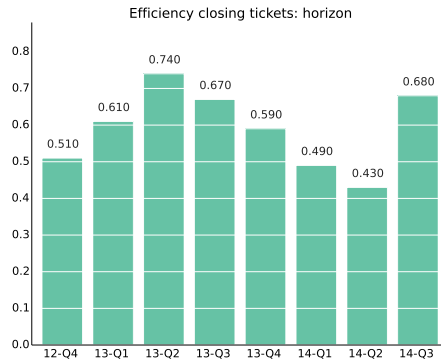
Period	Closed/Opened
12-Q4	0.51
13-Q1	0.61
13-Q2	0.74
13-Q3	0.67
13-Q4	0.59
14-Q1	0.49
14-Q2	0.43
14-Q3	0.68

Changesets efficiency horizon
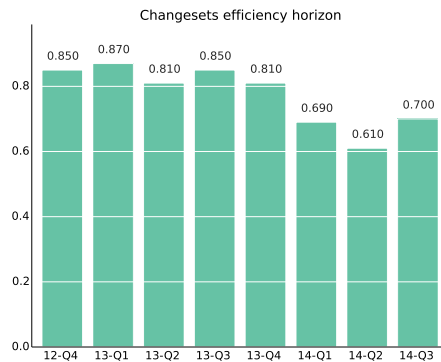
Period	Closed/Opened
12-Q4	0.85
13-Q1	0.87
13-Q2	0.81
13-Q3	0.85
13-Q4	0.81
14-Q1	0.69
14-Q2	0.61
14-Q3	0.7

Time to merge (days): horizon
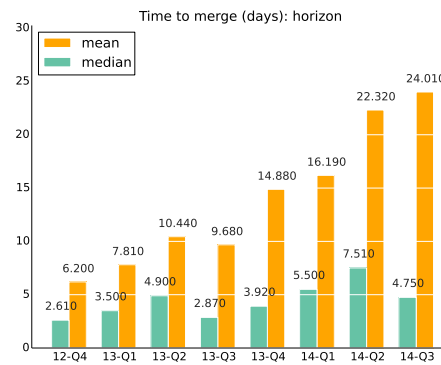
Period	Median	Mean
12-Q4	2.61	6.2
13-Q1	3.5	7.81
13-Q2	4.9	10.44
13-Q3	2.87	9.68
13-Q4	3.92	14.88
14-Q1	5.5	16.19
14-Q2	7.51	22.32
14-Q3	4.75	24.01

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Patchsets per Changeset: horizon
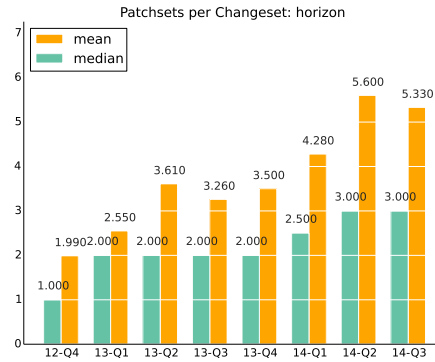
Period	Median	Mean
12-Q4	1.0	1.99
13-Q1	2.0	2.55
13-Q2	2.0	3.61
13-Q3	2.0	3.26
13-Q4	2.0	3.5
14-Q1	2.5	4.28
14-Q2	3.0	5.6
14-Q3	3.0	5.32

Time waiting for the reviewer: horizon
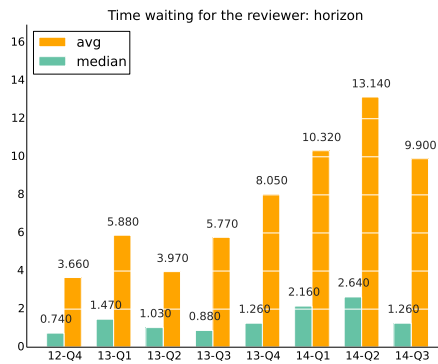
Period	Median	Mean
12-Q4	0.74	3.66
13-Q1	1.47	5.88
13-Q2	1.03	3.97
13-Q3	0.88	5.77
13-Q4	1.26	8.05
14-Q1	2.16	10.32
14-Q2	2.64	13.14
14-Q3	1.26	9.9

Time waiting for the submitter: horizon
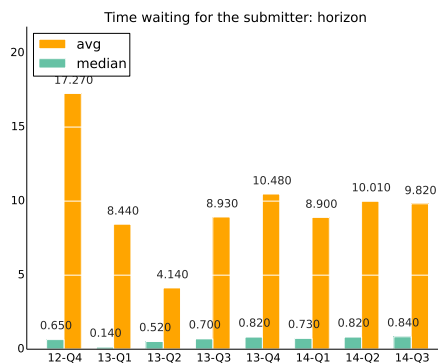
Period	Median	Mean
12-Q4	0.65	17.27
13-Q1	0.14	8.44
13-Q2	0.52	4.14
13-Q3	0.7	8.93
13-Q4	0.82	10.48
14-Q1	0.73	8.9
14-Q2	0.82	10.01
14-Q3	0.84	9.82

2.1.1.6 Keystone

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
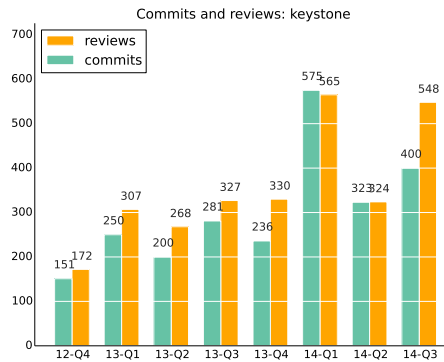
Period	Commits	Reviews
12-Q4	151	172
13-Q1	250	307
13-Q2	200	268
13-Q3	281	327
13-Q4	236	330
14-Q1	575	565
14-Q2	323	324
14-Q3	400	548
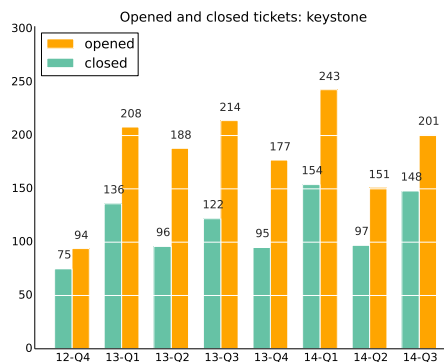
Period	Closed	Opened
12-Q4	75	94
13-Q1	136	208
13-Q2	96	188
13-Q3	122	214
13-Q4	95	177
14-Q1	154	243
14-Q2	97	151
14-Q3	148	201
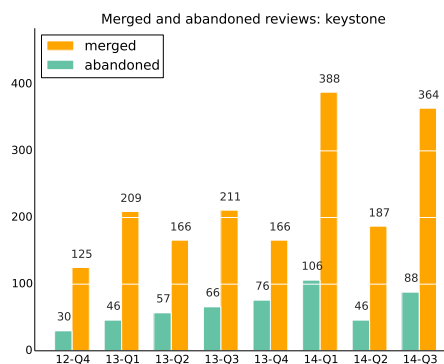
Period	Merged	Abandoned
12-Q4	125	30
13-Q1	209	46
13-Q2	166	57
13-Q3	211	66
13-Q4	166	76
14-Q1	388	106
14-Q2	187	46
14-Q3	364	88

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: keystone
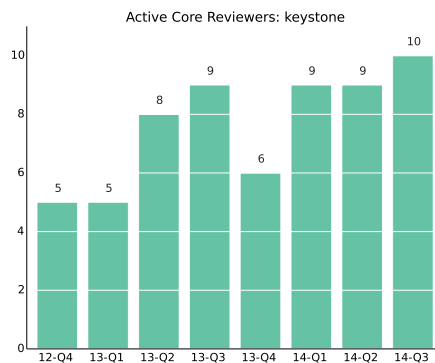
Period	Active Core
12-Q4	5
13-Q1	5
13-Q2	8
13-Q3	9
13-Q4	6
14-Q1	9
14-Q2	9
14-Q3	10

Authors keystone
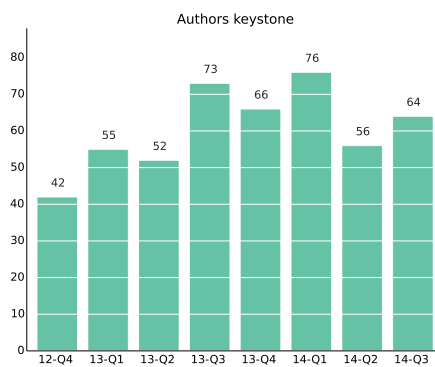
Period	Authors
12-Q4	42
13-Q1	55
13-Q2	52
13-Q3	73
13-Q4	66
14-Q1	76
14-Q2	56
14-Q3	64

Commit (s)	Author	Commit (s)	Organizations
81	Brant Knudson	155	IBM
60	Morgan Fainberg	60	Metacloud
42	Steve Martinelli	58	Rackspace
35	David Stanek	47	Red Hat
21	Dolph Mathews	16	CERN
19	Jamie Lennox	11	HP
16	Henry Nash	8	Huawei
16	Marek Denis	6	Mirantis
11	Lance Bragstad	4	Ericsson
11	Nathan Kinder	3	Cisco Systems

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: keystone

Period	Closed/Opened
12-Q4	0.8
13-Q1	0.65
13-Q2	0.51
13-Q3	0.57
13-Q4	0.54
14-Q1	0.63
14-Q2	0.64
14-Q3	0.74

Changesets efficiency keystone
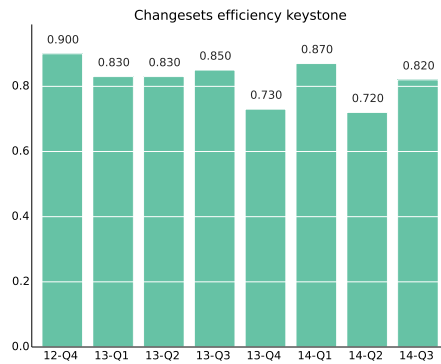
Period	Closed/Opened
12-Q4	0.9
13-Q1	0.83
13-Q2	0.83
13-Q3	0.85
13-Q4	0.73
14-Q1	0.87
14-Q2	0.72
14-Q3	0.82

Time to merge (days): keystone
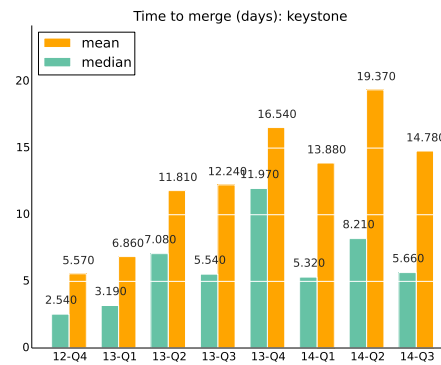
Period	Median	Mean
12-Q4	2.54	5.57
13-Q1	3.19	6.86
13-Q2	7.08	11.81
13-Q3	5.54	12.24
13-Q4	11.97	16.54
14-Q1	5.32	13.88
14-Q2	8.21	19.37
14-Q3	5.66	14.78

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Bitergia

Patchsets per Changeset: keystone
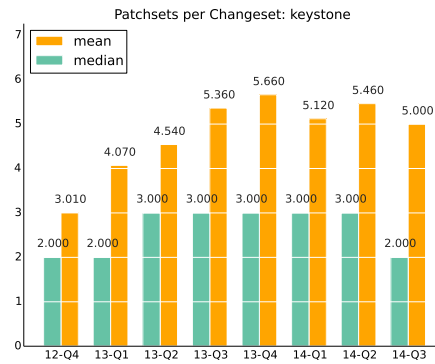
Period	Median	Mean
12-Q4	2.0	3.01
13-Q1	2.0	4.07
13-Q2	3.0	4.54
13-Q3	3.0	5.36
13-Q4	3.0	5.66
14-Q1	3.0	5.12
14-Q2	3.0	5.46
14-Q3	2.0	5.0

Time waiting for the reviewer: keystone
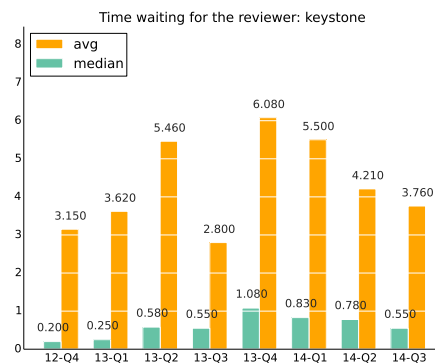
Period	Median	Mean
12-Q4	0.2	3.15
13-Q1	0.25	3.62
13-Q2	0.58	5.46
13-Q3	0.55	2.8
13-Q4	1.08	6.08
14-Q1	0.83	5.5
14-Q2	0.78	4.21
14-Q3	0.55	3.76

Time waiting for the submitter: keystone
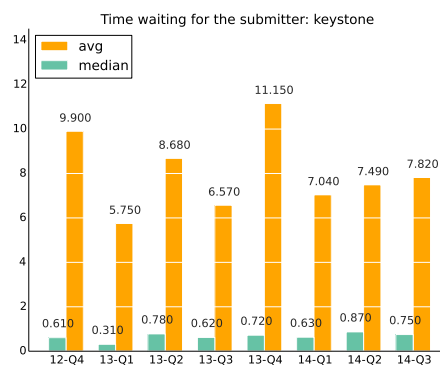
Period	Median	Mean
12-Q4	0.61	9.9
13-Q1	0.31	5.75
13-Q2	0.78	8.68
13-Q3	0.62	6.57
13-Q4	0.72	11.15
14-Q1	0.63	7.04
14-Q2	0.87	7.49
14-Q3	0.75	7.82

2.1.1.7 Neutron

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
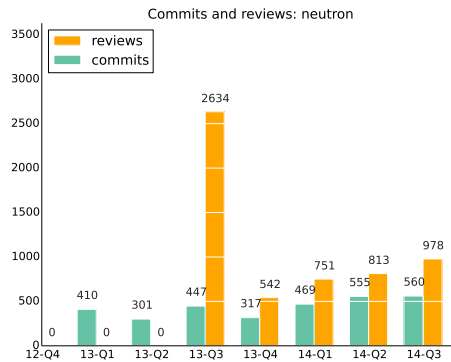
Period	Commits	Reviews
12-Q4	257	0
13-Q1	410	0
13-Q2	301	0
13-Q3	447	2634
13-Q4	317	542
14-Q1	469	751
14-Q2	555	813
14-Q3	559	978
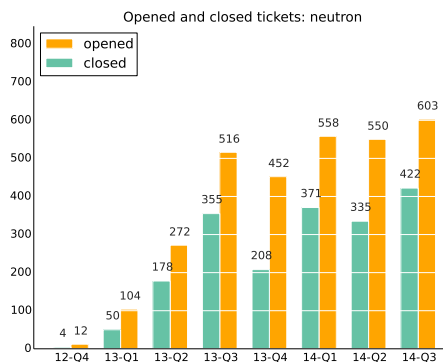
Period	Closed	Opened
12-Q4	4	12
13-Q1	50	104
13-Q2	178	272
13-Q3	355	516
13-Q4	208	452
14-Q1	371	558
14-Q2	335	550
14-Q3	422	603
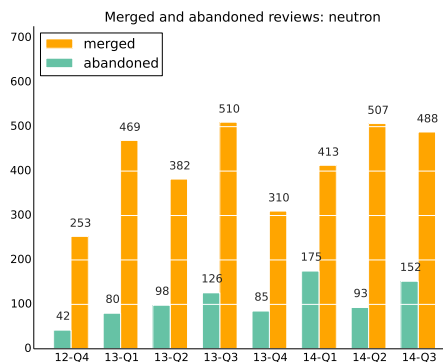
Period	Merged	Abandoned
12-Q4	253	42
13-Q1	469	80
13-Q2	382	98
13-Q3	510	126
13-Q4	310	85
14-Q1	413	175
14-Q2	507	93
14-Q3	488	152

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: neutron
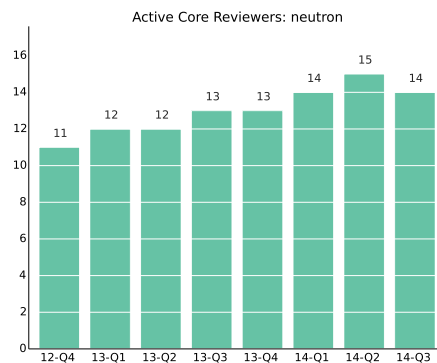
Period	Active Core
12-Q4	11
13-Q1	12
13-Q2	12
13-Q3	13
13-Q4	13
14-Q1	14
14-Q2	15
14-Q3	14

Authors neutron
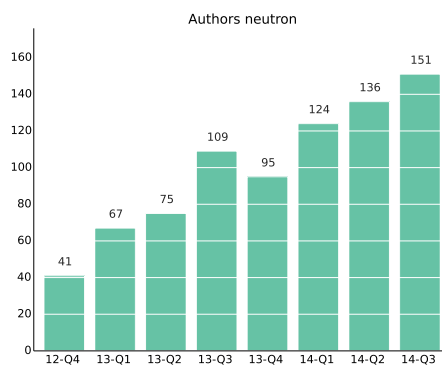
Period	Authors
12-Q4	41
13-Q1	67
13-Q2	75
13-Q3	109
13-Q4	95
14-Q1	124
14-Q2	136
14-Q3	150

Commit (s)	Author	Commit (s)	Organizations
44	Kevin Benton	72	Red Hat
31	Armando Migliaccio	64	Cisco Systems
28	YAMAMOTO Takashi	61	HP
26	Salvatore Orlando	49	VMware
16	arosen	44	Bit Switch Networks
16	cedric.brandily	44	Mirantis
14	Assaf Muller	32	VA Linux
14	Maru Newby	31	Internap
13	Ann Kamyshnikova	31	Nicira
13	Carl Baldwin	10	IBM

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: neutron

Period	Closed/Opened
12-Q4	0.33
13-Q1	0.48
13-Q2	0.65
13-Q3	0.69
13-Q4	0.46
14-Q1	0.66
14-Q2	0.61
14-Q3	0.7

Changesets efficiency neutron
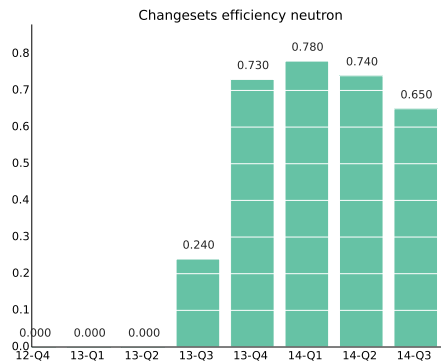
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.0
13-Q3	0.24
13-Q4	0.73
14-Q1	0.78
14-Q2	0.74
14-Q3	0.65

Time to merge (days): neutron
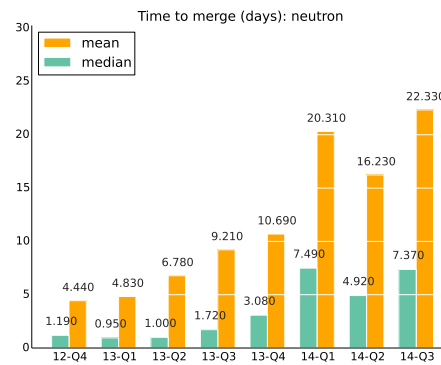
Period	Median	Mean
12-Q4	1.19	4.44
13-Q1	0.95	4.83
13-Q2	1.0	6.78
13-Q3	1.72	9.21
13-Q4	3.08	10.69
14-Q1	7.49	20.31
14-Q2	4.92	16.23
14-Q3	7.37	22.33

Bitergia

Patchsets per Changeset: neutron
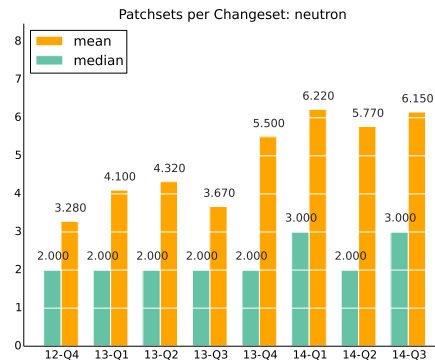
Period	Median	Mean
12-Q4	2.0	3.28
13-Q1	2.0	4.1
13-Q2	2.0	4.32
13-Q3	2.0	3.67
13-Q4	2.0	5.5
14-Q1	3.0	6.22
14-Q2	2.0	5.77
14-Q3	3.0	6.14

Time waiting for the reviewer: neutron
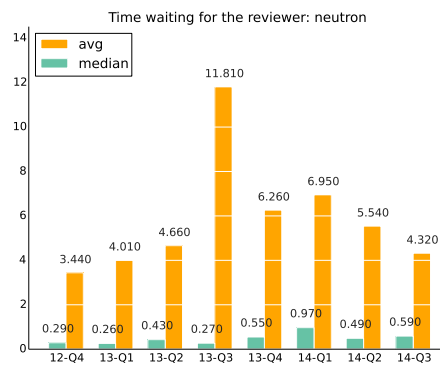
Period	Median	Mean
12-Q4	0.29	3.44
13-Q1	0.26	4.01
13-Q2	0.43	4.66
13-Q3	0.27	11.81
13-Q4	0.55	6.26
14-Q1	0.97	6.95
14-Q2	0.49	5.54
14-Q3	0.59	4.32

Time waiting for the submitter: neutron
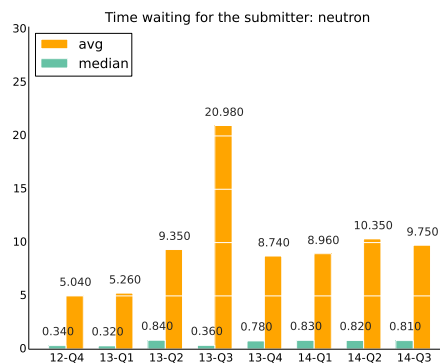
Period	Median	Mean
12-Q4	0.34	5.04
13-Q1	0.32	5.26
13-Q2	0.84	9.35
13-Q3	0.36	20.98
13-Q4	0.78	8.74
14-Q1	0.83	8.96
14-Q2	0.82	10.35
14-Q3	0.81	9.75

2.1.1.8 Nova

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
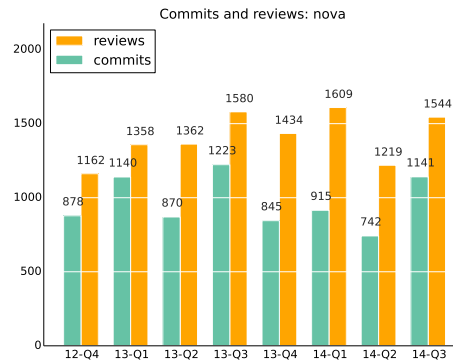
Period	Commits	Reviews
12-Q4	878	1162
13-Q1	1140	1358
13-Q2	870	1362
13-Q3	1223	1580
13-Q4	845	1434
14-Q1	915	1609
14-Q2	742	1219
14-Q3	1141	1544
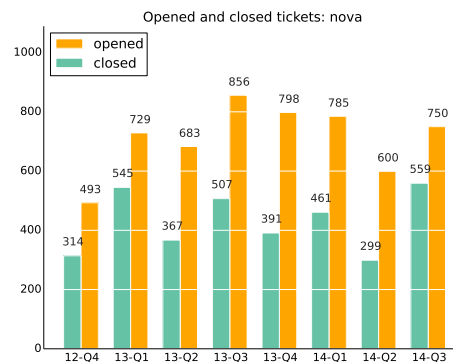
Period	Closed	Opened
12-Q4	314	493
13-Q1	545	729
13-Q2	367	683
13-Q3	507	856
13-Q4	391	798
14-Q1	461	785
14-Q2	299	600
14-Q3	559	750
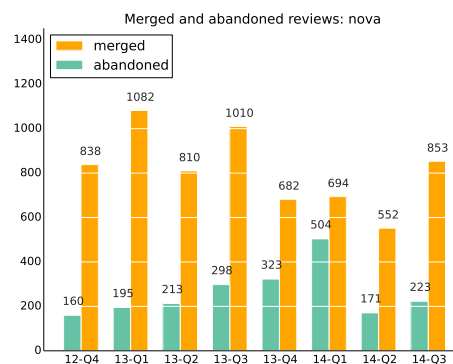
Period	Merged	Abandoned
12-Q4	838	160
13-Q1	1082	195
13-Q2	810	213
13-Q3	1010	298
13-Q4	682	323
14-Q1	694	504
14-Q2	552	171
14-Q3	853	223

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: nova
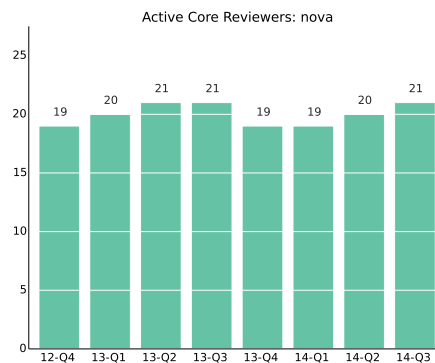
Period	Active Core
12-Q4	19
13-Q1	20
13-Q2	21
13-Q3	21
13-Q4	19
14-Q1	19
14-Q2	20
14-Q3	21

Authors nova

Period	Authors
12-Q4	129
13-Q1	169
13-Q2	161
13-Q3	214
13-Q4	169
14-Q1	194
14-Q2	161
14-Q3	208

Commit (s)	Author	Commit (s)	Organizations
61	garyk	329	IBM
59	Daniel P. Berrange	198	Red Hat
54	Dan Smith	100	HP
49	Matt Riedemann	96	VMware
44	jichen	89	NEC
43	Ken'ichi Ohmichi	70	Rackspace
40	Chris Yeoh	61	Radware
33	Davanum Srinivas	41	Cloudbase Solutions
31	He Jie Xu	26	Intel
31	Nikola Dipanov	25	Mirantis

Process: Efficiency closing changesets and tickets, time to review (mean

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and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: nova

Period	Closed/Opened
12-Q4	0.64
13-Q1	0.75
13-Q2	0.54
13-Q3	0.59
13-Q4	0.49
14-Q1	0.59
14-Q2	0.5
14-Q3	0.75

Changesets efficiency nova
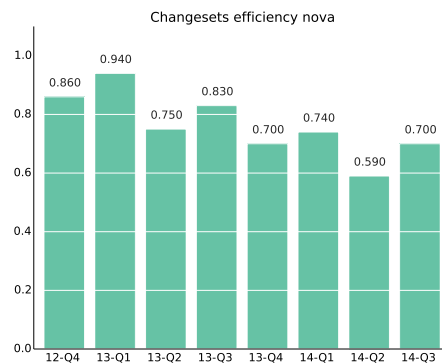
Period	Closed/Opened
12-Q4	0.86
13-Q1	0.94
13-Q2	0.75
13-Q3	0.83
13-Q4	0.7
14-Q1	0.74
14-Q2	0.59
14-Q3	0.7

Time to merge (days): nova
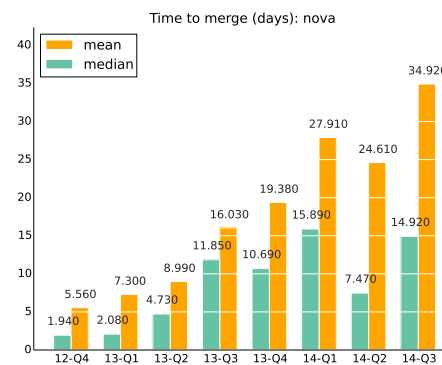
Period	Median	Mean
12-Q4	1.94	5.56
13-Q1	2.08	7.3
13-Q2	4.73	8.99
13-Q3	11.85	16.03
13-Q4	10.69	19.38
14-Q1	15.89	27.91
14-Q2	7.47	24.61
14-Q3	14.92	34.92

Biptergia

Patchsets per Changeset: nova
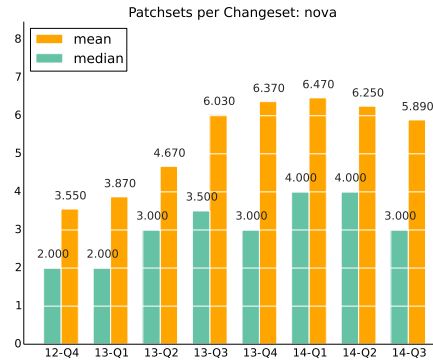
Period	Median	Mean
12-Q4	2.0	3.55
13-Q1	2.0	3.87
13-Q2	3.0	4.67
13-Q3	3.5	6.03
13-Q4	3.0	6.37
14-Q1	4.0	6.47
14-Q2	4.0	6.25
14-Q3	3.0	5.88

Time waiting for the reviewer: nova
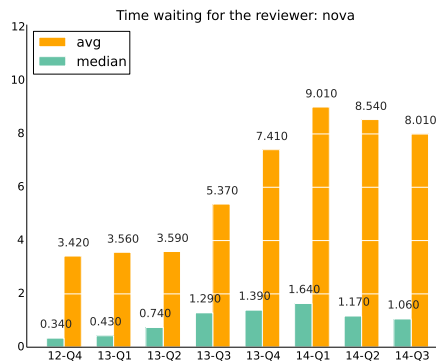
Period	Median	Mean
12-Q4	0.34	3.42
13-Q1	0.43	3.56
13-Q2	0.74	3.59
13-Q3	1.29	5.37
13-Q4	1.39	7.41
14-Q1	1.64	9.01
14-Q2	1.17	8.54
14-Q3	1.06	8.01

Time waiting for the submitter: nova
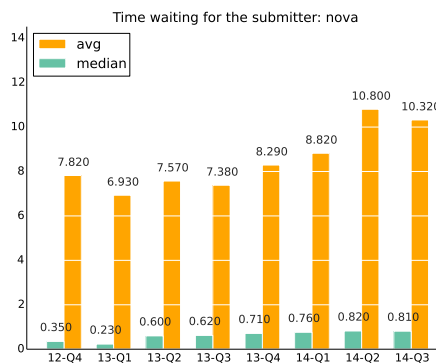
Period	Median	Mean
12-Q4	0.35	7.82
13-Q1	0.23	6.93
13-Q2	0.6	7.57
13-Q3	0.62	7.38
13-Q4	0.71	8.29
14-Q1	0.76	8.82
14-Q2	0.82	10.8
14-Q3	0.81	10.32

2.1.1.9 Sahara

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: sahara
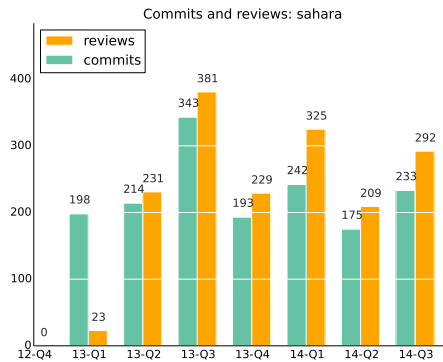
Period	Commits	Reviews
12-Q4	0	0
13-Q1	198	23
13-Q2	214	231
13-Q3	343	381
13-Q4	193	229
14-Q1	242	325
14-Q2	175	209
14-Q3	233	292

Opened and closed tickets: sahara
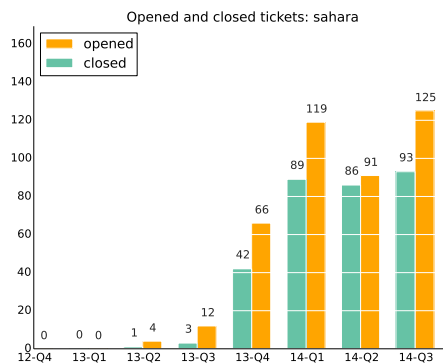
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	1	4
13-Q3	3	12
13-Q4	42	66
14-Q1	89	119
14-Q2	86	91
14-Q3	93	125

Merged and abandoned reviews: sahara
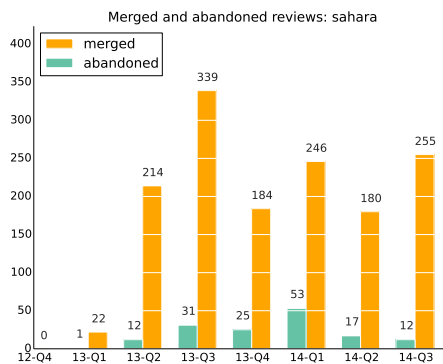
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	22	1
13-Q2	214	12
13-Q3	339	31
13-Q4	184	25
14-Q1	246	53
14-Q2	180	17
14-Q3	255	12

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: sahara
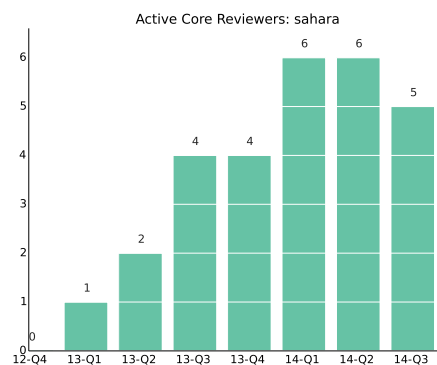
Period	Active Core
12-Q4	0
13-Q1	1
13-Q2	2
13-Q3	4
13-Q4	4
14-Q1	6
14-Q2	6
14-Q3	5

Authors sahara
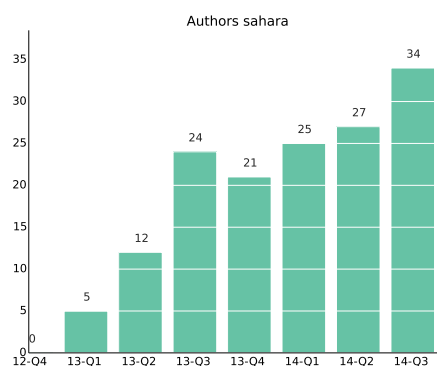
Period	Authors
12-Q4	0
13-Q1	5
13-Q2	12
13-Q3	24
13-Q4	21
14-Q1	25
14-Q2	27
14-Q3	34

Commit (s)	Author	Commit (s)	Organizations
53	Andrew Lazarev	156	Mirantis
42	Sergey Reshetnyak	52	Red Hat
28	Sergey Lukjanov	11	Cloudscaling
26	Matthew Farrellee	2	B1 Systems
15	Michael McCune	2	Cisco Systems
12	Vitaly Gridnev	2	Hortonworks
11	Andrey Pavlov	2	HP
7	Trevor McKay	2	NTT
6	dmitryme	2	Numergy
3	Chad Roberts	1	99cloud

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: sahara

Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0.25
13-Q3	0.25
13-Q4	0.64
14-Q1	0.75
14-Q2	0.95
14-Q3	0.74

Changesets efficiency sahara
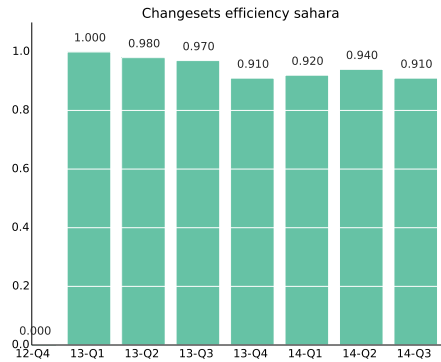
Period	Closed/Opened
12-Q4	0.0
13-Q1	1.0
13-Q2	0.98
13-Q3	0.97
13-Q4	0.91
14-Q1	0.92
14-Q2	0.94
14-Q3	0.91

Time to merge (days): sahara
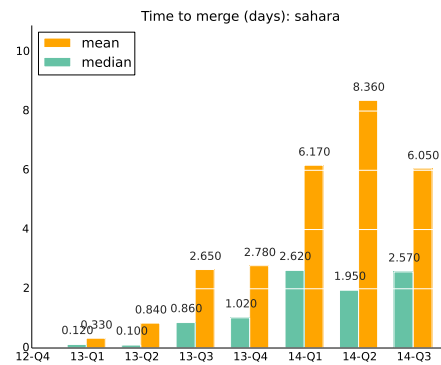
Period	Median	Mean
12-Q4	nan	nan
13-Q1	0.12	0.33
13-Q2	0.1	0.84
13-Q3	0.86	2.65
13-Q4	1.02	2.78
14-Q1	2.62	6.17
14-Q2	1.95	8.36
14-Q3	2.57	6.05

Patchsets per Changeset: sahara
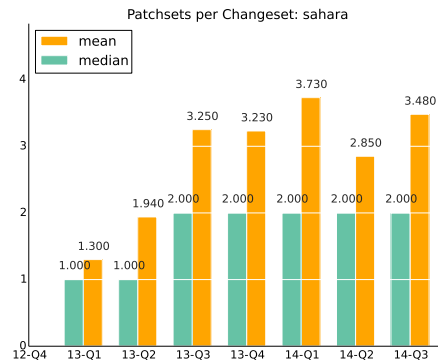
Period	Median	Mean
12-Q4	nan	nan
13-Q1	1.0	1.3
13-Q2	1.0	1.94
13-Q3	2.0	3.25
13-Q4	2.0	3.23
14-Q1	2.0	3.73
14-Q2	2.0	2.85
14-Q3	2.0	3.47

Time waiting for the reviewer: sahara
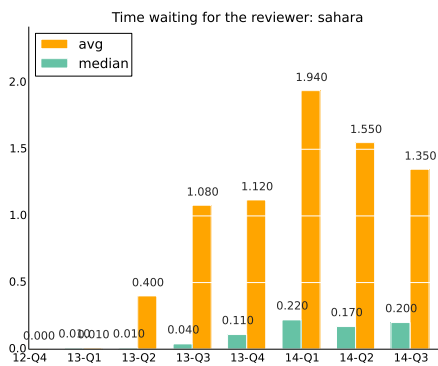
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.01	0.01
13-Q2	0.01	0.4
13-Q3	0.04	1.08
13-Q4	0.11	1.12
14-Q1	0.22	1.94
14-Q2	0.17	1.55
14-Q3	0.2	1.35

Time waiting for the submitter: sahara
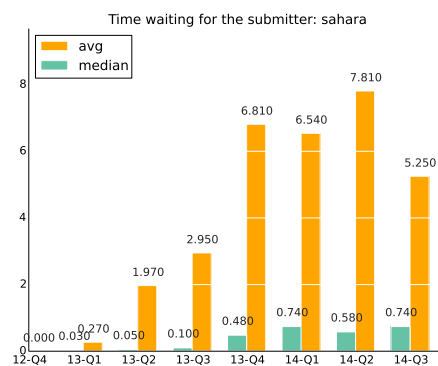
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.03	0.27
13-Q2	0.05	1.97
13-Q3	0.1	2.95
13-Q4	0.48	6.81
14-Q1	0.74	6.54
14-Q2	0.58	7.81
14-Q3	0.74	5.25

2.1.1.10 Swift

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: swift
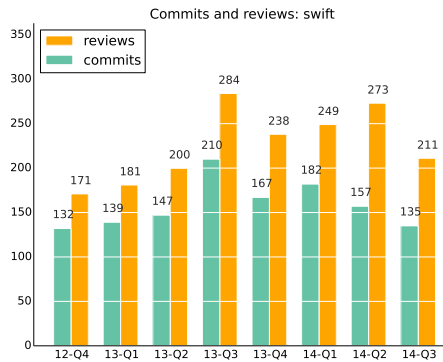
Period	Commits	Reviews
12-Q4	132	171
13-Q1	139	181
13-Q2	147	200
13-Q3	210	284
13-Q4	167	238
14-Q1	182	249
14-Q2	157	273
14-Q3	135	211

Opened and closed tickets: swift
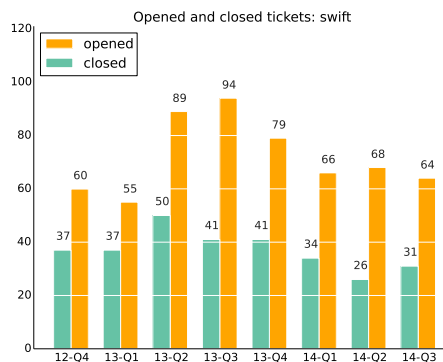
Period	Closed	Opened
12-Q4	37	60
13-Q1	37	55
13-Q2	50	89
13-Q3	41	94
13-Q4	41	79
14-Q1	34	66
14-Q2	26	68
14-Q3	31	64

Merged and abandoned reviews: swift
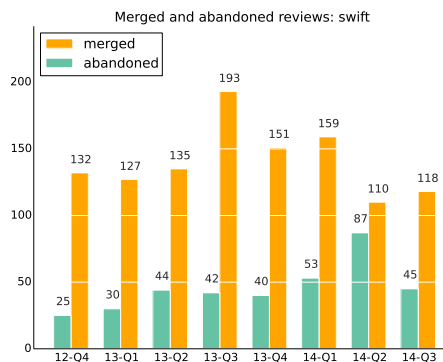
Period	Merged	Abandoned
12-Q4	132	25
13-Q1	127	30
13-Q2	135	44
13-Q3	193	42
13-Q4	151	40
14-Q1	159	53
14-Q2	110	87
14-Q3	118	45

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: swift
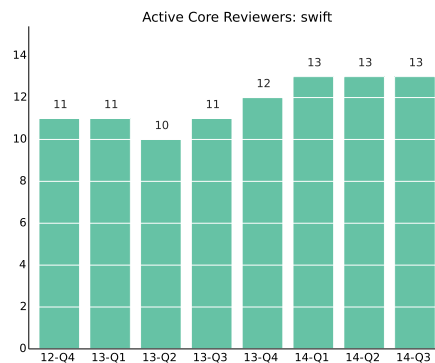
Period	Active Core
12-Q4	11
13-Q1	11
13-Q2	10
13-Q3	11
13-Q4	12
14-Q1	13
14-Q2	13
14-Q3	13

Authors swift
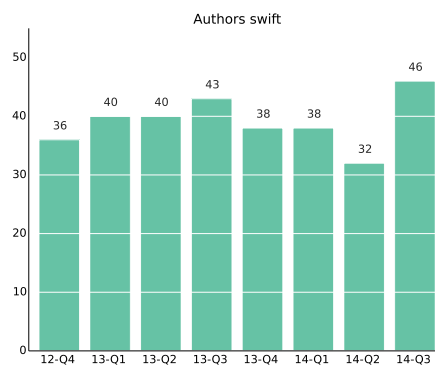
Period	Authors
12-Q4	36
13-Q1	40
13-Q2	40
13-Q3	43
13-Q4	38
14-Q1	38
14-Q2	32
14-Q3	46

Commit (s)	Author	Commit (s)	Organizations
21	Samuel Merritt	34	SwiftStack
18	Paul Luse	29	Rackspace
10	Alistair Coles	25	Intel
10	Clay Gerrard	14	HP
7	John Dickinson	8	Red Hat
6	Christian Schwede	6	DKRZ
6	David Goetz	4	IBM
4	Matthew Oliver	2	Cisco Systems
4	Mike Barton	2	NTT
3	Thiago da Silva	2	SUSE

Process: Efficiency closing changesets and tickets, time to review (mean

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Bitergia

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process. : Efficiency closing issues and time to review: mean and median

Efficiency closing tickets: swift

Period	Closed/Opened
12-Q4	0.62
13-Q1	0.67
13-Q2	0.56
13-Q3	0.44
13-Q4	0.52
14-Q1	0.52
14-Q2	0.38
14-Q3	0.48

Changesets efficiency swift
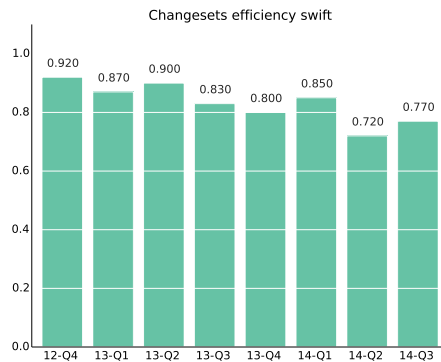
Period	Closed/Opened
12-Q4	0.92
13-Q1	0.87
13-Q2	0.9
13-Q3	0.83
13-Q4	0.8
14-Q1	0.85
14-Q2	0.72
14-Q3	0.77

Time to merge (days): swift
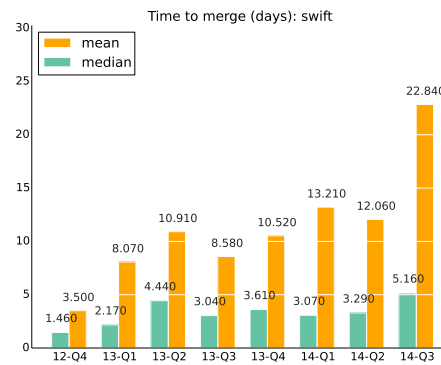
Period	Median	Mean
12-Q4	1.46	3.5
13-Q1	2.17	8.07
13-Q2	4.44	10.91
13-Q3	3.04	8.58
13-Q4	3.61	10.52
14-Q1	3.07	13.21
14-Q2	3.29	12.06
14-Q3	5.16	22.84

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Biﬆergia

Patchsets per Changeset: swift
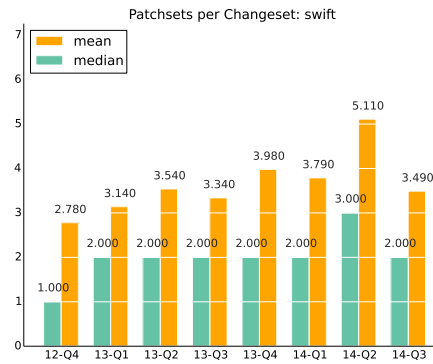
Period	Median	Mean
12-Q4	1.0	2.78
13-Q1	2.0	3.14
13-Q2	2.0	3.54
13-Q3	2.0	3.34
13-Q4	2.0	3.98
14-Q1	2.0	3.79
14-Q2	3.0	5.11
14-Q3	2.0	3.49

Time waiting for the reviewer: swift
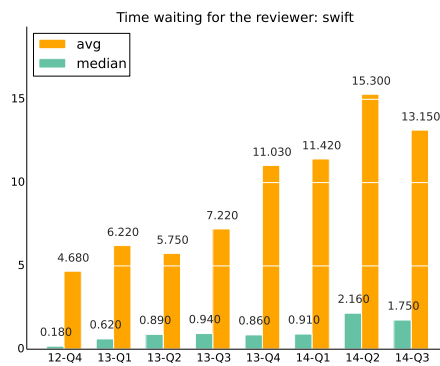
Period	Median	Mean
12-Q4	0.18	4.68
13-Q1	0.62	6.22
13-Q2	0.89	5.75
13-Q3	0.94	7.22
13-Q4	0.86	11.03
14-Q1	0.91	11.42
14-Q2	2.16	15.3
14-Q3	1.75	13.15

Time waiting for the submitter: swift
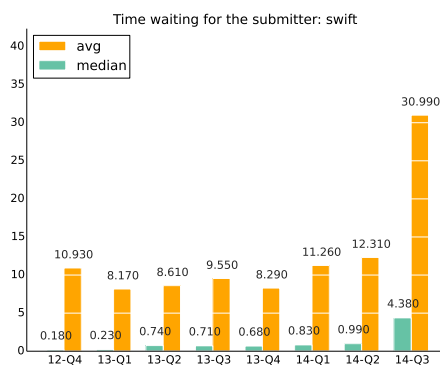
Period	Median	Mean
12-Q4	0.18	10.93
13-Q1	0.23	8.17
13-Q2	0.74	8.61
13-Q3	0.71	9.55
13-Q4	0.68	8.29
14-Q1	0.83	11.26
14-Q2	0.99	12.31
14-Q3	4.38	30.99

2.1.1.11 Trove

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: trove
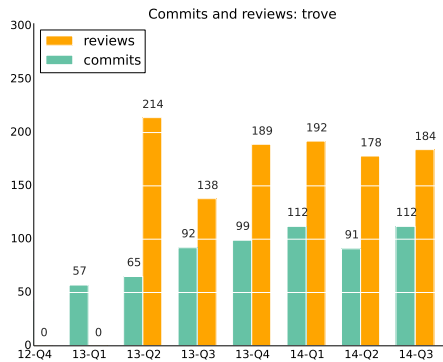
Period	Commits	Reviews
12-Q4	43	0
13-Q1	57	0
13-Q2	65	214
13-Q3	92	138
13-Q4	99	189
14-Q1	112	192
14-Q2	91	178
14-Q3	112	184

Opened and closed tickets: trove
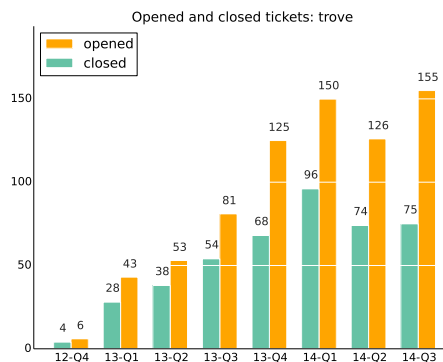
Period	Closed	Opened
12-Q4	4	6
13-Q1	28	43
13-Q2	38	53
13-Q3	54	81
13-Q4	68	125
14-Q1	96	150
14-Q2	74	126
14-Q3	75	155

Merged and abandoned reviews: trove
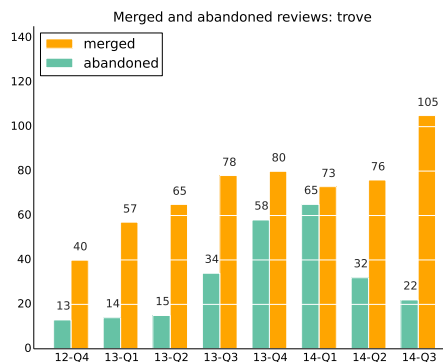
Period	Merged	Abandoned
12-Q4	40	13
13-Q1	57	14
13-Q2	65	15
13-Q3	78	34
13-Q4	80	58
14-Q1	73	65
14-Q2	76	32
14-Q3	105	22

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: trove
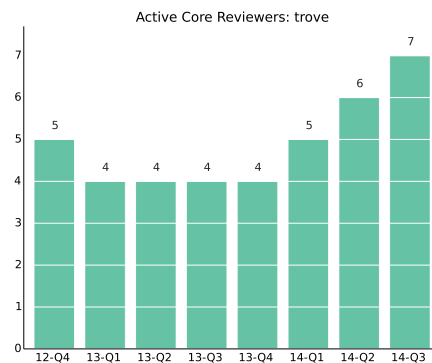
Period	Active Core
12-Q4	5
13-Q1	4
13-Q2	4
13-Q3	4
13-Q4	4
14-Q1	5
14-Q2	6
14-Q3	7

Authors trove
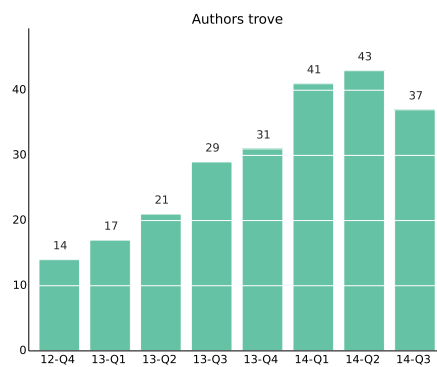
Period	Authors
12-Q4	14
13-Q1	17
13-Q2	21
13-Q3	29
13-Q4	31
14-Q1	41
14-Q2	43
14-Q3	37

Commit (s)	Author	Commit (s)	Organizations
22	Amrith Kumar	43	Tesora
13	Nikhil Manchanda	19	HP
7	ERROR	15	Rackspace
6	Greg Lucas	10	SUSE
5	Denis M	8	eBay
5	Peter Stachowski	6	Red Hat
4	Morgan Jones	5	Mirantis
4	Ramashri Umale	2	IBM
4	Tim Simpson	1	99cloud
3	Andreas Jaeger	1	Canonical

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: trove
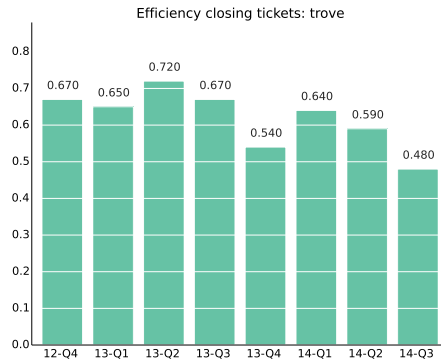
Period	Closed/Opened
12-Q4	0.67
13-Q1	0.65
13-Q2	0.72
13-Q3	0.67
13-Q4	0.54
14-Q1	0.64
14-Q2	0.59
14-Q3	0.48

Changesets efficiency trove
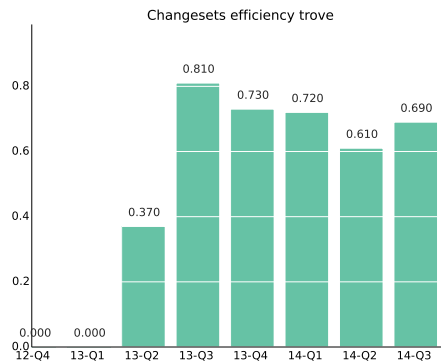
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.37
13-Q3	0.81
13-Q4	0.73
14-Q1	0.72
14-Q2	0.61
14-Q3	0.69

Time to merge (days): trove
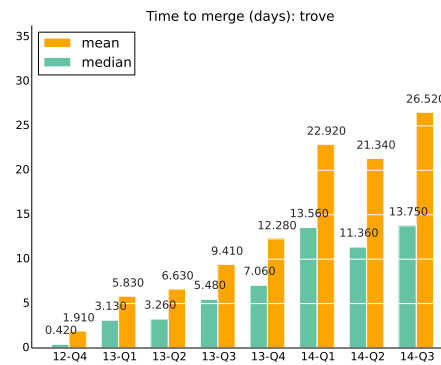
Period	Median	Mean
12-Q4	0.42	1.91
13-Q1	3.13	5.83
13-Q2	3.26	6.63
13-Q3	5.48	9.41
13-Q4	7.06	12.28
14-Q1	13.56	22.92
14-Q2	11.36	21.34
14-Q3	13.75	26.52

Bitergia

Patchsets per Changeset: trove
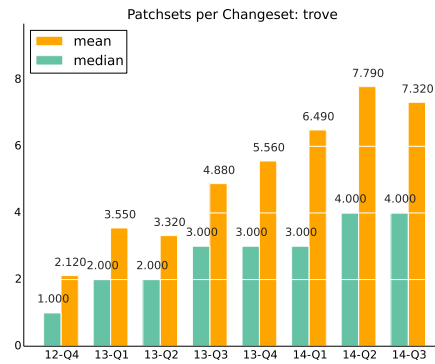
Period	Median	Mean
12-Q4	1.0	2.12
13-Q1	2.0	3.55
13-Q2	2.0	3.32
13-Q3	3.0	4.88
13-Q4	3.0	5.56
14-Q1	3.0	6.49
14-Q2	4.0	7.77
14-Q3	4.0	7.31

Time waiting for the reviewer: trove
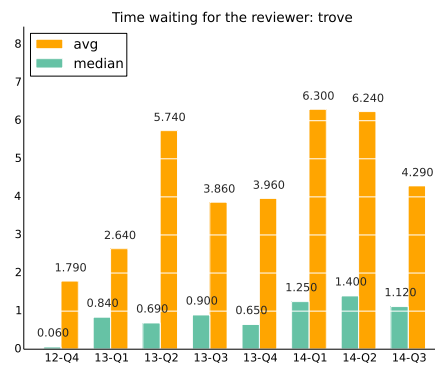
Period	Median	Mean
12-Q4	0.06	1.79
13-Q1	0.84	2.64
13-Q2	0.69	5.74
13-Q3	0.9	3.86
13-Q4	0.65	3.96
14-Q1	1.25	6.3
14-Q2	1.4	6.24
14-Q3	1.12	4.29

Time waiting for the submitter: trove
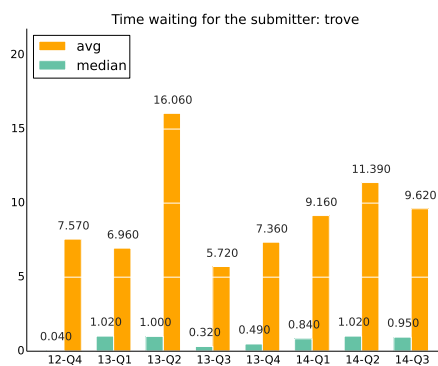
Period	Median	Mean
12-Q4	0.04	7.57
13-Q1	1.02	6.96
13-Q2	1.0	16.06
13-Q3	0.32	5.72
13-Q4	0.49	7.36
14-Q1	0.84	9.16
14-Q2	1.02	11.39
14-Q3	0.95	9.62

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2.1.2 Incubated

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: incubated
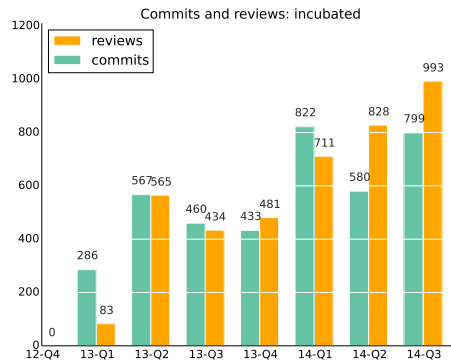
Period	Commits	Reviews
12-Q4	250	0
13-Q1	286	83
13-Q2	567	565
13-Q3	460	434
13-Q4	433	481
14-Q1	822	711
14-Q2	580	828
14-Q3	799	993

Opened and closed tickets: incubated
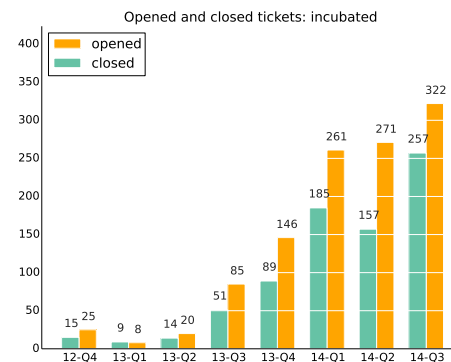
Period	Closed	Opened
12-Q4	15	25
13-Q1	9	8
13-Q2	14	20
13-Q3	51	85
13-Q4	89	146
14-Q1	185	261
14-Q2	157	271
14-Q3	257	322

Merged and abandoned reviews: incubated
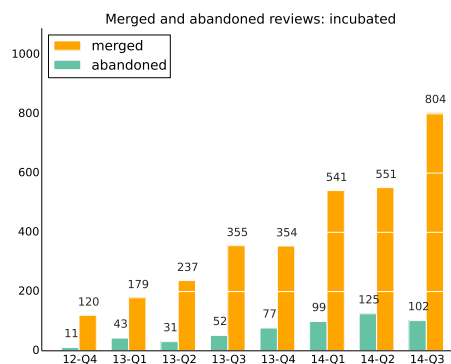
Period	Merged	Abandoned
12-Q4	120	11
13-Q1	179	43
13-Q2	237	31
13-Q3	355	52
13-Q4	354	77
14-Q1	541	99
14-Q2	551	125
14-Q3	804	102

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: incubated
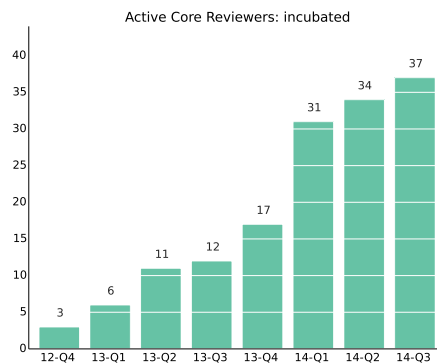
Period	Active Core
12-Q4	3
13-Q1	6
13-Q2	11
13-Q3	12
13-Q4	17
14-Q1	31
14-Q2	34
14-Q3	37

Authors incubated
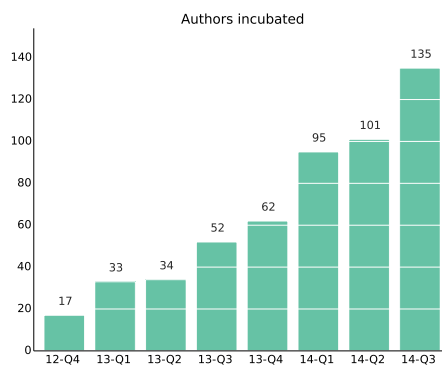
Period	Authors
12-Q4	17
13-Q1	33
13-Q2	34
13-Q3	52
13-Q4	62
14-Q1	95
14-Q2	101
14-Q3	135

Commit (s)	Author	Commit (s)	Organizations
64	Valeriy Ponomaryov	141	Rackspace
54	Kiall Mac Innes	125	HP
52	Lucas Alvares Gomes	115	Mirantis
48	Andreas Jaeger	70	Red Hat
32	Flavio Percoco	56	SUSE
31	Kurt Griffiths	21	Yahoo!
24	Jim Rollenhagen	17	B1 Systems
21	Ruby Loo	17	IBM
17	Christian Berendt	9	Ericsson
17	John Vrbanac	8	OCTO Tech.

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Time to merge (days): incubated
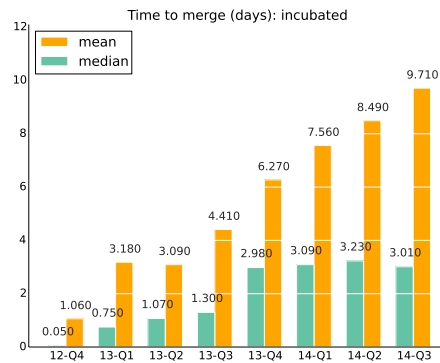
Period	Median	Mean
12-Q4	0.05	1.06
13-Q1	0.75	3.18
13-Q2	1.07	3.09
13-Q3	1.3	4.41
13-Q4	2.98	6.27
14-Q1	3.09	7.56
14-Q2	3.23	8.49
14-Q3	3.01	9.71

Efficiency closing tickets: incubated
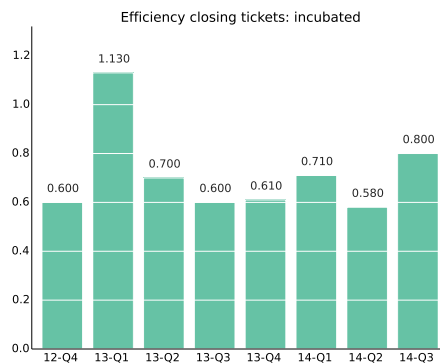
Period	Closed/Opened
12-Q4	0.6
13-Q1	1.13
13-Q2	0.7
13-Q3	0.6
13-Q4	0.61
14-Q1	0.71
14-Q2	0.58
14-Q3	0.8

Changesets efficiency incubated
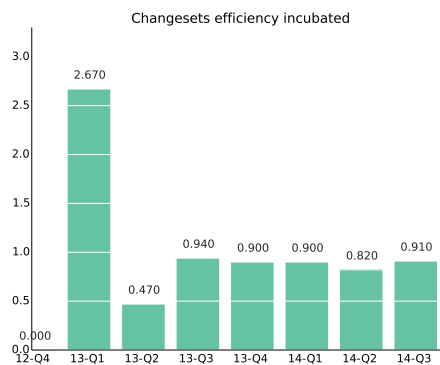
Period	Closed/Opened
12-Q4	0.0
13-Q1	2.67
13-Q2	0.47
13-Q3	0.94
13-Q4	0.9
14-Q1	0.9
14-Q2	0.82
14-Q3	0.91

Bitergia

Patchsets per Changeset: incubated
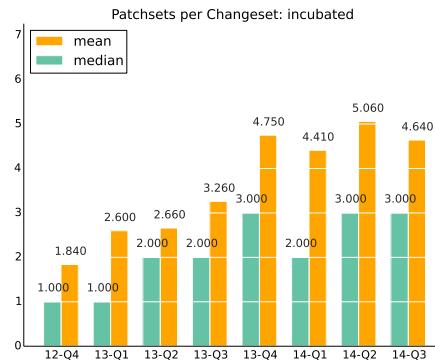
Period	Median	Mean
12-Q4	1.0	1.84
13-Q1	1.0	2.6
13-Q2	2.0	2.66
13-Q3	2.0	3.26
13-Q4	3.0	4.75
14-Q1	2.0	4.41
14-Q2	3.0	5.06
14-Q3	3.0	4.64

Time waiting for the reviewer: incubated
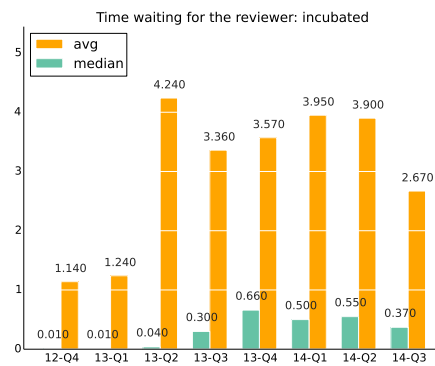
Period	Median	Mean
12-Q4	0.01	1.14
13-Q1	0.01	1.24
13-Q2	0.04	4.24
13-Q3	0.3	3.36
13-Q4	0.66	3.57
14-Q1	0.5	3.95
14-Q2	0.55	3.9
14-Q3	0.37	2.67

Time waiting for the submitter: incubated
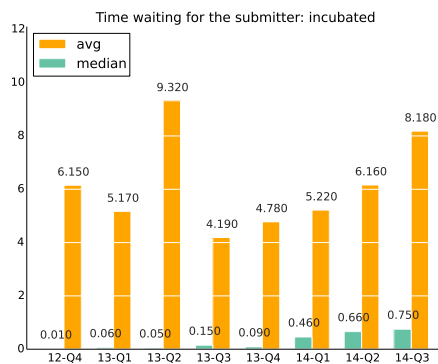
Period	Median	Mean
12-Q4	0.01	6.15
13-Q1	0.06	5.17
13-Q2	0.05	9.32
13-Q3	0.15	4.19
13-Q4	0.09	4.78
14-Q1	0.46	5.22
14-Q2	0.66	6.16
14-Q3	0.75	8.18

2.1.2.1   Barbican

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: barbican
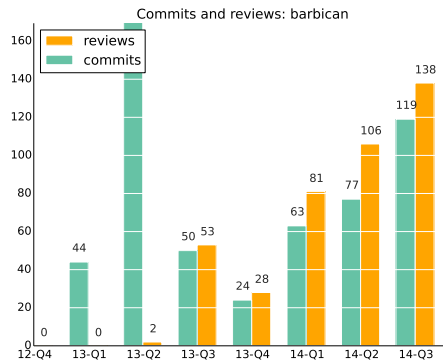
Period	Commits	Reviews
12-Q4	0	0
13-Q1	44	0
13-Q2	279	2
13-Q3	50	53
13-Q4	24	28
14-Q1	63	81
14-Q2	77	106
14-Q3	119	138

Opened and closed tickets: barbican
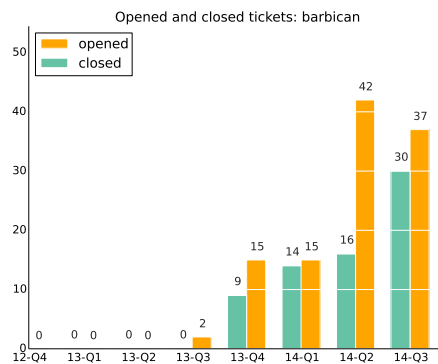
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	0	0
13-Q3	0	2
13-Q4	9	15
14-Q1	14	15
14-Q2	16	42
14-Q3	30	37

Merged and abandoned reviews: barbican
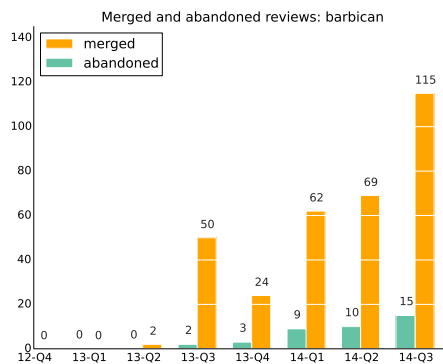
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	0	0
13-Q2	2	0
13-Q3	50	2
13-Q4	24	3
14-Q1	62	9
14-Q2	69	10
14-Q3	115	15

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: barbican
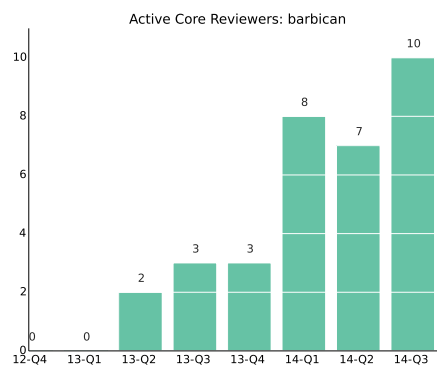
Period	Active Core
12-Q4	0
13-Q1	0
13-Q2	2
13-Q3	3
13-Q4	3
14-Q1	8
14-Q2	7
14-Q3	10

Authors barbican
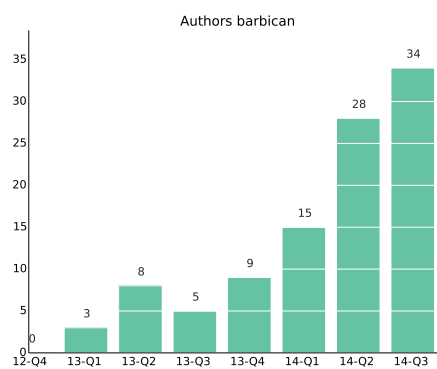
Period	Authors
12-Q4	0
13-Q1	3
13-Q2	8
13-Q3	5
13-Q4	9
14-Q1	15
14-Q2	28
14-Q3	34

Commit (s)	Author	Commit (s)	Organizations
17	John Vrbanac	59	Rackspace
12	jfwood	15	HP
9	Juan Antonio Osorio Robles	14	Red Hat
8	Arvind Tiwari	9	Ericsson
7	Ade Lee	6	B1 Systems
6	Christian Berendt	3	JHU APL
6	Steve Heyman	1	Cloudscaling
5	Adam Harwell	1	IBM
5	Chelsea Winfree	1	JPBerlin
5	Constanze Kratel	1	Mirantis

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.
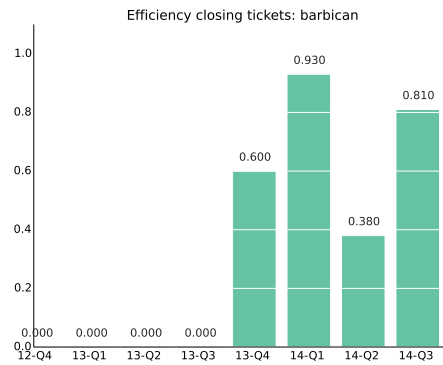
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0
13-Q3	0.0
13-Q4	0.6
14-Q1	0.93
14-Q2	0.38
14-Q3	0.81
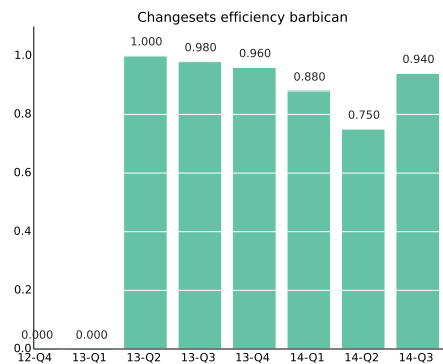
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	1.0
13-Q3	0.98
13-Q4	0.96
14-Q1	0.88
14-Q2	0.75
14-Q3	0.94
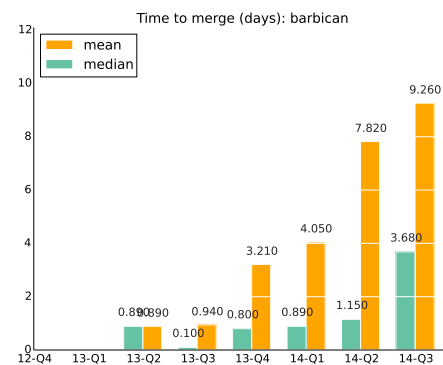
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	0.89	0.89
13-Q3	0.1	0.94
13-Q4	0.8	3.21
14-Q1	0.89	4.05
14-Q2	1.15	7.82
14-Q3	3.68	9.26

Bitergia

Patchsets per Changeset: barbican
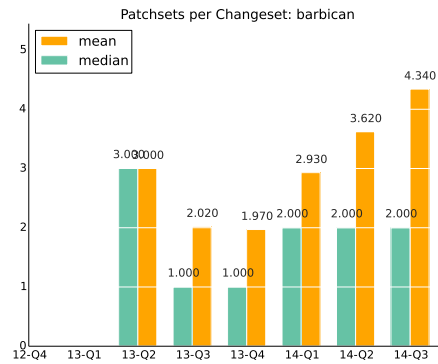
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	3.0	3.0
13-Q3	1.0	2.02
13-Q4	1.0	1.97
14-Q1	2.0	2.93
14-Q2	2.0	3.62
14-Q3	2.0	4.34

Time waiting for the reviewer: barbican
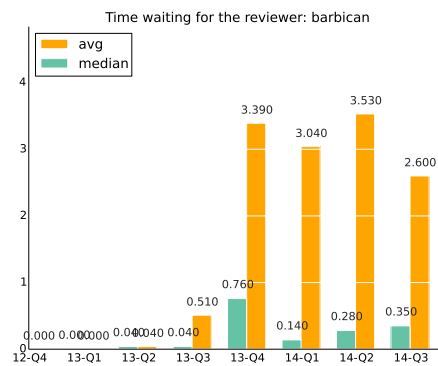
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.04	0.04
13-Q3	0.04	0.51
13-Q4	0.76	3.39
14-Q1	0.14	3.04
14-Q2	0.28	3.53
14-Q3	0.35	2.6

Time waiting for the submitter: barbican
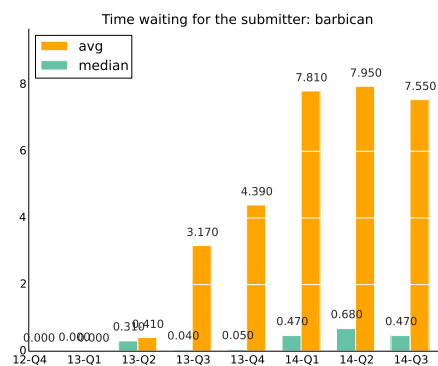
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.31	0.41
13-Q3	0.04	3.17
13-Q4	0.05	4.39
14-Q1	0.47	7.81
14-Q2	0.68	7.95
14-Q3	0.47	7.55

2.1.2.2 Designate

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: designate
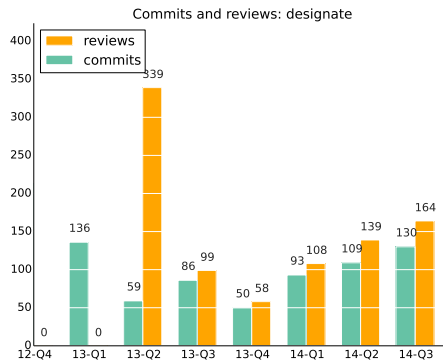
Period	Commits	Reviews
12-Q4	215	0
13-Q1	136	0
13-Q2	59	339
13-Q3	86	99
13-Q4	50	58
14-Q1	93	108
14-Q2	109	139
14-Q3	130	164

Opened and closed tickets: designate
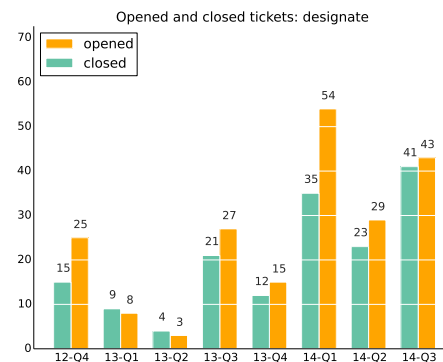
Period	Closed	Opened
12-Q4	15	25
13-Q1	9	8
13-Q2	4	3
13-Q3	21	27
13-Q4	12	15
14-Q1	35	54
14-Q2	23	29
14-Q3	41	43

Merged and abandoned reviews: designate
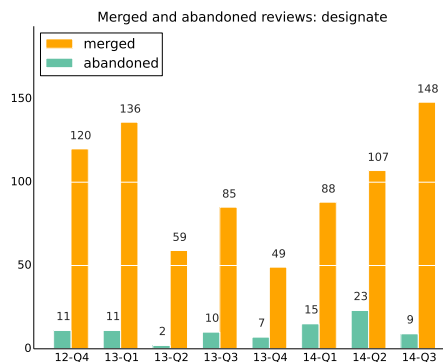
Period	Merged	Abandoned
12-Q4	120	11
13-Q1	136	11
13-Q2	59	2
13-Q3	85	10
13-Q4	49	7
14-Q1	88	15
14-Q2	107	23
14-Q3	148	9

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Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: designate
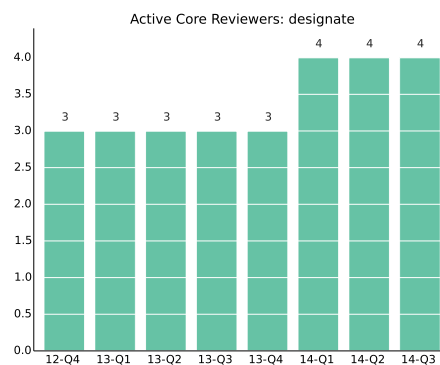
Period	Active Core
12-Q4	3
13-Q1	3
13-Q2	3
13-Q3	3
13-Q4	3
14-Q1	4
14-Q2	4
14-Q3	4

Authors designate
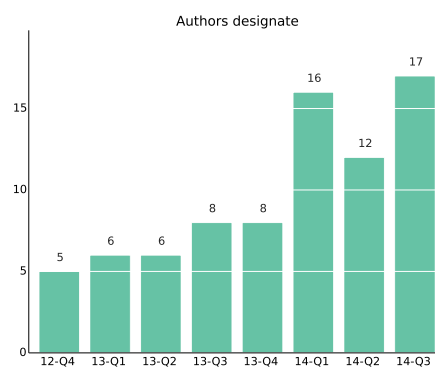
Period	Authors
12-Q4	5
13-Q1	6
13-Q2	6
13-Q3	8
13-Q4	8
14-Q1	16
14-Q2	12
14-Q3	17

Commit (s)	Author
54	Kiall Mac Innes
13	Graham Hayes
9	Betsy Luzader
8	Alok Jani
8	Endre Karlson
8	JordanP
8	Vinod Mangalpally
7	Jordan Cazamias
5	Christian Berendt
2	Darshan Sanghani

Commit (s)	Organizations
69	HP
24	Rackspace
8	OCTO Tech.
5	B1 Systems
2	eBay
1	Cloudscaling
1	Red Hat
1	SUSE

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: designate
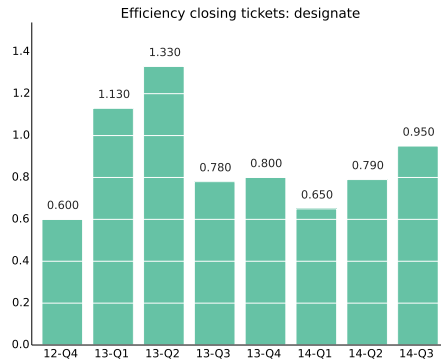
Period	Closed/Opened
12-Q4	0.6
13-Q1	1.13
13-Q2	1.33
13-Q3	0.78
13-Q4	0.8
14-Q1	0.65
14-Q2	0.79
14-Q3	0.95

Changesets efficiency designate
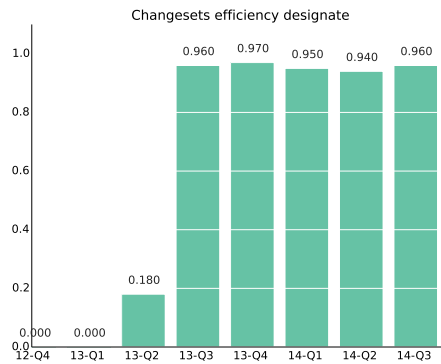
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.18
13-Q3	0.96
13-Q4	0.97
14-Q1	0.95
14-Q2	0.94
14-Q3	0.96

Time to merge (days): designate
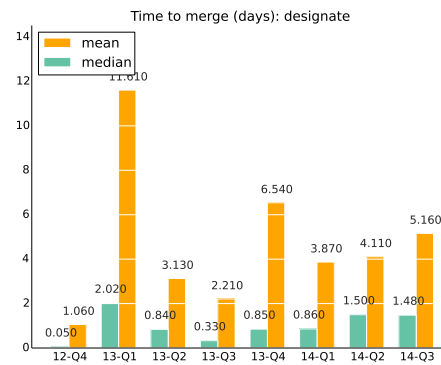
Period	Median	Mean
12-Q4	0.05	1.06
13-Q1	2.02	11.61
13-Q2	0.84	3.13
13-Q3	0.33	2.21
13-Q4	0.85	6.54
14-Q1	0.86	3.87
14-Q2	1.5	4.11
14-Q3	1.48	5.16

Patchsets per Changeset: designate
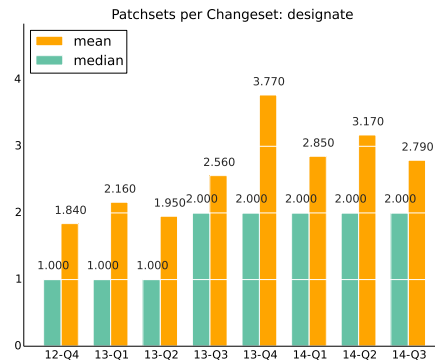
Period	Median	Mean
12-Q4	1.0	1.84
13-Q1	1.0	2.16
13-Q2	1.0	1.95
13-Q3	2.0	2.56
13-Q4	2.0	3.77
14-Q1	2.0	2.85
14-Q2	2.0	3.17
14-Q3	2.0	2.79

Time waiting for the reviewer: designate
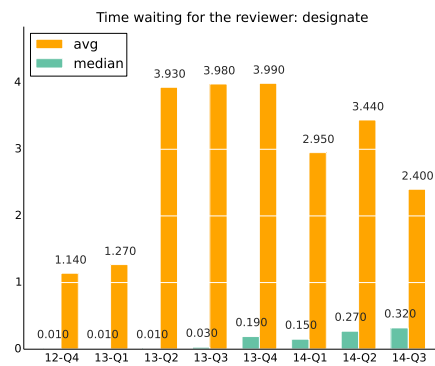
Period	Median	Mean
12-Q4	0.01	1.14
13-Q1	0.01	1.27
13-Q2	0.01	3.93
13-Q3	0.03	3.98
13-Q4	0.19	3.99
14-Q1	0.15	2.95
14-Q2	0.27	3.44
14-Q3	0.32	2.4

Time waiting for the submitter: designate
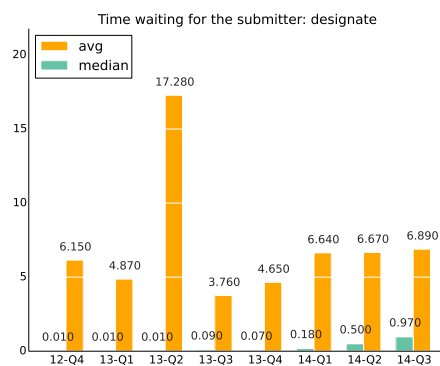
Period	Median	Mean
12-Q4	0.01	6.15
13-Q1	0.01	4.87
13-Q2	0.01	17.28
13-Q3	0.09	3.76
13-Q4	0.07	4.65
14-Q1	0.18	6.64
14-Q2	0.5	6.67
14-Q3	0.97	6.89

2.1.2.3 Ironic

Activity: Commits in Git, submitted, merged and abandoned reviews in
Gerrit and opened and closed issues in Launchpad.

Commits and reviews: ironic
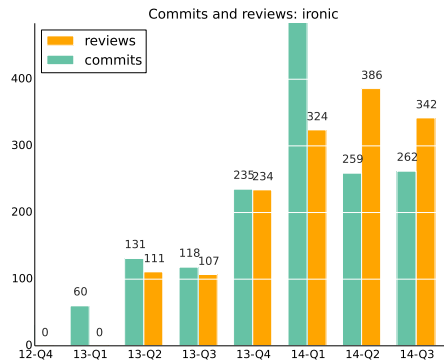
Period	Commits	Reviews
12-Q4	32	0
13-Q1	60	0
13-Q2	131	111
13-Q3	118	107
13-Q4	235	234
14-Q1	505	324
14-Q2	259	386
14-Q3	262	342

Opened and closed tickets: ironic
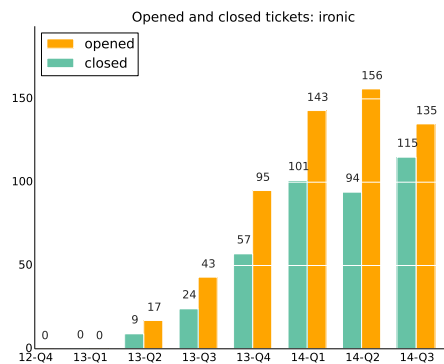
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	9	17
13-Q3	24	43
13-Q4	57	95
14-Q1	101	143
14-Q2	94	156
14-Q3	115	135

Merged and abandoned reviews: ironic
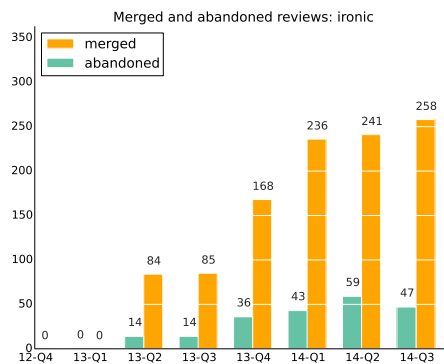
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	0	0
13-Q2	84	14
13-Q3	85	14
13-Q4	168	36
14-Q1	236	43
14-Q2	241	59
14-Q3	258	47

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: ironic
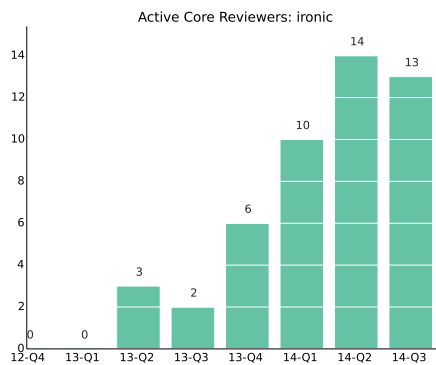
Period	Active Core
12-Q4	0
13-Q1	0
13-Q2	3
13-Q3	2
13-Q4	6
14-Q1	10
14-Q2	14
14-Q3	13

Authors ironic
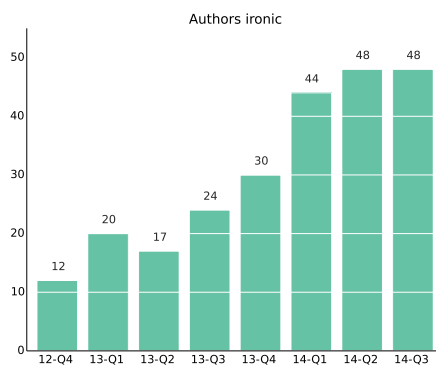
Period	Authors
12-Q4	12
13-Q1	20
13-Q2	17
13-Q3	24
13-Q4	30
14-Q1	44
14-Q2	48
14-Q3	48

Commit (s)	Author	Commit (s)	Organizations
52	Lucas Alvares Gomes	38	HP
24	Jim Rollenhagen	31	Mirantis
21	Ruby Loo	24	Rackspace
14	Vladyslav Drok	21	Yahoo!
13	Devananda	16	Red Hat
13	Ramakrishnan G	8	IBM
10	Ghe Rivero	7	Canonical
9	Dmitry Tantsur	5	NEC
9	Jay Faulkner	2	Intel
7	Adam Gandelman	2	SUSE

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: ironic

Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0.53
13-Q3	0.56
13-Q4	0.6
14-Q1	0.71
14-Q2	0.6
14-Q3	0.85

Changesets efficiency ironic
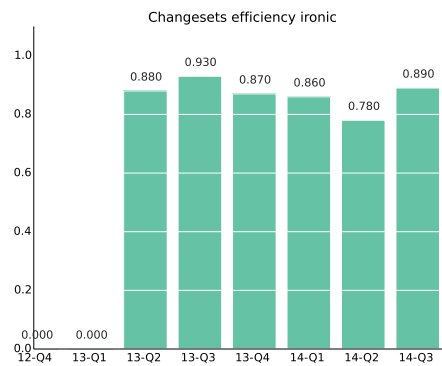
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.88
13-Q3	0.93
13-Q4	0.87
14-Q1	0.86
14-Q2	0.78
14-Q3	0.89

Time to merge (days): ironic
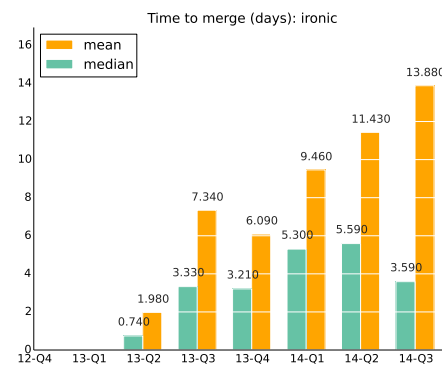
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	0.74	1.98
13-Q3	3.33	7.34
13-Q4	3.21	6.09
14-Q1	5.3	9.46
14-Q2	5.59	11.43
14-Q3	3.59	13.88

Patchsets per Changeset: ironic
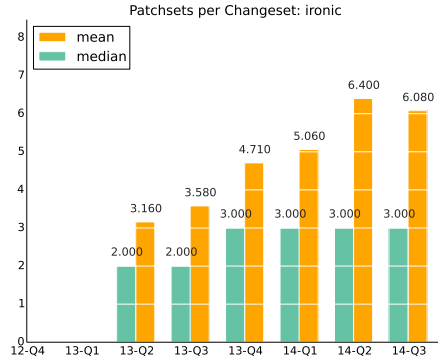
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	2.0	3.16
13-Q3	2.0	3.58
13-Q4	3.0	4.71
14-Q1	3.0	5.06
14-Q2	3.0	6.4
14-Q3	3.0	6.07

Time waiting for the reviewer: ironic
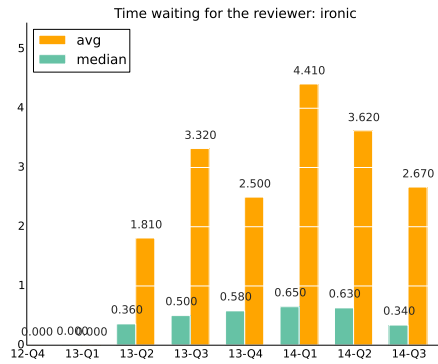
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.36	1.81
13-Q3	0.5	3.32
13-Q4	0.58	2.5
14-Q1	0.65	4.41
14-Q2	0.63	3.62
14-Q3	0.34	2.67

Time waiting for the submitter: ironic
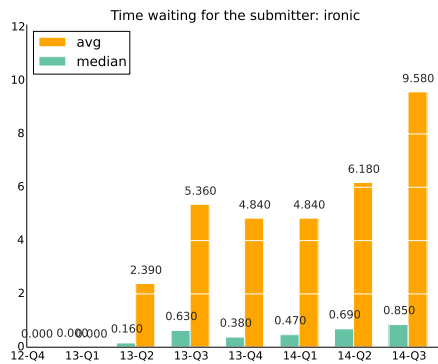
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.16	2.39
13-Q3	0.63	5.36
13-Q4	0.38	4.84
14-Q1	0.47	4.84
14-Q2	0.69	6.18
14-Q3	0.85	9.58

2.1.2.4 Manila

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: manila
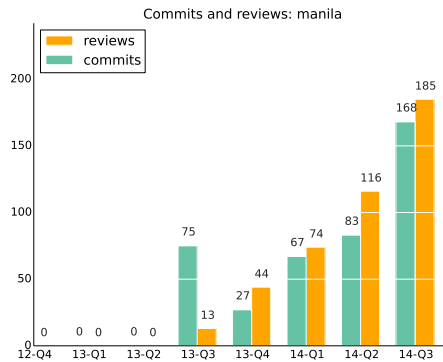
Period	Commits	Reviews
12-Q4	0	0
13-Q1	0	0
13-Q2	0	0
13-Q3	75	13
13-Q4	27	44
14-Q1	67	74
14-Q2	83	116
14-Q3	168	185

Opened and closed tickets: manila
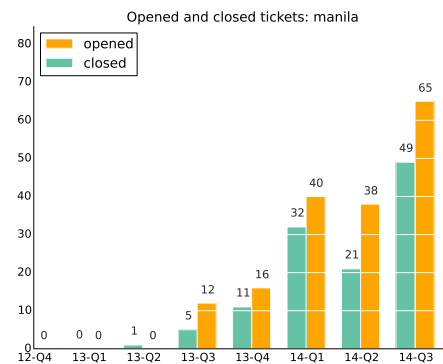
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	1	0
13-Q3	5	12
13-Q4	11	16
14-Q1	32	40
14-Q2	21	38
14-Q3	49	65

Merged and abandoned reviews: manila
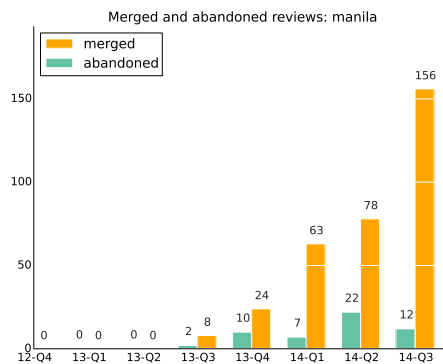
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	0	0
13-Q2	0	0
13-Q3	8	2
13-Q4	24	10
14-Q1	63	7
14-Q2	78	22
14-Q3	156	12

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: manila
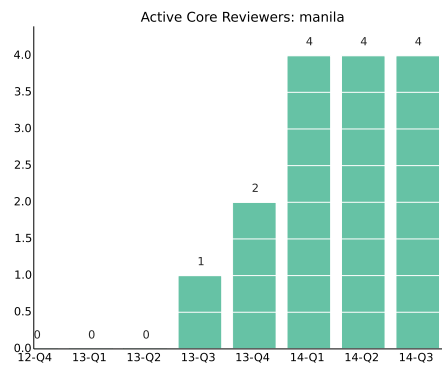
Period	Active Core
12-Q4	0
13-Q1	0
13-Q2	0
13-Q3	1
13-Q4	2
14-Q1	4
14-Q2	4
14-Q3	4

Authors manila
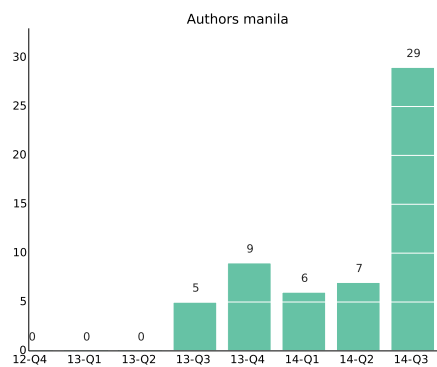
Period	Authors
12-Q4	0
13-Q1	0
13-Q2	0
13-Q3	5
13-Q4	9
14-Q1	6
14-Q2	7
14-Q3	29

Commit (s)	Author
64	Valeriy Ponomaryov
43	Andreas Jaeger
7	Dirk Mueller
6	Christian Berendt
6	Yulia Portnova
5	Thomas Bechtold
4	Dmitry Bogun
4	Julia Varlamova
3	Deepak C Shetty
3	Pete Zaitcev

Commit (s)	Organizations
82	Mirantis
51	SUSE
6	B1 Systems
6	Red Hat
5	JPBerlin
5	NetApp
3	EMC
2	OpenStack Foundation
1	Cloudscaling
1	HP

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on
the time waiting for a reviewer or submitter action in the patchset review
process.

Efficiency closing tickets: manila
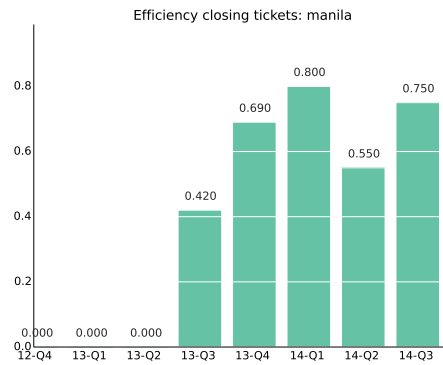
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0
13-Q3	0.42
13-Q4	0.69
14-Q1	0.8
14-Q2	0.55
14-Q3	0.75

Changesets efficiency manila
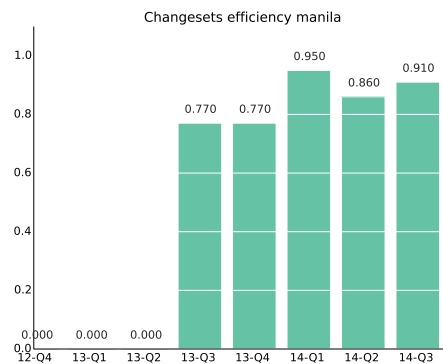
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.0
13-Q3	0.77
13-Q4	0.77
14-Q1	0.95
14-Q2	0.86
14-Q3	0.91

Time to merge (days): manila
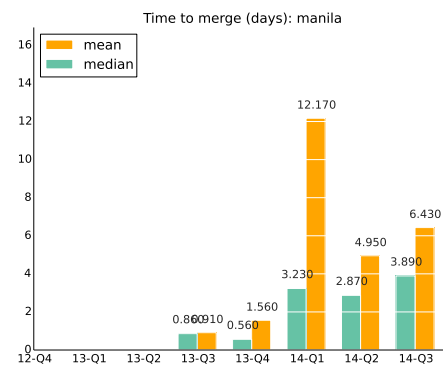
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	nan	nan
13-Q3	0.86	0.91
13-Q4	0.56	1.56
14-Q1	3.23	12.17
14-Q2	2.87	4.95
14-Q3	3.89	6.43

Bitergia

Patchsets per Changeset: manila
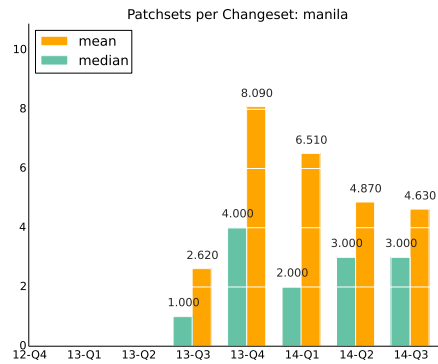
Period	Median	Mean
12-Q4	nan	nan
13-Q1	nan	nan
13-Q2	nan	nan
13-Q3	1.0	2.62
13-Q4	4.0	8.09
14-Q1	2.0	6.51
14-Q2	3.0	4.87
14-Q3	3.0	4.63

Time waiting for the reviewer: manila
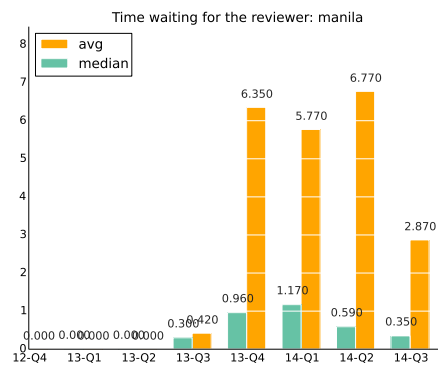
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.0	0.0
13-Q3	0.3	0.42
13-Q4	0.96	6.35
14-Q1	1.17	5.77
14-Q2	0.59	6.77
14-Q3	0.35	2.87

Time waiting for the submitter: manila
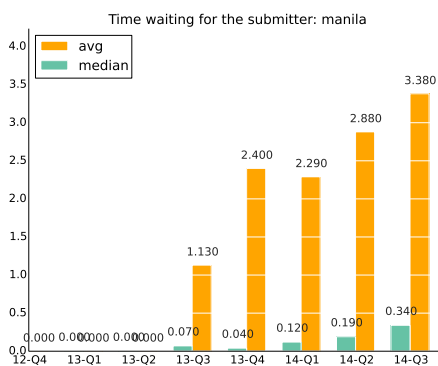
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.0	0.0
13-Q2	0.0	0.0
13-Q3	0.07	1.13
13-Q4	0.04	2.4
14-Q1	0.12	2.29
14-Q2	0.19	2.88
14-Q3	0.34	3.38

2.1.2.5 Zaqar

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: zaqar
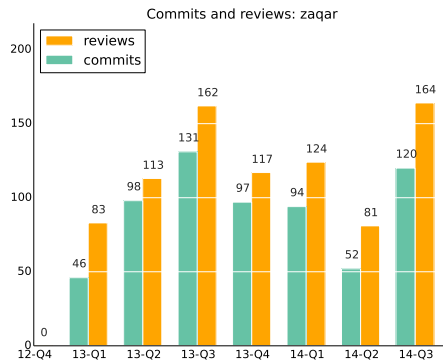
Period	Commits	Reviews
12-Q4	3	0
13-Q1	46	83
13-Q2	98	113
13-Q3	131	162
13-Q4	97	117
14-Q1	94	124
14-Q2	52	81
14-Q3	120	164

Opened and closed tickets: zaqar
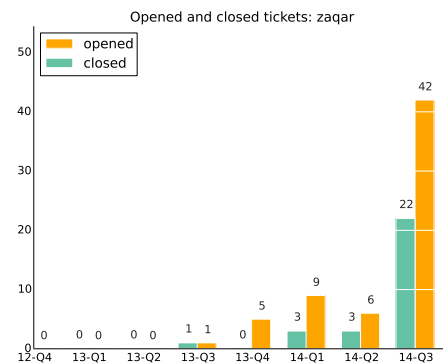
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	0	0
13-Q3	1	1
13-Q4	0	5
14-Q1	3	9
14-Q2	3	6
14-Q3	22	42

Merged and abandoned reviews: zaqar
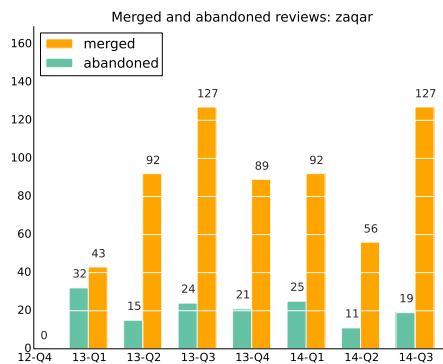
Period	Merged	Abandoned
12-Q4	0	0
13-Q1	43	32
13-Q2	92	15
13-Q3	127	24
13-Q4	89	21
14-Q1	92	25
14-Q2	56	11
14-Q3	127	19

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
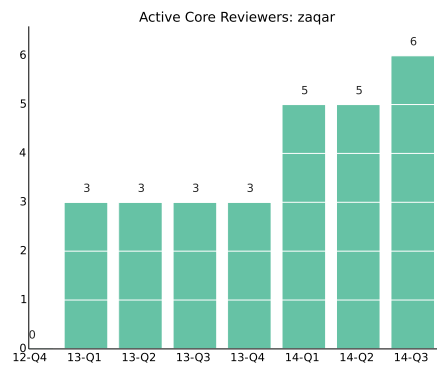
Period	Active Core
12-Q4	0
13-Q1	3
13-Q2	3
13-Q3	3
13-Q4	3
14-Q1	5
14-Q2	5
14-Q3	6
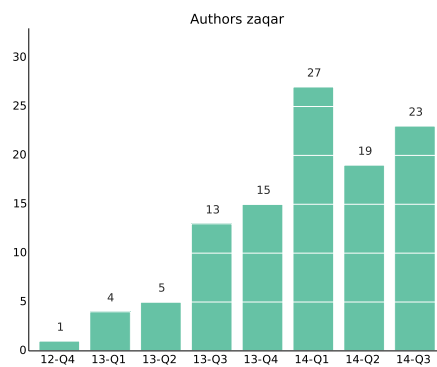
Period	Authors
12-Q4	1
13-Q1	4
13-Q2	5
13-Q3	13
13-Q4	15
14-Q1	27
14-Q2	19
14-Q3	23

Commit (s)	Author
32	Flavio Percoco
31	Kurt Griffiths
14	ERROR
8	Nataliia Uvarova
6	Fei Long Wang
5	pengfei wang
4	Lei Zhang
2	Andreas Jaeger
2	Malini Kamalambal
2	Prashanth Raghu

Commit (s)	Organizations
34	Rackspace
33	Red Hat
8	IBM
2	HP
2	SUSE
1	Cloudscaling
1	Intel
1	Mirantis
1	OpenStack Foundation

Process: Efficiency closing changesets and tickets, time to review (mean

Bitergia

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.
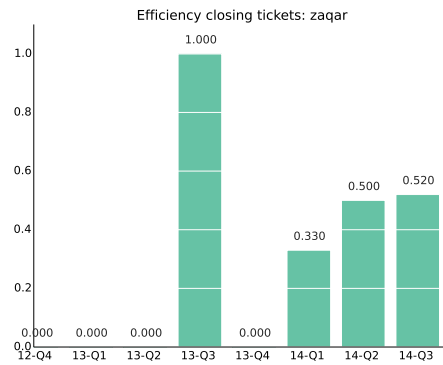
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0
13-Q3	1.0
13-Q4	0.0
14-Q1	0.33
14-Q2	0.5
14-Q3	0.52
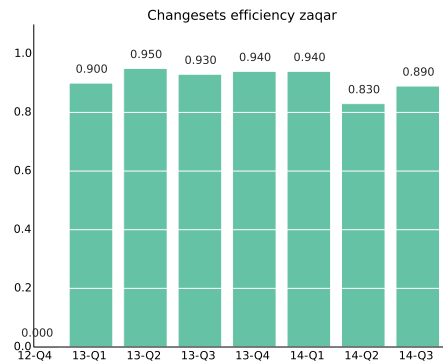
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.9
13-Q2	0.95
13-Q3	0.93
13-Q4	0.94
14-Q1	0.94
14-Q2	0.83
14-Q3	0.89
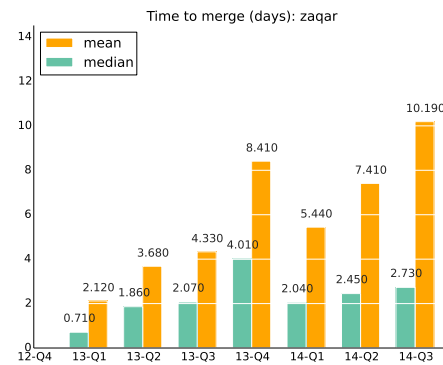
Period	Median	Mean
12-Q4	nan	nan
13-Q1	0.71	2.12
13-Q2	1.86	3.68
13-Q3	2.07	4.33
13-Q4	4.01	8.41
14-Q1	2.04	5.44
14-Q2	2.45	7.41
14-Q3	2.73	10.19

Bitergia

Patchsets per Changeset: zaqar
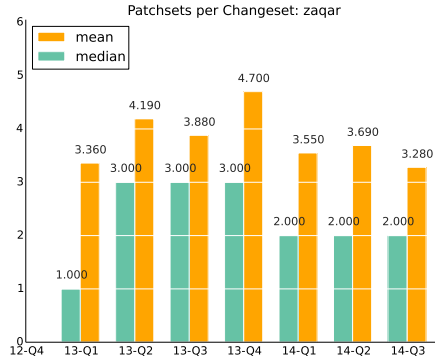
Period	Median	Mean
12-Q4	nan	nan
13-Q1	1.0	3.36
13-Q2	3.0	4.19
13-Q3	3.0	3.88
13-Q4	3.0	4.7
14-Q1	2.0	3.55
14-Q2	2.0	3.69
14-Q3	2.0	3.28

Time waiting for the reviewer: zaqar
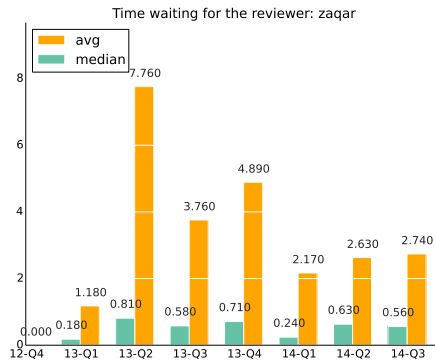
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.18	1.18
13-Q2	0.81	7.76
13-Q3	0.58	3.76
13-Q4	0.71	4.89
14-Q1	0.24	2.17
14-Q2	0.63	2.63
14-Q3	0.56	2.74

Time waiting for the submitter: zaqar
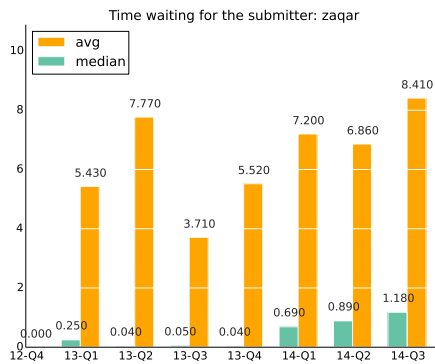
Period	Median	Mean
12-Q4	0.0	0.0
13-Q1	0.25	5.43
13-Q2	0.04	7.77
13-Q3	0.05	3.71
13-Q4	0.04	5.52
14-Q1	0.69	7.2
14-Q2	0.89	6.86
14-Q3	1.18	8.41

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2.1.3 Clients

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: clients
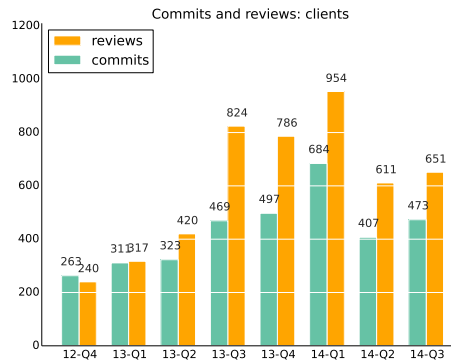
Period	Commits	Reviews
12-Q4	263	240
13-Q1	311	317
13-Q2	323	420
13-Q3	469	824
13-Q4	497	786
14-Q1	684	954
14-Q2	407	611
14-Q3	473	651

Opened and closed tickets: clients
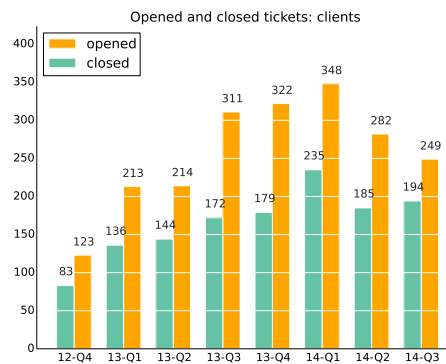
Period	Closed	Opened
12-Q4	83	123
13-Q1	136	213
13-Q2	144	214
13-Q3	172	311
13-Q4	179	322
14-Q1	235	348
14-Q2	185	282
14-Q3	194	249

Merged and abandoned reviews: clients
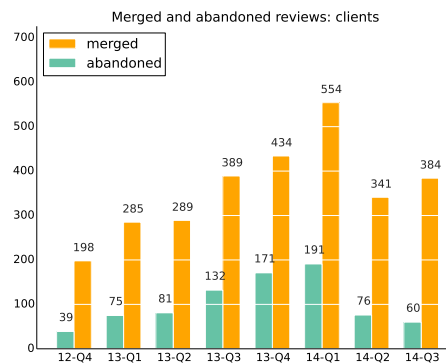
Period	Merged	Abandoned
12-Q4	198	39
13-Q1	285	75
13-Q2	289	81
13-Q3	389	132
13-Q4	434	171
14-Q1	554	191
14-Q2	341	76
14-Q3	384	60

90

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: clients
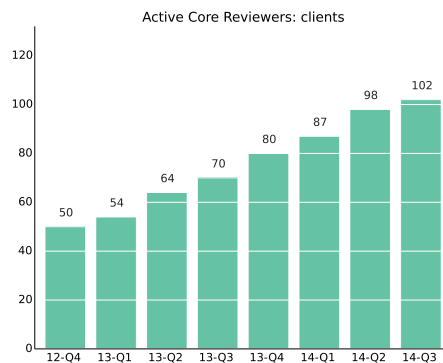
Period	Active Core
12-Q4	50
13-Q1	54
13-Q2	64
13-Q3	70
13-Q4	80
14-Q1	87
14-Q2	98
14-Q3	102

Authors clients

Period	Authors
12-Q4	88
13-Q1	120
13-Q2	114
13-Q3	167
13-Q4	151
14-Q1	192
14-Q2	136
14-Q3	179

Commit (s)	Author	Commit (s)	Organizations
59	Jamie Lennox	120	Red Hat
18	Steve Martinelli	57	IBM
14	Andreas Jaeger	46	HP
13	Flavio Percoco	30	Mirantis
13	liuqing	19	Rackspace
10	Christian Berendt	18	Intel
10	Marek Denis	14	SUSE
9	Brant Knudson	13	99cloud
9	Jeremy Stanley	13	NEC
8	Matthew Farrellee	11	CERN

Process: Efficiency closing changesets and tickets, time to review (mean

and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: clients

He was an Austrian physicist famous for his founding contributions in the fields of statistical mechanics and statistical thermodynamics. He was one of the most important advocates for atomic theory at a time when that scientific model was still highly controversial.

Changesets efficiency clients

Period	Closed/Opened
12-Q4	0.99
13-Q1	1.14
13-Q2	0.88
13-Q3	0.63
13-Q4	0.77
14-Q1	0.78
14-Q2	0.68
14-Q3	0.68

Time to merge (days): clients
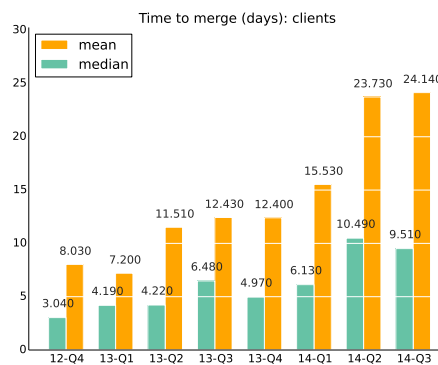
Period	Median	Mean
12-Q4	3.04	8.03
13-Q1	4.19	7.2
13-Q2	4.22	11.51
13-Q3	6.48	12.43
13-Q4	4.97	12.4
14-Q1	6.13	15.53
14-Q2	10.49	23.73
14-Q3	9.51	24.14

Biitergia

Patchsets per Changeset: clients
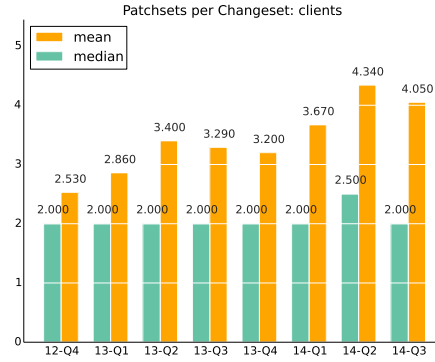
Period	Median	Mean
12-Q4	2.0	2.53
13-Q1	2.0	2.86
13-Q2	2.0	3.4
13-Q3	2.0	3.29
13-Q4	2.0	3.2
14-Q1	2.0	3.67
14-Q2	2.5	4.34
14-Q3	2.0	4.05

Time waiting for the reviewer: clients
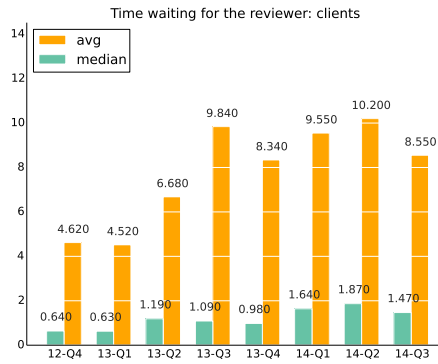
Period	Median	Mean
12-Q4	0.64	4.62
13-Q1	0.63	4.52
13-Q2	1.19	6.68
13-Q3	1.09	9.84
13-Q4	0.98	8.34
14-Q1	1.64	9.55
14-Q2	1.87	10.2
14-Q3	1.47	8.55

Time waiting for the submitter: clients
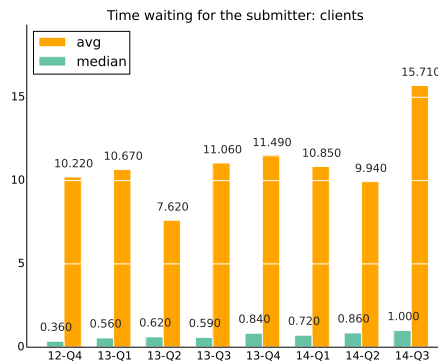
Period	Median	Mean
12-Q4	0.36	10.22
13-Q1	0.56	10.67
13-Q2	0.62	7.62
13-Q3	0.59	11.06
13-Q4	0.84	11.49
14-Q1	0.72	10.85
14-Q2	0.86	9.94
14-Q3	1.0	15.71

2.1.4 Others

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
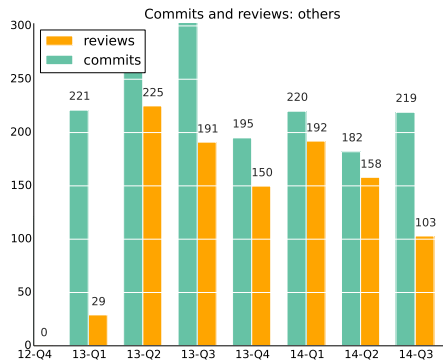
Period	Commits	Reviews
12-Q4	121	0
13-Q1	221	29
13-Q2	267	225
13-Q3	470	191
13-Q4	195	150
14-Q1	220	192
14-Q2	182	158
14-Q3	219	103
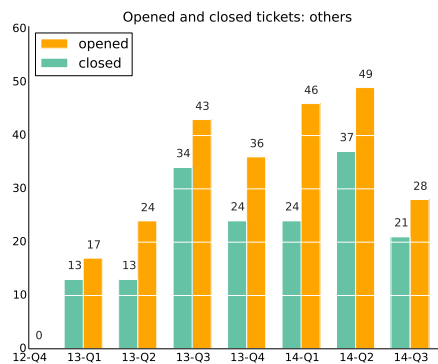
Period	Closed	Opened
12-Q4	0	0
13-Q1	13	17
13-Q2	13	24
13-Q3	34	43
13-Q4	24	36
14-Q1	24	46
14-Q2	37	49
14-Q3	21	28
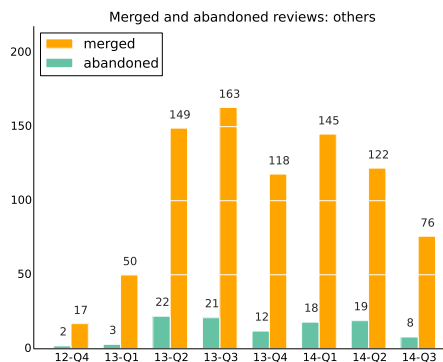
Period	Merged	Abandoned
12-Q4	17	2
13-Q1	50	3
13-Q2	149	22
13-Q3	163	21
13-Q4	118	12
14-Q1	145	18
14-Q2	122	19
14-Q3	76	8

Community: Authors per quarter and top authors and organizations in the last quarter

Active Core Reviewers: others
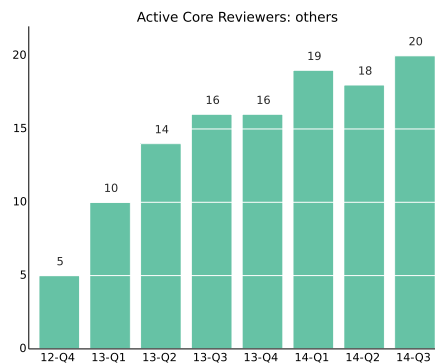
Period	Active Core
12-Q4	5
13-Q1	10
13-Q2	14
13-Q3	16
13-Q4	16
14-Q1	19
14-Q2	18
14-Q3	20

Authors others
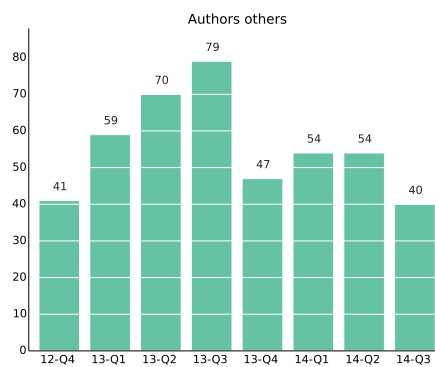
Period	Authors
12-Q4	41
13-Q1	59
13-Q2	70
13-Q3	79
13-Q4	47
14-Q1	54
14-Q2	54
14-Q3	40

Commit (s)	Author	Commit (s)	Organizations
56	Tzu-Mainn Chen	147	Red Hat
29	Ladislav Smola	31	Mirantis
24	Radomir Dopieralski	13	HP
15	Ana Krivokapic	4	NEC
12	Lennart Regebro	3	B1 Systems
10	Sergey Lukjanov	2	Cloudwatt
9	Nikhil Manchanda	2	eBay
8	Sergey Reshetnyak	2	NTT
7	IvanBerezovskiy	2	OpenStack Foundation
4	Akihiro MOTOKI	2	Rackspace

Process: Efficiency closing issues and time to review: mean and median

Efficiency closing tickets: others

Period	Closed/Opened
12-Q4	0
13-Q1	0.76
13-Q2	0.54
13-Q3	0.79
13-Q4	0.67
14-Q1	0.52
14-Q2	0.76
14-Q3	0.75

Changesets efficiency others
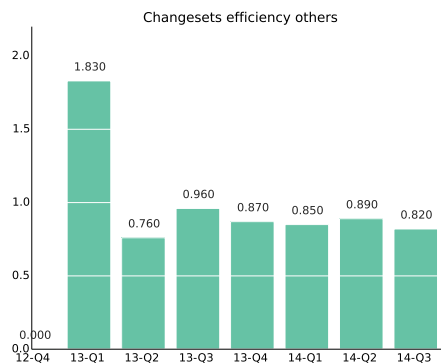
Period	Closed/Opened
12-Q4	0.0
13-Q1	1.83
13-Q2	0.76
13-Q3	0.96
13-Q4	0.87
14-Q1	0.85
14-Q2	0.89
14-Q3	0.82

Time to merge (days): others
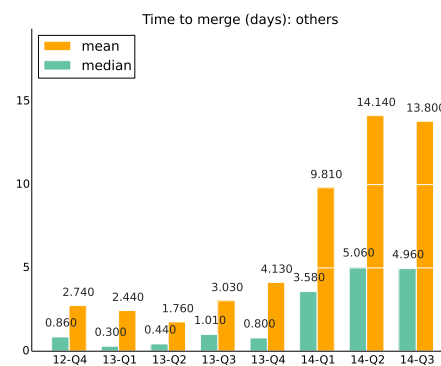
Period	Median	Mean
12-Q4	0.86	2.74
13-Q1	0.3	2.44
13-Q2	0.44	1.76
13-Q3	1.01	3.03
13-Q4	0.8	4.13
14-Q1	3.58	9.81
14-Q2	5.06	14.14
14-Q3	4.96	13.8
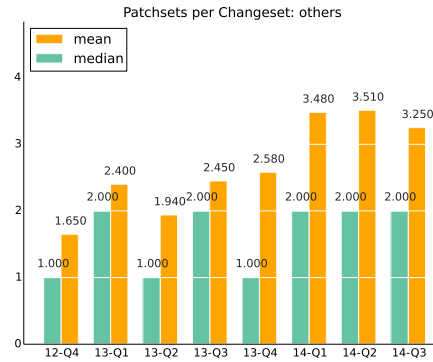
Period	Median	Mean
12-Q4	1.0	1.65
13-Q1	2.0	2.4
13-Q2	1.0	1.94
13-Q3	2.0	2.45
13-Q4	1.0	2.58
14-Q1	2.0	3.48
14-Q2	2.0	3.51
14-Q3	2.0	3.25
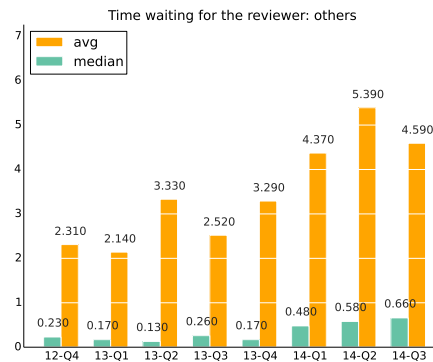
Period	Median	Mean
12-Q4	0.23	2.31
13-Q1	0.17	2.14
13-Q2	0.13	3.33
13-Q3	0.26	2.52
13-Q4	0.17	3.29
14-Q1	0.48	4.37
14-Q2	0.58	5.39
14-Q3	0.66	4.59
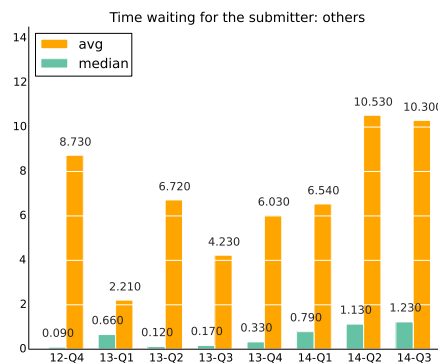
Period	Median	Mean
12-Q4	0.09	8.73
13-Q1	0.66	2.21
13-Q2	0.12	6.72
13-Q3	0.17	4.23
13-Q4	0.33	6.03
14-Q1	0.79	6.54
14-Q2	1.13	10.53
14-Q3	1.23	10.3

2.2 Common Libraries

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
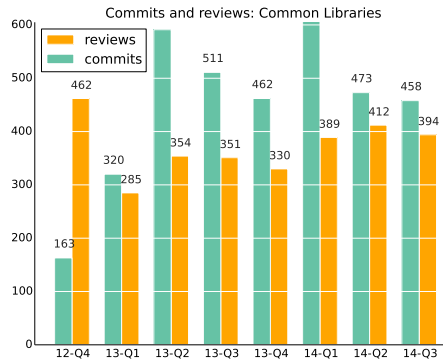
Period	Commits	Reviews
12-Q4	163	462
13-Q1	320	285
13-Q2	591	354
13-Q3	511	351
13-Q4	462	330
14-Q1	627	389
14-Q2	473	412
14-Q3	457	394
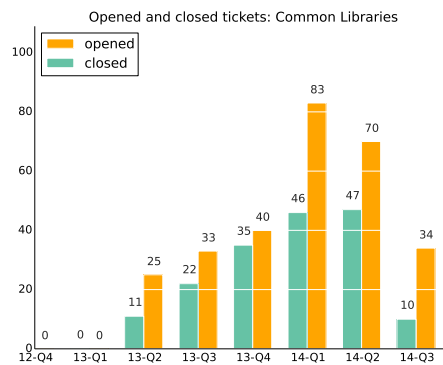
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	11	25
13-Q3	22	33
13-Q4	35	40
14-Q1	46	83
14-Q2	47	70
14-Q3	10	34

Merged and abandoned reviews: Common Libraries
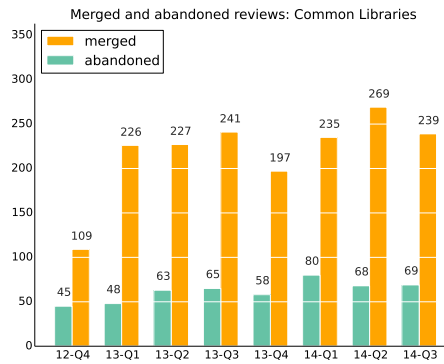
Period	Merged	Abandoned
12-Q4	109	45
13-Q1	226	48
13-Q2	227	63
13-Q3	241	65
13-Q4	197	58
14-Q1	235	80
14-Q2	269	68
14-Q3	239	69

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Common Libraries
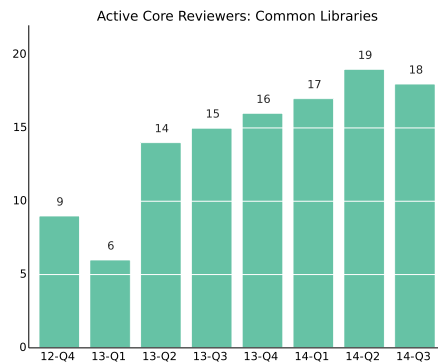
Period	Active Core
12-Q4	9
13-Q1	6
13-Q2	14
13-Q3	15
13-Q4	16
14-Q1	17
14-Q2	19
14-Q3	18

Authors Common Libraries
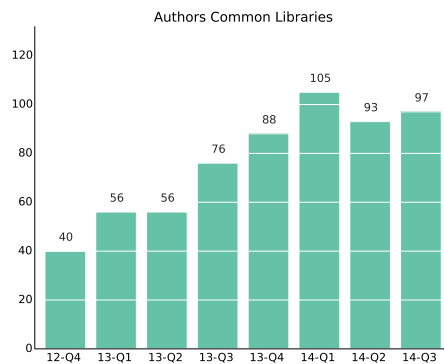
Period	Authors
12-Q4	40
13-Q1	56
13-Q2	56
13-Q3	76
13-Q4	88
14-Q1	105
14-Q2	93
14-Q3	97

Commit (s)	Author
95	Joshua Harlow
43	Doug Hellmann
28	Christian Berendt
21	Davanum Srinivas
21	Julien Danjou
18	Mike Bayer
14	Mark McLoughlin
12	Yuriy Taraday
10	Jeremy Stanley
9	Arnaud Legendre

Commit (s)	Organizations
95	Yahoo!
90	Red Hat
44	DreamHost
40	IBM
38	Mirantis
28	B1 Systems
28	VMware
16	HP
13	Rackspace
10	OpenStack Foundation

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Common Libraries
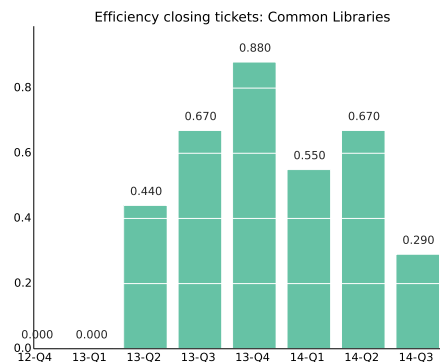
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0.44
13-Q3	0.67
13-Q4	0.88
14-Q1	0.55
14-Q2	0.67
14-Q3	0.29

Changesets efficiency Common Libraries
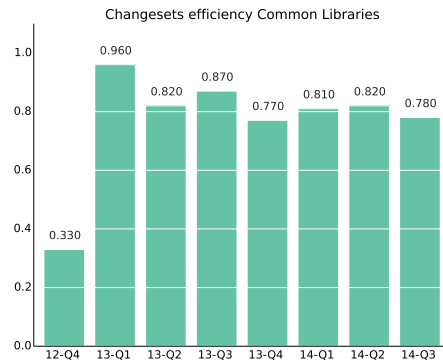
Period	Closed/Opened
12-Q4	0.33
13-Q1	0.96
13-Q2	0.82
13-Q3	0.87
13-Q4	0.77
14-Q1	0.81
14-Q2	0.82
14-Q3	0.78

Time to merge (days): Common Libraries
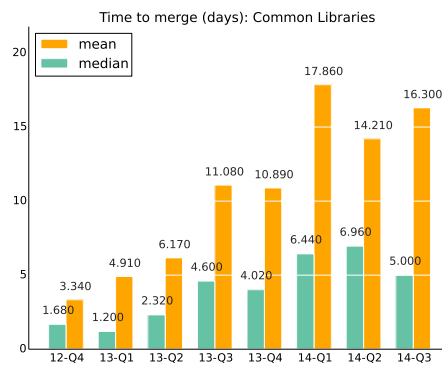
Period	Median	Mean
12-Q4	1.68	3.34
13-Q1	1.2	4.91
13-Q2	2.32	6.17
13-Q3	4.6	11.08
13-Q4	4.02	10.89
14-Q1	6.44	17.86
14-Q2	6.96	14.21
14-Q3	5.0	16.3

Patchsets per Changeset: Common Libraries
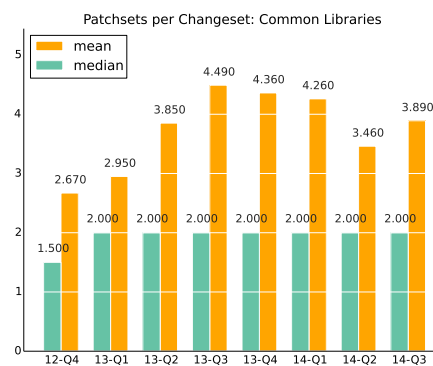
Period	Median	Mean
12-Q4	1.5	2.67
13-Q1	2.0	2.95
13-Q2	2.0	3.85
13-Q3	2.0	4.49
13-Q4	2.0	4.36
14-Q1	2.0	4.26
14-Q2	2.0	3.46
14-Q3	2.0	3.88

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Time waiting for the reviewer: Common Libraries
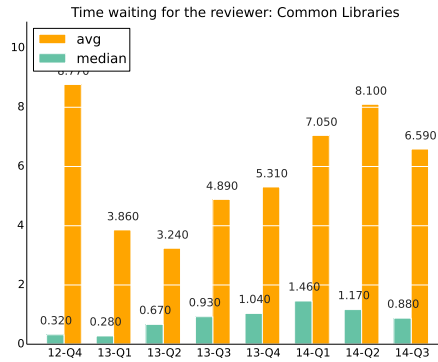
Period	Median	Mean
12-Q4	0.32	8.77
13-Q1	0.28	3.86
13-Q2	0.67	3.24
13-Q3	0.93	4.89
13-Q4	1.04	5.31
14-Q1	1.46	7.05
14-Q2	1.17	8.1
14-Q3	0.88	6.59

Time waiting for the submitter: Common Libraries
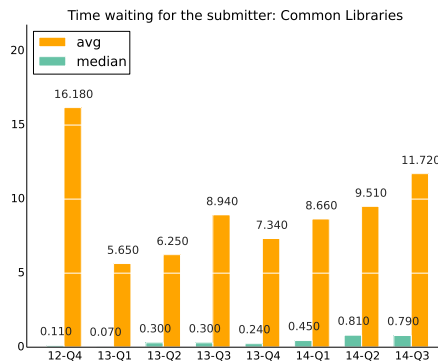
Period	Median	Mean
12-Q4	0.11	16.18
13-Q1	0.07	5.65
13-Q2	0.3	6.25
13-Q3	0.3	8.94
13-Q4	0.24	7.34
14-Q1	0.45	8.66
14-Q2	0.81	9.51
14-Q3	0.79	11.72

2.3 Deployment

Time to review activity is not available for this program.

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: Deployment
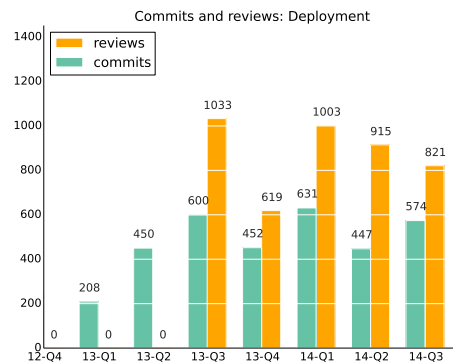
Period	Commits	Reviews
12-Q4	250	0
13-Q1	208	0
13-Q2	450	0
13-Q3	600	1033
13-Q4	452	619
14-Q1	631	1003
14-Q2	447	915
14-Q3	574	821

Opened and closed tickets: Deployment
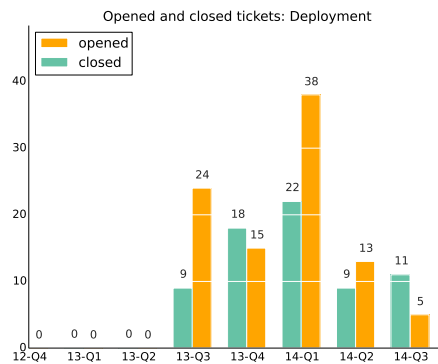
Period	Closed	Opened
12-Q4	0	0
13-Q1	0	0
13-Q2	0	0
13-Q3	9	24
13-Q4	18	15
14-Q1	22	38
14-Q2	9	13
14-Q3	11	5

Merged and abandoned reviews: Deployment
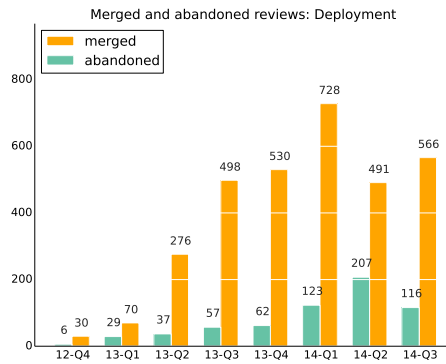
Period	Merged	Abandoned
12-Q4	30	6
13-Q1	70	29
13-Q2	276	37
13-Q3	498	57
13-Q4	530	62
14-Q1	728	123
14-Q2	491	207
14-Q3	566	116

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Deployment
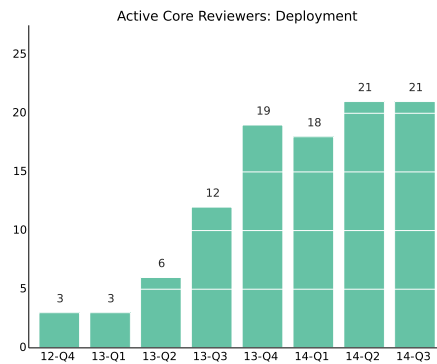
Period	Active Core
12-Q4	3
13-Q1	3
13-Q2	6
13-Q3	12
13-Q4	19
14-Q1	18
14-Q2	21
14-Q3	21

Authors Deployment
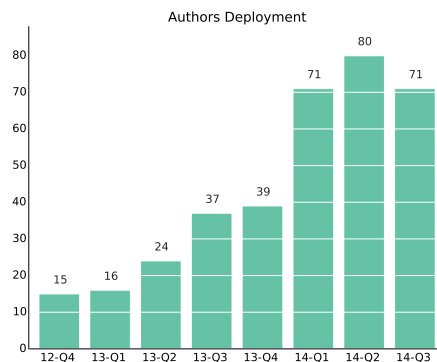
Period	Authors
12-Q4	15
13-Q1	16
13-Q2	24
13-Q3	37
13-Q4	39
14-Q1	71
14-Q2	80
14-Q3	71

Commit (s)	Author
54	Dougal Matthews
41	Petr Blaho
38	Steve Kowalik
36	rbtcollins
30	Jay Dobies
29	James Slagle
27	Dan Prince
27	Derek Higgins
27	Giulio
23	Jan Provaznik

Commit (s)	Organizations
331	Red Hat
141	HP
43	Canonical
7	B1 Systems
6	NEC
3	JPBerlin
3	SUSE
2	OpenStack Foundation
1	Cisco Systems
1	IBM

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Deployment
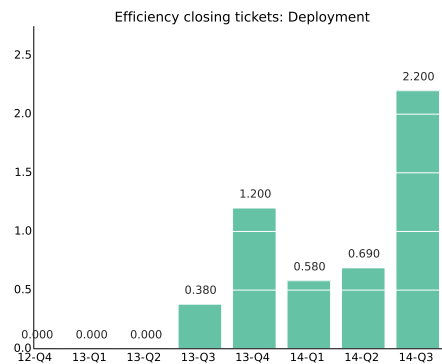
Period	Closed/Opened
12-Q4	0
13-Q1	0
13-Q2	0
13-Q3	0.38
13-Q4	1.2
14-Q1	0.58
14-Q2	0.69
14-Q3	2.2

Bitergia

Changesets efficiency Deployment
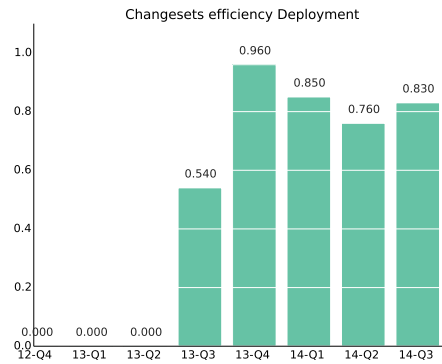
Period	Closed/Opened
12-Q4	0.0
13-Q1	0.0
13-Q2	0.0
13-Q3	0.54
13-Q4	0.96
14-Q1	0.85
14-Q2	0.76
14-Q3	0.83

Patchsets per Changeset: Deployment
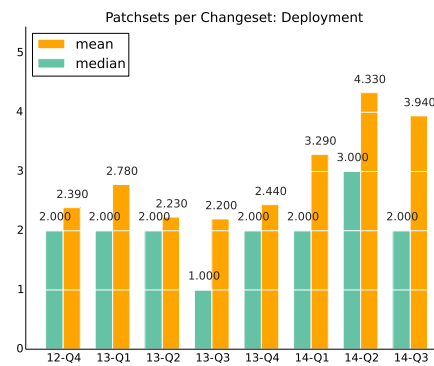
Period	Median	Mean
12-Q4	2.0	2.39
13-Q1	2.0	2.78
13-Q2	2.0	2.23
13-Q3	1.0	2.2
13-Q4	2.0	2.44
14-Q1	2.0	3.29
14-Q2	3.0	4.33
14-Q3	2.0	3.93

Time waiting for the reviewer: Deployment
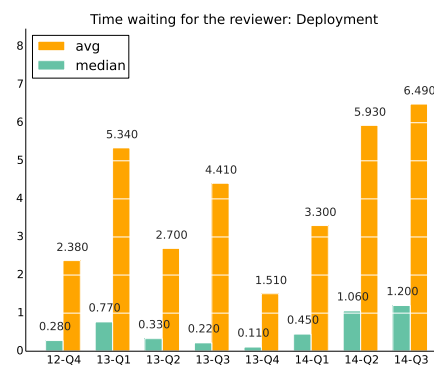
Period	Median	Mean
12-Q4	0.28	2.38
13-Q1	0.77	5.34
13-Q2	0.33	2.7
13-Q3	0.22	4.41
13-Q4	0.11	1.51
14-Q1	0.45	3.3
14-Q2	1.06	5.93
14-Q3	1.2	6.49

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Time waiting for the submitter: Deployment
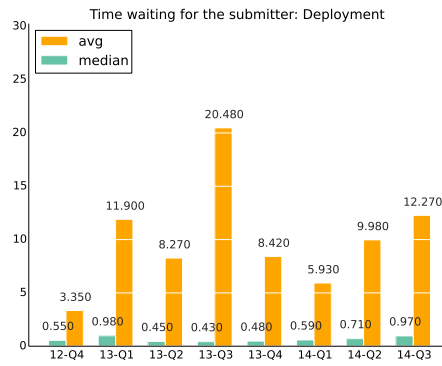
Period	Median	Mean
12-Q4	0.55	3.35
13-Q1	0.98	11.9
13-Q2	0.45	8.27
13-Q3	0.43	20.48
13-Q4	0.48	8.42
14-Q1	0.59	5.93
14-Q2	0.71	9.98
14-Q3	0.97	12.27

2.4 Devstack

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
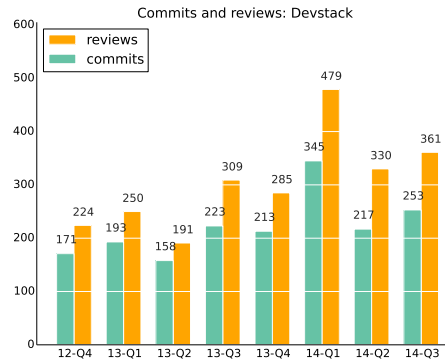

Period	Commits	Reviews
12-Q4	171	224
13-Q1	193	250
13-Q2	158	191
13-Q3	223	309
13-Q4	213	285
14-Q1	345	479
14-Q2	217	330
14-Q3	253	361
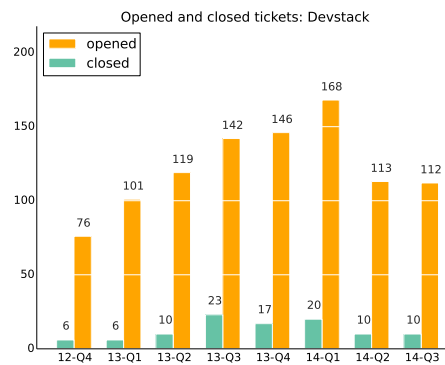
Period	Closed	Opened
12-Q4	6	76
13-Q1	6	101
13-Q2	10	119
13-Q3	23	142
13-Q4	17	146
14-Q1	20	168
14-Q2	10	113
14-Q3	10	112

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Merged and abandoned reviews: Devstack
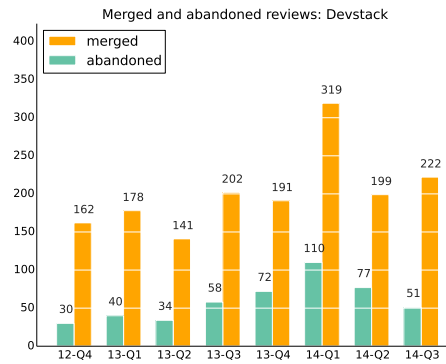
Period	Merged	Abandoned
12-Q4	162	30
13-Q1	178	40
13-Q2	141	34
13-Q3	202	58
13-Q4	191	72
14-Q1	319	110
14-Q2	199	77
14-Q3	222	51

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Devstack
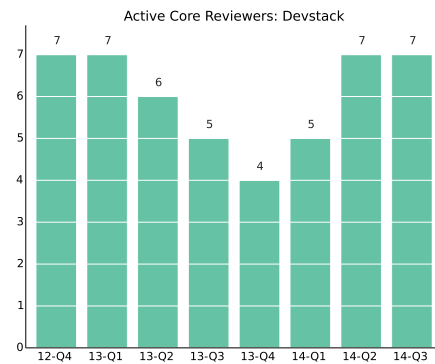
Period	Active Core
12-Q4	7
13-Q1	7
13-Q2	6
13-Q3	5
13-Q4	4
14-Q1	5
14-Q2	7
14-Q3	7

Authors Devstack
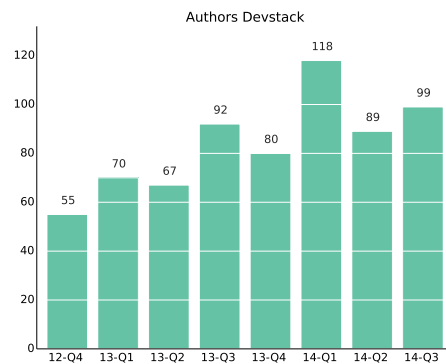
Period	Authors
12-Q4	55
13-Q1	70
13-Q2	67
13-Q3	92
13-Q4	80
14-Q1	118
14-Q2	89
14-Q3	99

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Commit (s)	Author
33	Dean Troyer
13	Ian Wienand
13	Sean Dague
8	Adam Gandelman
8	Bob Ball
7	Brant Knudson
6	Jim Rollenhagen
6	Joe Gordon
6	Steve Baker
5	afazekas

Commit (s)	Organizations
56	Red Hat
33	HP
33	Nebula
27	IBM
9	Citrix
9	Mirantis
8	Canonical
8	NEC
5	B1 Systems
5	Metacloud

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.


Efficiency closing tickets: Devstack
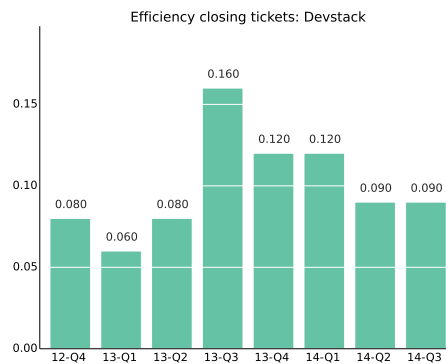
Period	Closed/Opened
12-Q4	0.08
13-Q1	0.06
13-Q2	0.08
13-Q3	0.16
13-Q4	0.12
14-Q1	0.12
14-Q2	0.09
14-Q3	0.09

Changesets efficiency Devstack
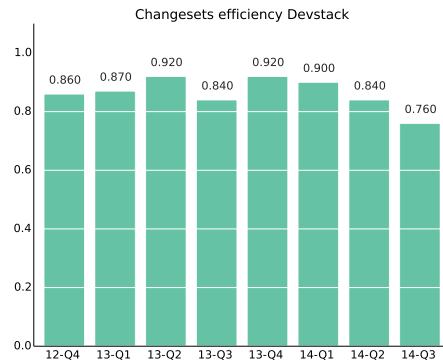
Period	Closed/Opened
12-Q4	0.86
13-Q1	0.87
13-Q2	0.92
13-Q3	0.84
13-Q4	0.92
14-Q1	0.9
14-Q2	0.84
14-Q3	0.76

Time to merge (days): Devstack
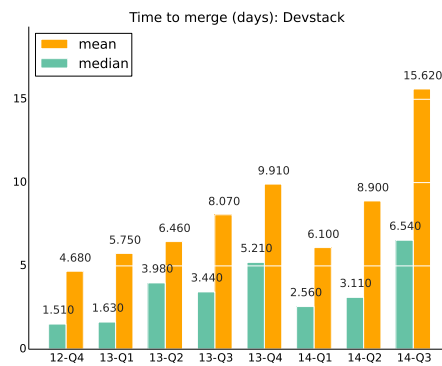
Period	Median	Mean
12-Q4	1.51	4.68
13-Q1	1.63	5.75
13-Q2	3.98	6.46
13-Q3	3.44	8.07
13-Q4	5.21	9.91
14-Q1	2.56	6.1
14-Q2	3.11	8.9
14-Q3	6.54	15.62

Patchsets per Changeset: Devstack
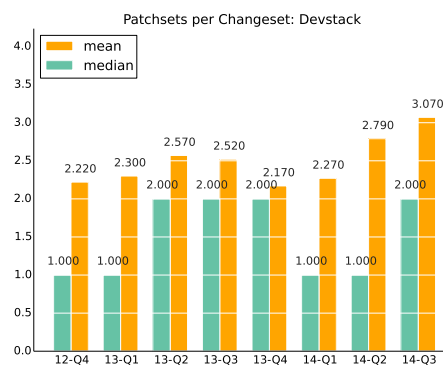
Period	Median	Mean
12-Q4	1.0	2.22
13-Q1	1.0	2.3
13-Q2	2.0	2.57
13-Q3	2.0	2.52
13-Q4	2.0	2.17
14-Q1	1.0	2.27
14-Q2	1.0	2.79
14-Q3	2.0	3.07

Time waiting for the reviewer: Devstack
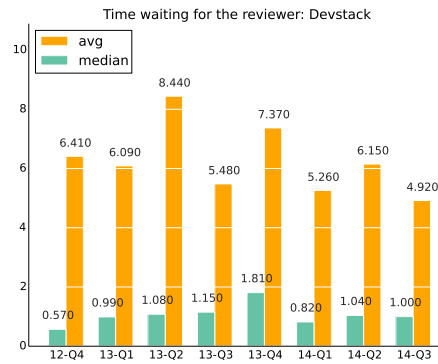
Period	Median	Mean
12-Q4	0.57	6.41
13-Q1	0.99	6.09
13-Q2	1.08	8.44
13-Q3	1.15	5.48
13-Q4	1.81	7.37
14-Q1	0.82	5.26
14-Q2	1.04	6.15
14-Q3	1.0	4.92

Time waiting for the submitter: Devstack
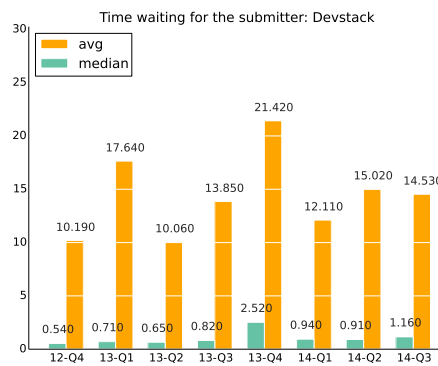
Period	Median	Mean
12-Q4	0.54	10.19
13-Q1	0.71	17.64
13-Q2	0.65	10.06
13-Q3	0.82	13.85
13-Q4	2.52	21.42
14-Q1	0.94	12.11
14-Q2	0.91	15.02
14-Q3	1.16	14.53

2.5 Documentation

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
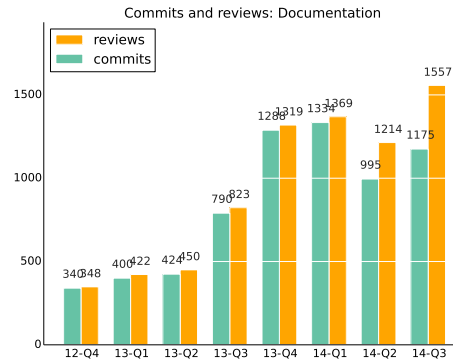
Period	Commits	Reviews
12-Q4	340	348
13-Q1	400	422
13-Q2	424	450
13-Q3	790	823
13-Q4	1288	1319
14-Q1	1334	1369
14-Q2	995	1214
14-Q3	1175	1557

Commits and reviews: Documentation
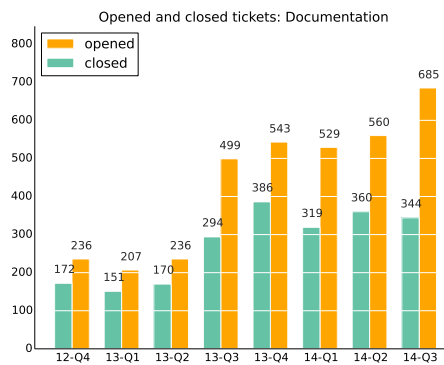
Period	Closed	Opened
12-Q4	172	236
13-Q1	151	207
13-Q2	170	236
13-Q3	294	499
13-Q4	386	543
14-Q1	319	529
14-Q2	360	560
14-Q3	344	685

Opened and closed tickets: Documentation
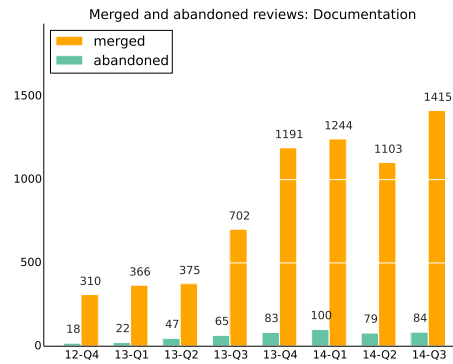
Period	Merged	Abandoned
12-Q4	310	18
13-Q1	366	22
13-Q2	375	47
13-Q3	702	65
13-Q4	1191	83
14-Q1	1244	100
14-Q2	1103	79
14-Q3	1415	84

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
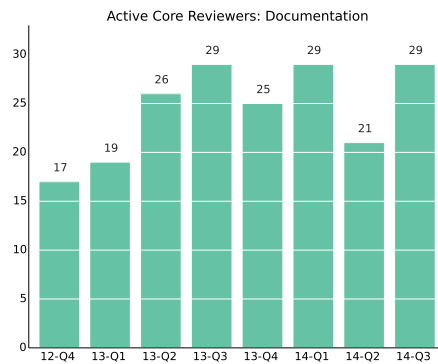
Period	Active Core
12-Q4	17
13-Q1	19
13-Q2	26
13-Q3	29
13-Q4	25
14-Q1	29
14-Q2	21
14-Q3	29
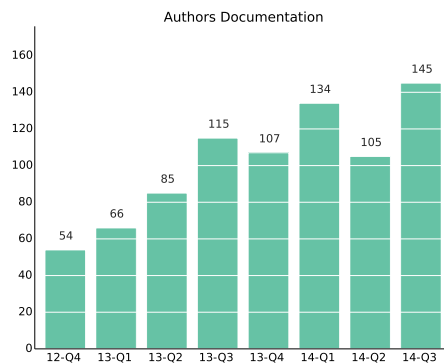
Period	Authors
12-Q4	54
13-Q1	66
13-Q2	85
13-Q3	115
13-Q4	107
14-Q1	134
14-Q2	105
14-Q3	145

Commit (s)	Author
264	Andreas Jaeger
156	Christian Berendt
132	Roger Luethi
55	Pranav Salunke
52	Anne Gentle
52	KATO Tomoyuki
46	Gauvain Pocentek
43	Shilla Saebi
28	Matt Kassawara
18	sayalilunkad

Commit (s)	Organizations
264	SUSE
160	B1 Systems
110	Rackspace
55	Aptira
52	Fujitsu
46	Objectif-libre
45	Comcast
42	HP
28	Red Hat
26	IBM

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.


Efficiency closing tickets: Documentation
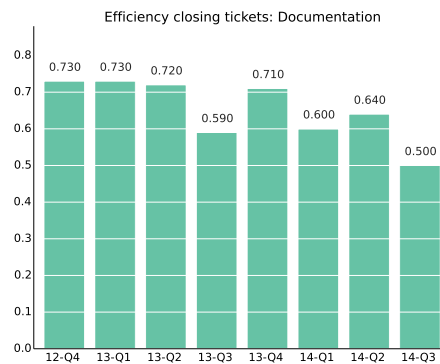
Period	Closed/Opened
12-Q4	0.73
13-Q1	0.73
13-Q2	0.72
13-Q3	0.59
13-Q4	0.71
14-Q1	0.6
14-Q2	0.64
14-Q3	0.5

Changesets efficiency Documentation
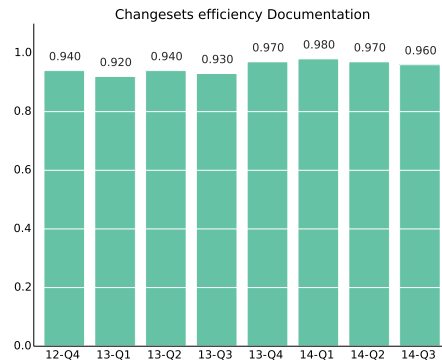
Period	Closed/Opened
12-Q4	0.94
13-Q1	0.92
13-Q2	0.94
13-Q3	0.93
13-Q4	0.97
14-Q1	0.98
14-Q2	0.97
14-Q3	0.96

Time to merge (days): Documentation
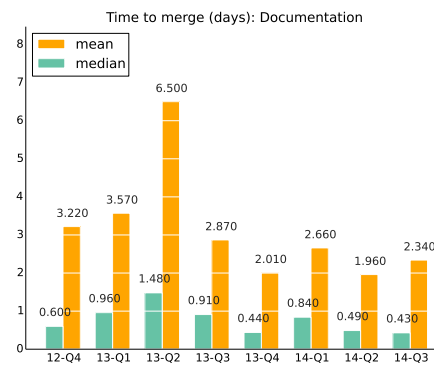
Period	Median	Mean
12-Q4	0.6	3.22
13-Q1	0.96	3.57
13-Q2	1.48	6.5
13-Q3	0.91	2.87
13-Q4	0.44	2.01
14-Q1	0.84	2.66
14-Q2	0.49	1.96
14-Q3	0.43	2.34

Patchsets per Changeset: Documentation
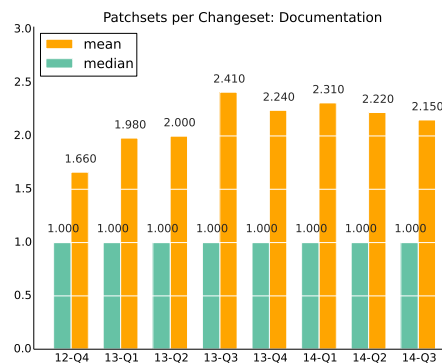
Period	Median	Mean
12-Q4	1.0	1.66
13-Q1	1.0	1.98
13-Q2	1.0	2.0
13-Q3	1.0	2.41
13-Q4	1.0	2.24
14-Q1	1.0	2.31
14-Q2	1.0	2.22
14-Q3	1.0	2.15

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Time waiting for the reviewer: Documentation
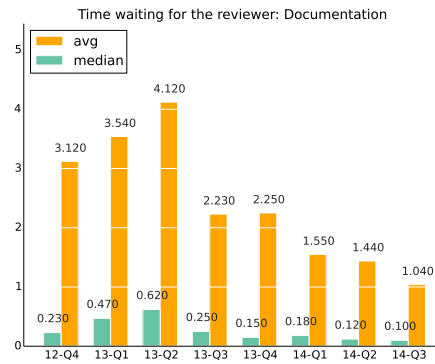
Period	Median	Mean
12-Q4	0.23	3.12
13-Q1	0.47	3.54
13-Q2	0.62	4.12
13-Q3	0.25	2.23
13-Q4	0.15	2.25
14-Q1	0.18	1.55
14-Q2	0.12	1.44
14-Q3	0.1	1.04

Time waiting for the submitter: Documentation
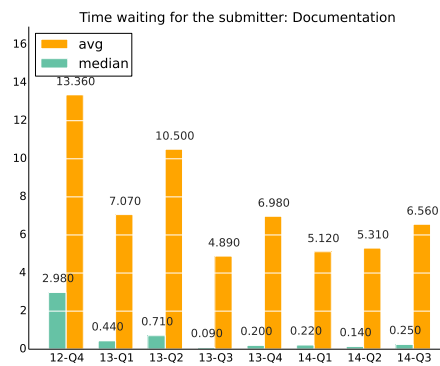
Period	Median	Mean
12-Q4	2.98	13.36
13-Q1	0.44	7.07
13-Q2	0.71	10.5
13-Q3	0.09	4.89
13-Q4	0.2	6.98
14-Q1	0.22	5.12
14-Q2	0.14	5.31
14-Q3	0.25	6.56

2.6 Infrastructure

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.
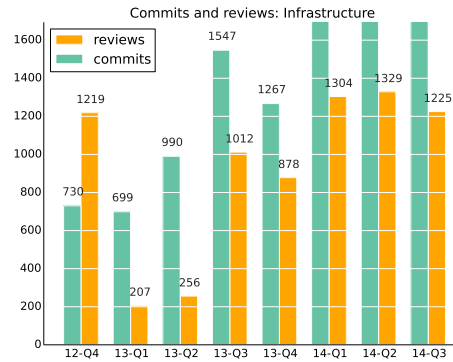
Period	Commits	Reviews
12-Q4	730	1219
13-Q1	699	207
13-Q2	990	256
13-Q3	1547	1012
13-Q4	1267	878
14-Q1	1950	1304
14-Q2	1925	1329
14-Q3	1837	1225
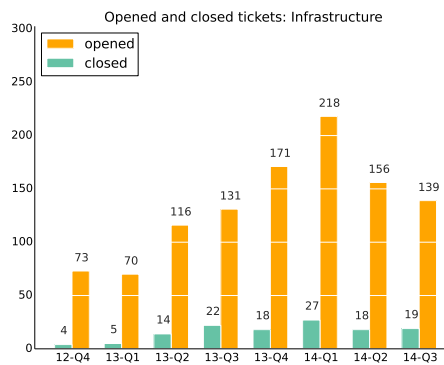
Period	Closed	Opened
12-Q4	4	73
13-Q1	5	70
13-Q2	14	116
13-Q3	22	131
13-Q4	18	171
14-Q1	27	218
14-Q2	18	156
14-Q3	19	139

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Merged and abandoned reviews: Infrastructure
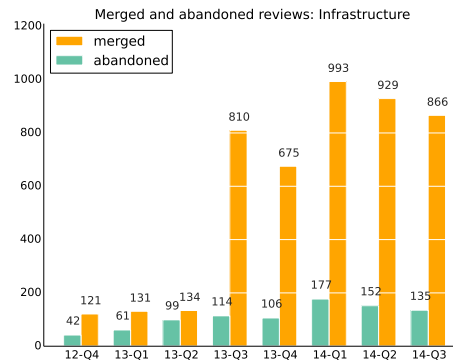
Period	Merged	Abandoned
12-Q4	121	42
13-Q1	131	61
13-Q2	134	99
13-Q3	810	114
13-Q4	675	106
14-Q1	993	177
14-Q2	929	152
14-Q3	866	135

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Infrastructure
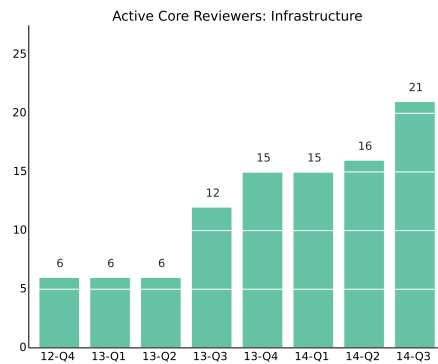
Period	Active Core
12-Q4	6
13-Q1	6
13-Q2	6
13-Q3	12
13-Q4	15
14-Q1	15
14-Q2	16
14-Q3	21

Authors Infrastructure
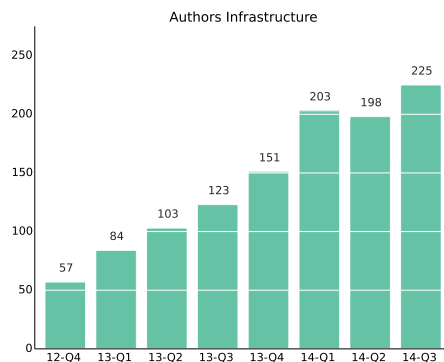
Period	Authors
12-Q4	57
13-Q1	84
13-Q2	103
13-Q3	123
13-Q4	151
14-Q1	203
14-Q2	198
14-Q3	225
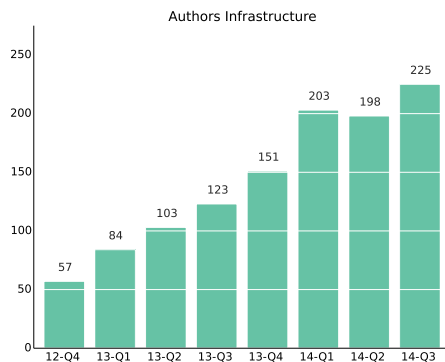
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Authors Infrastructure

He was an Austrian physicist famous for his founding contributions in the fields of statistical mechanics and statistical thermodynamics. He was one of the most important advocates for atomic theory at a time when that scientific model was still highly controversial.

Commit (s)	Author
137	James E. Blair
96	Andreas Jaeger
88	Michael Krotscheck
83	Jeremy Stanley
73	Clark Boylan
68	Matt Riedemann
58	Monty Taylor
51	Sean Dague
42	Derek Higgins
40	Joe Gordon

Commit (s)	Organizations
718	HP
267	Red Hat
146	IBM
138	Mirantis
117	OpenStack Foundation
101	SUSE
98	Rackspace
50	Canonical
30	Xemeti Kft.
26	VMware

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.

Efficiency closing tickets: Infrastructure
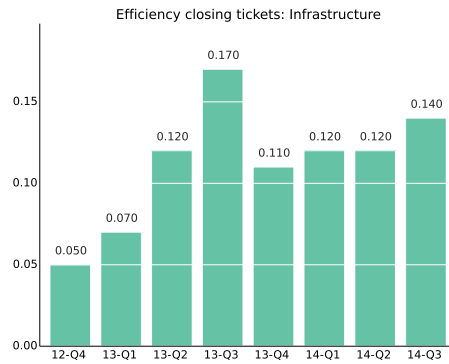
Period	Closed/Opened
12-Q4	0.05
13-Q1	0.07
13-Q2	0.12
13-Q3	0.17
13-Q4	0.11
14-Q1	0.12
14-Q2	0.12
14-Q3	0.14

Changesets efficiency Infrastructure
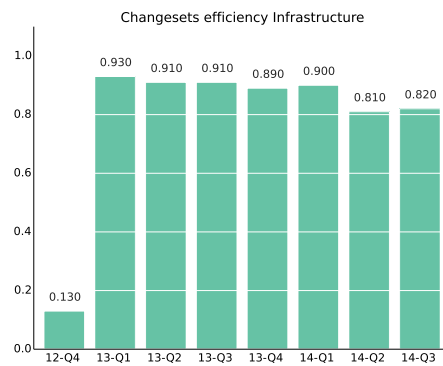
Period	Closed/Opened
12-Q4	0.13
13-Q1	0.93
13-Q2	0.91
13-Q3	0.91
13-Q4	0.89
14-Q1	0.9
14-Q2	0.81
14-Q3	0.82

Time to merge (days): Infrastructure
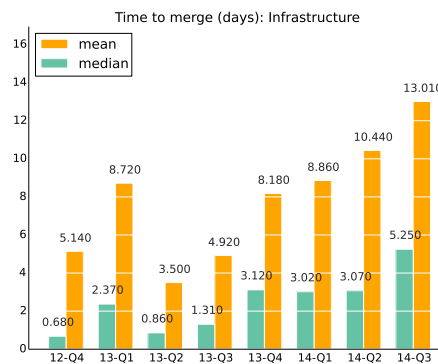
Period	Median	Mean
12-Q4	0.68	5.14
13-Q1	2.37	8.72
13-Q2	0.86	3.5
13-Q3	1.31	4.92
13-Q4	3.12	8.18
14-Q1	3.02	8.86
14-Q2	3.07	10.44
14-Q3	5.25	13.01

Patchsets per Changeset: Infrastructure
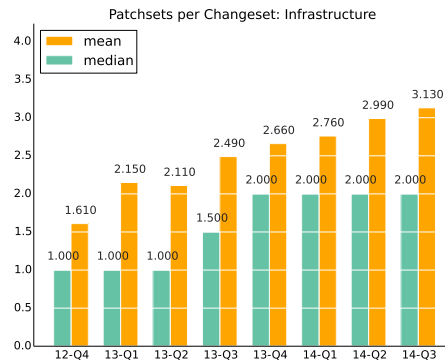
Period	Median	Mean
12-Q4	1.0	1.61
13-Q1	1.0	2.15
13-Q2	1.0	2.11
13-Q3	1.5	2.49
13-Q4	2.0	2.66
14-Q1	2.0	2.76
14-Q2	2.0	2.99
14-Q3	2.0	3.13

Time waiting for the reviewer: Infrastructure
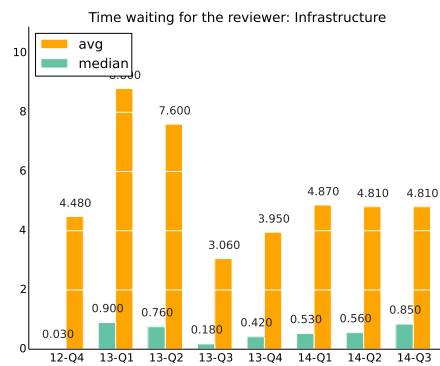
Period	Median	Mean
12-Q4	0.03	4.48
13-Q1	0.9	8.8
13-Q2	0.76	7.6
13-Q3	0.18	3.06
13-Q4	0.42	3.95
14-Q1	0.53	4.87
14-Q2	0.56	4.81
14-Q3	0.85	4.81

Time waiting for the submitter: Infrastructure
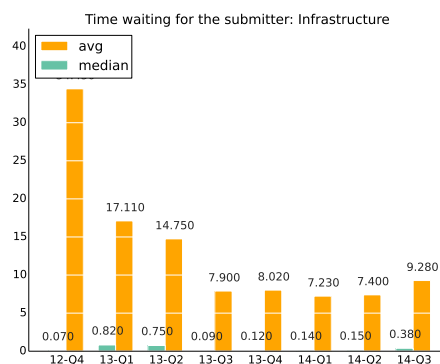
Period	Median	Mean
12-Q4	0.07	34.45
13-Q1	0.82	17.11
13-Q2	0.75	14.75
13-Q3	0.09	7.9
13-Q4	0.12	8.02
14-Q1	0.14	7.23
14-Q2	0.15	7.4
14-Q3	0.38	9.28

2.7 Quality Assurance

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.


Commits and reviews: Quality Assurance
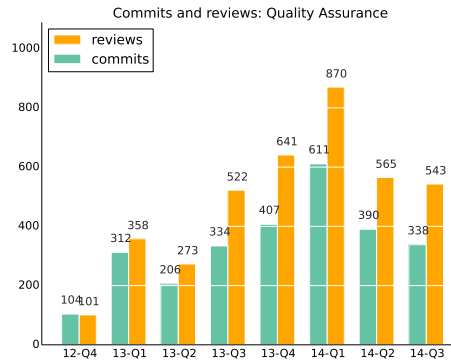
Period	Commits	Reviews
12-Q4	104	101
13-Q1	312	358
13-Q2	206	273
13-Q3	334	522
13-Q4	407	641
14-Q1	611	870
14-Q2	390	565
14-Q3	338	543

Opened and closed tickets: Quality Assurance
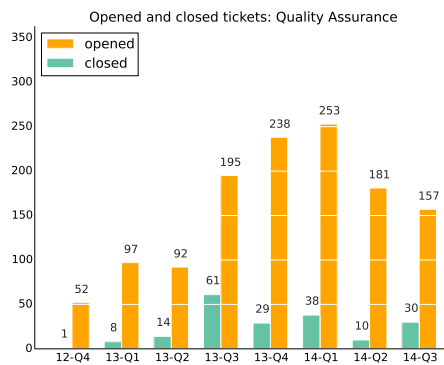
Period	Closed	Opened
12-Q4	1	52
13-Q1	8	97
13-Q2	14	92
13-Q3	61	195
13-Q4	29	238
14-Q1	38	253
14-Q2	10	181
14-Q3	30	157

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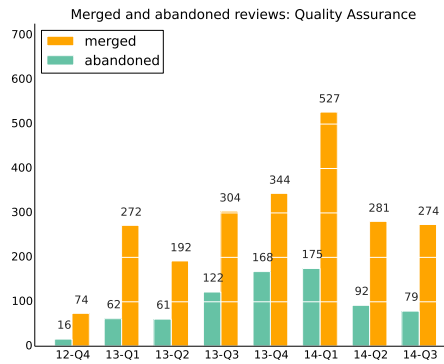
| Period	Merged	Abandoned
12-Q4	74	16
13-Q1	272	62
13-Q2	192	61
13-Q3	304	122
13-Q4	344	168
14-Q1	527	175
14-Q2	281	92
14-Q3	274	79

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter
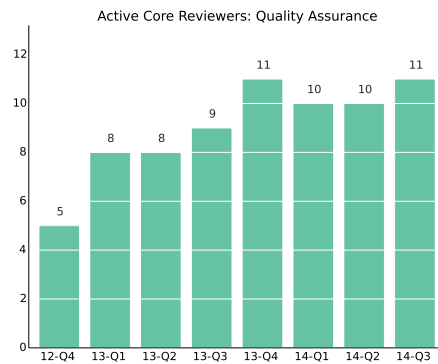
Period	Active Core
12-Q4	5
13-Q1	8
13-Q2	8
13-Q3	9
13-Q4	11
14-Q1	10
14-Q2	10
14-Q3	11

Period	Authors
12-Q4	25
13-Q1	49
13-Q2	58
13-Q3	78
13-Q4	82
14-Q1	124
14-Q2	89
14-Q3	97

Commit (s)	Author
33	Matthew Treinish
26	Andrea Frittoli
22	Joe Gordon
21	Adam Gandelman
17	Ghanshyam Mann
15	Marc Koderer
10	Sean Dague
8	ekhugen
8	Masayuki Igawa
7	Emilien Macchi

Commit (s)	Organizations
120	HP
44	Red Hat
34	IBM
34	NEC
22	Canonical
15	Deutsche Telekom
8	NTT
7	Mirantis
4	Calsoft Inc.
4	Cisco Systems

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review process.


Efficiency closing tickets: Quality Assurance
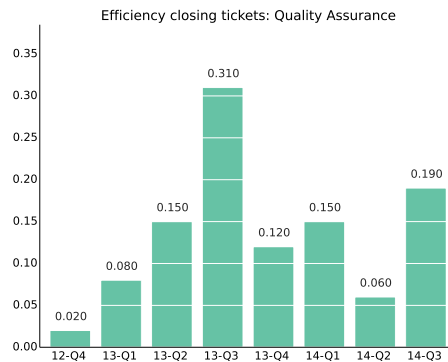
Period	Closed/Opened
12-Q4	0.02
13-Q1	0.08
13-Q2	0.15
13-Q3	0.31
13-Q4	0.12
14-Q1	0.15
14-Q2	0.06
14-Q3	0.19

Changesets efficiency Quality Assurance
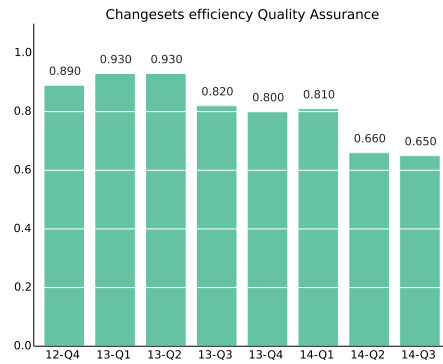
Period	Closed/Opened
12-Q4	0.89
13-Q1	0.93
13-Q2	0.93
13-Q3	0.82
13-Q4	0.8
14-Q1	0.81
14-Q2	0.66
14-Q3	0.65

Time to merge (days): Quality Assurance
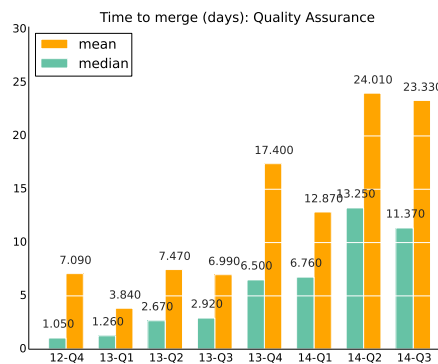
Period	Median	Mean
12-Q4	1.05	7.09
13-Q1	1.26	3.84
13-Q2	2.67	7.47
13-Q3	2.92	6.99
13-Q4	6.5	17.4
14-Q1	6.76	12.87
14-Q2	13.25	24.01
14-Q3	11.37	23.33

Patchsets per Changeset: Quality Assurance
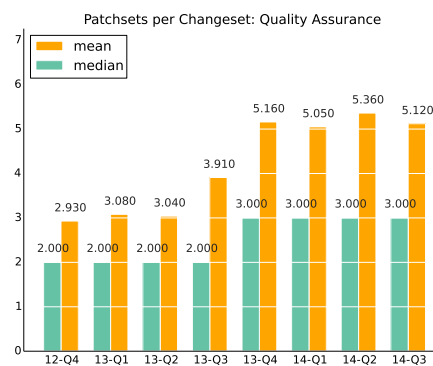
Period	Median	Mean
12-Q4	2.0	2.93
13-Q1	2.0	3.08
13-Q2	2.0	3.04
13-Q3	2.0	3.91
13-Q4	3.0	5.16
14-Q1	3.0	5.05
14-Q2	3.0	5.36
14-Q3	3.0	5.1

Time waiting for the reviewer: Quality Assurance
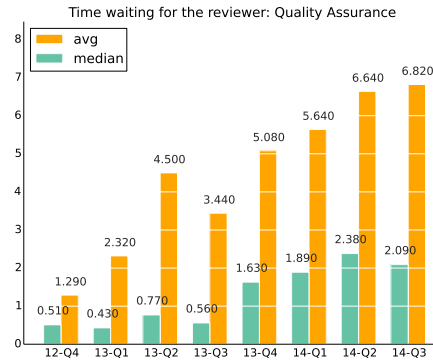
Period	Median	Mean
12-Q4	0.51	1.29
13-Q1	0.43	2.32
13-Q2	0.77	4.5
13-Q3	0.56	3.44
13-Q4	1.63	5.08
14-Q1	1.89	5.64
14-Q2	2.38	6.64
14-Q3	2.09	6.82

Time waiting for the submitter: Quality Assurance
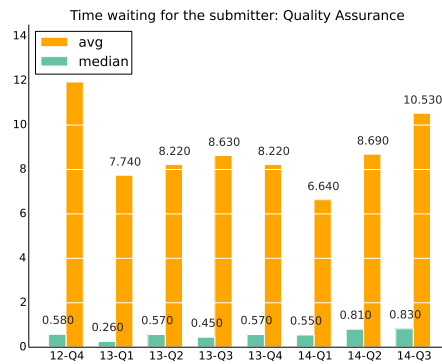
Period	Median	Mean
12-Q4	0.58	11.94
13-Q1	0.26	7.74
13-Q2	0.57	8.22
13-Q3	0.45	8.63
13-Q4	0.57	8.22
14-Q1	0.55	6.64
14-Q2	0.81	8.69
14-Q3	0.83	10.53

2.8 Release Cycle Management

Tickets activity information is not available. This affects the activity of opened and closed tickets and the BMI chart.

Activity: Commits in Git, submitted, merged and abandoned reviews in Gerrit and opened and closed issues in Launchpad.

Commits and reviews: Release cycle management
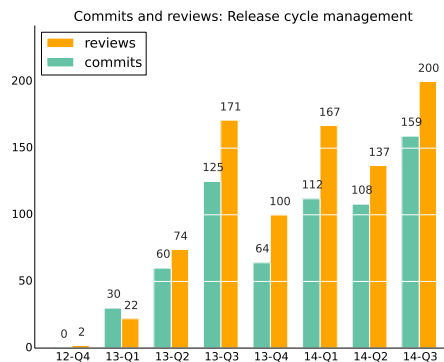
Period	Commits	Reviews
12-Q4	0	2
13-Q1	30	22
13-Q2	60	74
13-Q3	125	171
13-Q4	64	100
14-Q1	112	167
14-Q2	108	137
14-Q3	158	200

Merged and abandoned reviews: Release cycle management
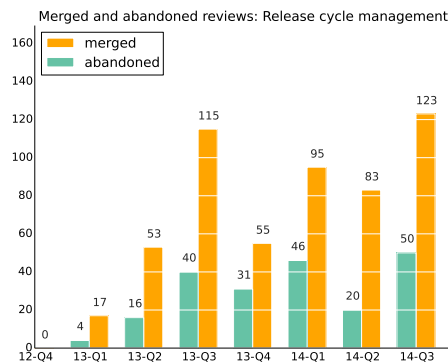
Period	Merged	Abandoned
12-Q4	0	2
13-Q1	17	4
13-Q2	53	16
13-Q3	115	40
13-Q4	55	31
14-Q1	95	46
14-Q2	83	20
14-Q3	123	50

Community: Active core reviewers in Gerrit, active authors in Git, top authors and organizations in the last quarter

Active Core Reviewers: Release cycle management
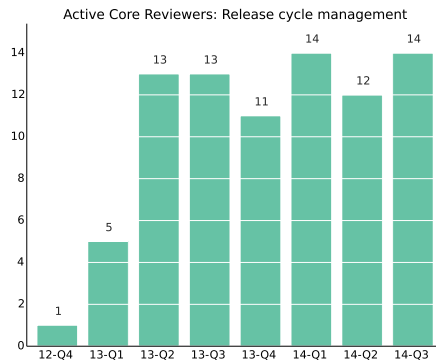
Period	Active Core
12-Q4	1
13-Q1	5
13-Q2	13
13-Q3	13
13-Q4	11
14-Q1	14
14-Q2	12
14-Q3	14

Authors Release cycle management
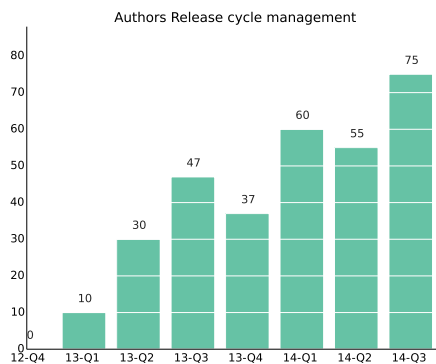
Period	Authors
12-Q4	0
13-Q1	10
13-Q2	30
13-Q3	47
13-Q4	37
14-Q1	60
14-Q2	55
14-Q3	75

Commit (s)	Author
15	Doug Hellmann
9	Andreas Jaeger
8	Davanum Srinivas
8	Radomir Dopieralski
7	Sean Dague
7	Thierry Carrez
6	Joshua Harlow
5	Christian Berendt
4	Flavio Percoco
4	Ihar Hrachyshka

Commit (s)	Organizations
36	Red Hat
21	HP
18	IBM
15	DreamHost
11	OpenStack Foundation
10	SUSE
7	Mirantis
6	Yahoo!
5	B1 Systems
5	Rackspace

Process: Efficiency closing changesets and tickets, time to review (mean and median), number of patchests (iterations) per changeset and study on the time waiting for a reviewer or submitter action in the patchset review

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process.

Time to merge (days): Release cycle management
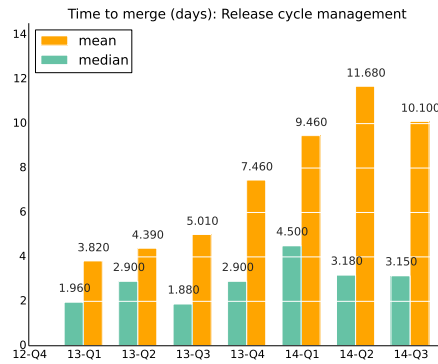
Period	Median	Mean
12-Q4	nan	nan
13-Q1	1.96	3.82
13-Q2	2.9	4.39
13-Q3	1.88	5.01
13-Q4	2.9	7.46
14-Q1	4.5	9.46
14-Q2	3.18	11.68
14-Q3	3.15	10.1

Changesets efficiency Release cycle management
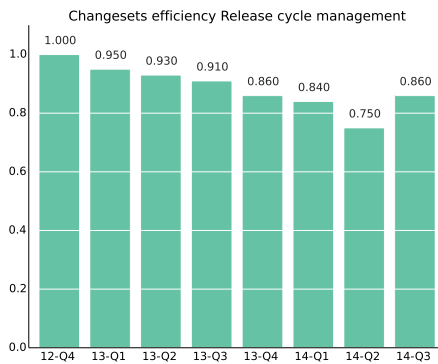
Period	Closed/Opened
12-Q4	1.0
13-Q1	0.95
13-Q2	0.93
13-Q3	0.91
13-Q4	0.86
14-Q1	0.84
14-Q2	0.75
14-Q3	0.86

Patchsets per Changeset: Release cycle management
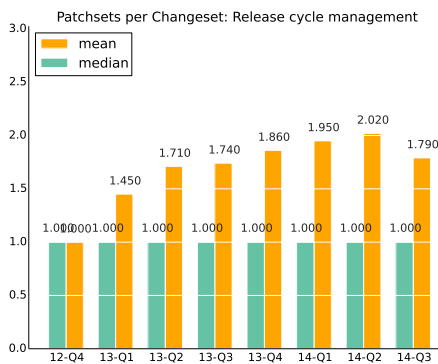
Period	Median	Mean
12-Q4	1.0	1.0
13-Q1	1.0	1.45
13-Q2	1.0	1.71
13-Q3	1.0	1.74
13-Q4	1.0	1.86
14-Q1	1.0	1.95
14-Q2	1.0	2.02
14-Q3	1.0	1.79

Bitergia

Time waiting for the reviewer: Release cycle management
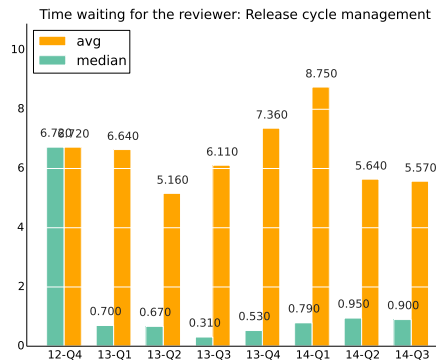
Period	Median	Mean
12-Q4	6.72	6.72
13-Q1	0.7	6.64
13-Q2	0.67	5.16
13-Q3	0.31	6.11
13-Q4	0.53	7.36
14-Q1	0.79	8.75
14-Q2	0.95	5.64
14-Q3	0.9	5.57

Time waiting for the submitter: Release cycle management
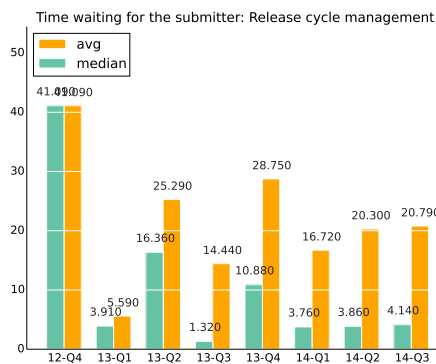
Period	Median	Mean
12-Q4	41.09	41.09
13-Q1	3.91	5.59
13-Q2	16.36	25.29
13-Q3	1.32	14.44
13-Q4	10.88	28.75
14-Q1	3.76	16.72
14-Q2	3.86	20.3
14-Q3	4.14	20.79

Chapter 3

General Activity and Community Evolution

3.1   Git Community Structure
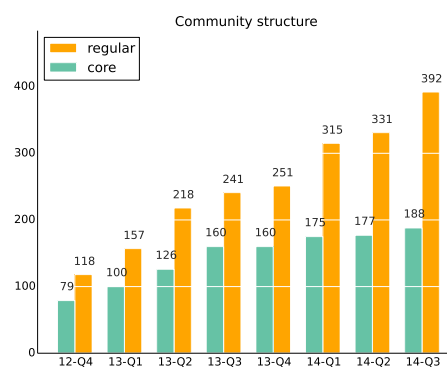
Community structure

Period	Core	Regular	Occasional
12-Q4	79	118	174
13-Q1	100	157	236
13-Q2	126	218	277
13-Q3	160	241	384
13-Q4	160	251	360
14-Q1	175	315	477
14-Q2	177	331	429
14-Q3	188	392	559

Main Git Contributors
Last quarter of 2013 and first quarter of 2014

Commit (s)	Author	Commit (s)	Author
376	Andreas Jaeger	481	Andreas Jaeger
180	James E. Blair	232	Sean Dague
179	Sean Dague	224	James E. Blair
178	Sergey Lukjanov	222	rbtcollins
135	Joe Gordon	200	Brant Knudson
131	Diane Fleming	197	Jeremy Stanley
121	Angus Salkeld	169	Joe Gordon
115	Dan Prince	152	Sergey Lukjanov
109	rbtcollins	123	Shilla Saebi
94	Flavio Percoco	120	Derek Higgins

Last two quarters main git contributors

Commit (s)	Author	Commit (s)	Author
364	Andreas Jaeger	474	Andreas Jaeger
228	Sean Dague	281	Christian Berendt
161	Christian Berendt	150	Flavio Percoco
154	Clark Boylan	149	James E. Blair
144	Joshua Harlow	144	Matt Riedemann
121	Matt Riedemann	134	Roger Luethi
116	Brant Knudson	128	Jeremy Stanley
114	Joe Gordon	122	Steve Martinelli
109	James E. Blair	116	Brant Knudson
100	Sergey Lukjanov	112	Sean Dague

Developers per Month

Developers per month
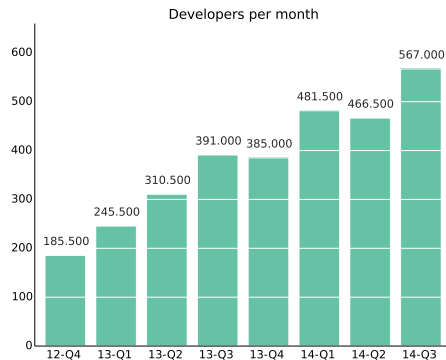
Period	Authors per month
12-Q4	185.5
13-Q1	245.5
13-Q2	310.5
13-Q3	391.0
13-Q4	385.0
14-Q1	481.5
14-Q2	466.5
14-Q3	567.0

3.2 Mailing Lists

Emails sent
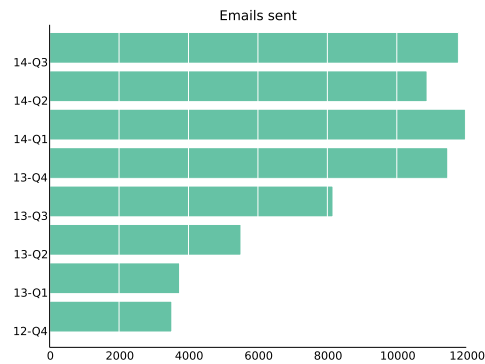
Period	Emails
12-Q4	3519
13-Q1	3743
13-Q2	5511
13-Q3	8162
13-Q4	11466
14-Q1	11977
14-Q2	10872
14-Q3	11775

People sending emails
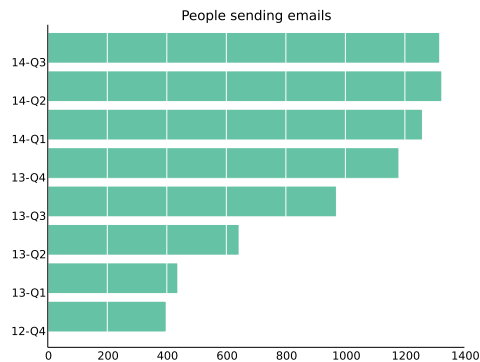
Period	People
12-Q4	398
13-Q1	437
13-Q2	643
13-Q3	970
13-Q4	1180
14-Q1	1259
14-Q2	1324
14-Q3	1317

People initiating threads
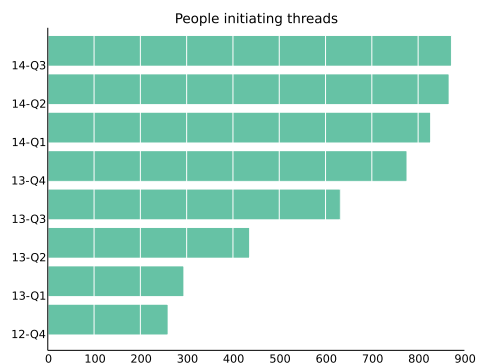
Period	People
12-Q4	260
13-Q1	294
13-Q2	436
13-Q3	632
13-Q4	776
14-Q1	827
14-Q2	867
14-Q3	872

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Initial Author and Date	Subject	Number Messages
Thierry Carrez 2014-08-05	[openstack-dev] [all] The future of the integrated release	185
Daniel P. Berrange 2014-09-04	[openstack-dev] [nova] Averting the Nova crisis by splitting out virt drivers	126
Flavio Percoco 2014-09-04	[openstack-dev] [Zaqar] Comments on the concerns arose during the TC meeting	85
Mark McClain 2014-08-04	[openstack-dev] [Neutron] Group Based Policy and the way forward	72
Monty Taylor 2014-09-18	[openstack-dev] Thoughts on OpenStack Layers and a Big Tent model	70
Ihar Hrachyshka 2014-07-09	[openstack-dev] [neutron][all] switch from mysqldb to another eventlet aware mysql client	69
Sean Dague 2014-07-16	[openstack-dev] [nova] fair standards for all hypervisor drivers	64
Michael Still 2014-08-13	[openstack-dev] [nova][core] Expectations of core reviewers	61
He Jie Xu 2014-09-19	[openstack-dev] [Nova] Some ideas for micro-version implementation	57
Thierry Carrez 2014-08-22	[openstack-dev] [all] [ptls] The Czar system or how to scale PTLs	54

Initial Author and Date	Subject	Diff. People
Devananda 2014-08-12	[openstack-dev] [all] The future of the integrated release	53
Daniel P. Berrange 2014-09-05	[openstack-dev] [nova] Averting the Nova crisis by splitting out virt drivers	40
Anita Kuno 2014-09-19	[openstack-dev] Thoughts on OpenStack Layers and a Big Tent model	29
Ken'ichi Ohmichi 2014-09-25	[openstack-dev] [Nova] Some ideas for micro-version implementation	28
Maru Newby 2014-08-18	[openstack-dev] [nova][core] Expectations of core reviewers	28
Armando Migliaccio 2014-08-04	[openstack-dev] [Neutron] Group Based Policy and the way forward	27
Thierry Carrez 2014-08-29	[openstack-dev] [all] [ptls] The Czar system or how to scale PTLs	26
alawson 2014-09-09	[openstack-dev] Kilo Cycle Goals Exercise	26
Michael Still 2014-08-03	[openstack-dev] [Nova] Nominating Jay Pipes for nova-core	24
rbtcollins 2014-09-05	[openstack-dev] [Zaqar] Comments on the concerns arose during the TC meeting	22

3.3 Questions and Answers
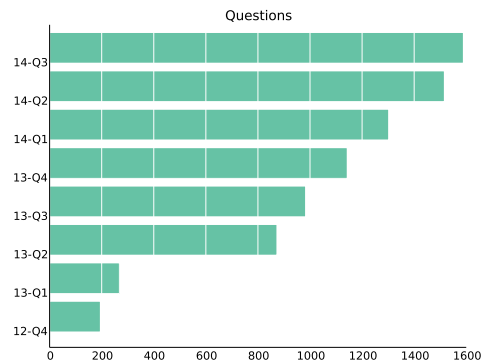
Period	Questions
12-Q4	195
13-Q1	268
13-Q2	873
13-Q3	983
13-Q4	1143
14-Q1	1302
14-Q2	1516
14-Q3	1589
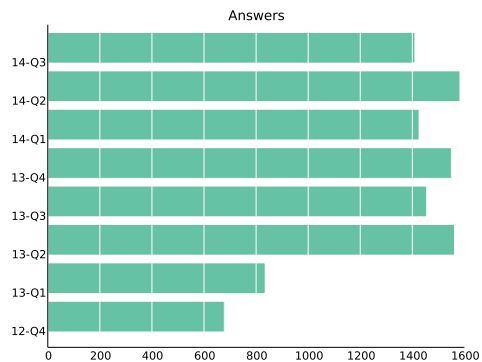
Period	Answers
12-Q4	678
13-Q1	835
13-Q2	1562
13-Q3	1455
13-Q4	1550
14-Q1	1426
14-Q2	1583
14-Q3	1410
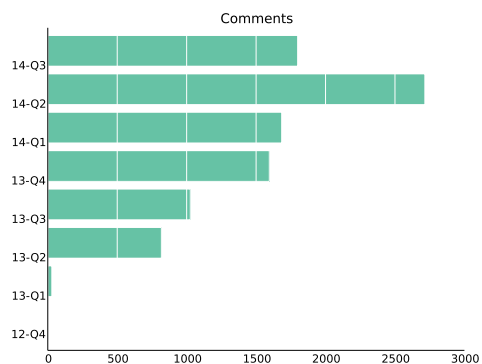
Period	Comments
12-Q4	2
13-Q1	29
13-Q2	818
13-Q3	1026
13-Q4	1595
14-Q1	1684
14-Q2	2714
14-Q3	1797
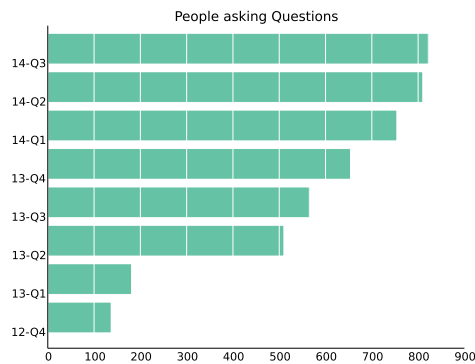
Period	People asking
12-Q4	137
13-Q1	181
13-Q2	510
13-Q3	565
13-Q4	654
14-Q1	754
14-Q2	810
14-Q3	822

- Top visited questions.

Question subject	Visits
how to install juno release from+	529
is it possible to launch instance+	492
all in one how to set+	375
worlddumppy error argument d idr expected+	304
moving vms from vsphere to openstack+	291
validating and installing os ksec2 admin+	281
attempt of rdo aio install icehouse+	275
cannot ping router tenant gateway by+	264
was someone able to install hp+	247
where to get openstacks response json+	229

- Top questions with more comments.

Question subject	Comments
dhcp and instances addressing stopped working+	5
vm cant get dhcp ip+	5
deploying designate on fedora+	5
nova instance boot fail with kernel+	5
ml2ovsgre network issues of vm instance+	5
cannot ping router tenant gateway by+	5
vm instance cant reach external network+	5
compute node unrecognized+	5
nova db sync install error+	5
cannot ping from external network to+	5

- Top questions with the highest number of different people participating.

Question subject	People participating
where to find someone to setup+	8
attempt of rdo aio install icehouse+	6
heat error image nonetype object has+	6
docker openstack nova instances dont boot+	6
when will juno repository be available+	5
unable to login into horizon console+	5
how to install juno release from+	5
how to start nova service from+	5
red hat rdo horizon dashboard will+	5
ubuntu instances refuse ssh+	5

- Top tags

Tag name	Ocurrences
OpenStack	1591
forum	1590
Ask	1478
gerrit	1295
community	1134
stackforge	846
cloud	820
branch	556
iaas	369
ovs	201
create	102
neutron	85
cinder	80
soft-lockup	80
redhat	77

3.4 IRC

Messages in IRC channels
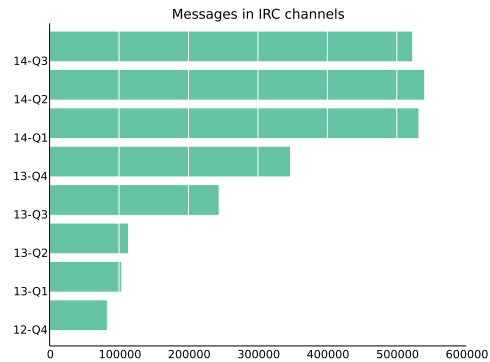
Period	Messages
12-Q4	83190
13-Q1	103851
13-Q2	113730
13-Q3	244193
13-Q4	347085
14-Q1	531899
14-Q2	540174
14-Q3	522858

People in IRC channels
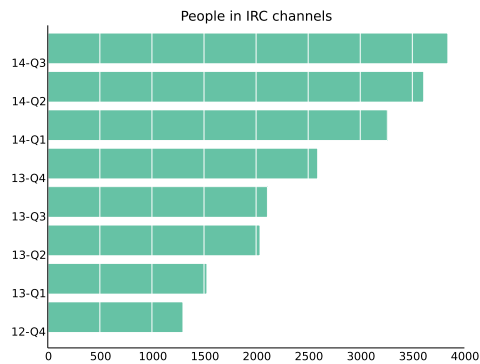
Period	People
12-Q4	1298
13-Q1	1528
13-Q2	2038
13-Q3	2109
13-Q4	2591
14-Q1	3260
14-Q2	3609
14-Q3	3841

IRC id	Messages sent
clarkb	15190
morganfainberg	10633
Jeremy Stanley	10477
Anita Kuno	10041
rbtcollins	9582
jroll	8715
Thierry Carrez	8185
jeblair	7687
ayoung	6945
Monty Taylor	6545
Devananda	5881
dhellmann	5664
Sean Dague	5182
Lucas Alvares Gomes	5097
John Dickinson	5085

Appendix A

Metrics Definitions

Metrics depicted in each OpenStack program:

- Commit: this is defined as the action(s) that performes a change in the source code. Bots, merges and other type of automatic activity is removed from the records. Besides, when aggregating several Gits, this metric only counts unique revisions (unique hashes found in the Git repositories). Finally, all branches are aggregated to the analysis.

- Submitted changeset: a changeset is the process of peer reviewing source code changes. A commit is not merged to the master code of a given project till this is approved for at least one core reviewer of such project. A submitted changeset is defined as any changeset submitted to the Gerrit system. However, given the limitations of the current version of the tool, with at least 5,900 changesets detected as having an erroneous creation date, this metric counts the first patchset upload action.

- Merged and abandoned changsets: a merge is defined as the patchset that was finally submitted to the source code. An abandoned changeset is a potential merge that was finally dismissed by developers as being part of the source code. This status is found in the status of the final patchset. However, although a patchset can be merged or abandoned, this action can be reverted. If a patchset presents several of these changes in the same period of time, only one of them is counted (the very last one). On the other hand, if those changes take place in different periods of analysis, both status would be counted.

- Open and closed ticket: a ticket in Launchpad is counted as closed if

the status of such ticket is defined as 'Fix Released'. The rest of the tickets are counted as opened tickets.

- Active Core Reviewer: a core reviewer has the possibility to use +2 or -2 actions when reviewing the code. However, if there are developers that for some period do not use those actions, those can not be measured as core reviewer. Thus, this metric provides information about 'active' core reviewers. This can be also defined as those developers that actively have used the +2 or -2 review action. Besides, this metric is filtered by branch of activity, only using 'master'. This helps to detect actual core reviewers in each of the projects.

- Authors: a developer is defined as author if she is the owner of the patchset sent for reviewing and this is merged into the source code. As previously indicated, automatic commits such bot's are removed from this analysis.

- Efficiency closing issues: this metric is a derivation of the Backlog Management Index (BMI) that measures the number of closed tickets out of the opened tickets in a period of time. Values under 1.0 indicates that the number of closing issues is lower than the number of opened issues arriving. On the contrary, higher charts would indicate better maintenance effort by the community.

- Efficiency closing changesets: this metric is a derivation of the Backlog Management Index as it is named as Review efficiency index (REI). As similarly used in the BMI index, this metrics measures the number of closed changesets (merged or abandoned) out of the total number of new changesets.

- Time to Merge: this time consists of the time between the first upload of the first patchset (as defined as a submitted changeset) till the last patchset of the changeset is merged into the code and this is indicated in the comments side of the Gerrit tool. This metric is provided in number of days.

- Patchsets per changeset: this metric calculates the total number of iterations in a changeset till this is abandoned or merged.

- Time waiting for the reviewer or the submitter: a changeset is waiting for a reviewer action if a new patchset upload or a new changset arrives to the system. On the other hand, a submitter action is required when

a specific negative verification or reviewing action takes place (Verified -1/-2 or Code-Review -1/-2). In addition, when a Code-Review +2 action takes place, it is assumed that the changeset is closing and no more times are registered either for the reviewer or the submitter. For this analysis, those patchsets flagged as work in progress are ignored.

Metrics depicted in the general overview:

- Community structure, core, regular and casual developers: developers are ordered in descendant order by the number of commits authored for a given period. Core developers are defined as the list of developers that reach 80% of the total commits. Regular is the set of developers that are between that 80% and 95% of the commits. Casual developers are found in the rest of the 5%. Bots are ignored in this list of developers.

- Developer per month: average of developers per month ignoring bots.

- Emails sent: number of emails sent by people to the several mailing lists. Bots are not registered.

- People sending emails: number of people sending those emails ignoring bots.

- People initiating threads: a thread is defined as a list of emails that has the same root. There may exist threads of one email.

- Top threads: this list provides the longest threads in terms of number of emails that have a common root email.

- Questions, answers and comments in Askbot.

- People asking questions in Askbot: number of people sending a new question.

- Top visited questions.

- Top tags: each of the questions has a list of associated tags. The top tags are those with the highest number of repetitions aggregating all of the questions.

- Messages and people in IRC: this analysis ignores as a message those entries in the IRC channels that provide information about people entering or leaving the system.

Appendix B

Source Code and Data Sources

The data source used to provide the data of this analysis can be found at the GrimoireLib library. Specifically the openstack_report.py file[1].

With respect to the list of analyzed repositories per project, the following table lists all of them. There are three data sources: git activity (scm), tickets activity (its) and review activity (scr). This information is based on the information listed in the yaml organizational file[2] provided by the OpenStack Foundation.

Program	Data source	Repository
barbican	its	https://bugs.launchpad.net/barbican
barbican	scm	git://git.openstack.org/openstack/kite
barbican	scm	git://git.openstack.org/openstack/barbican
barbican	scr	review.openstack.org_openstack/kite
barbican	scr	review.openstack.org_openstack/barbican
ceilometer	its	https://bugs.launchpad.net/ceilometer
ceilometer	scm	https://github.com/openstack/ceilometer.git
ceilometer	scr	review.openstack.org_openstack/ceilometer
cinder	its	https://bugs.launchpad.net/cinder
cinder	scm	https://github.com/openstack/cinder.git

---

[1] `https://github.com/VizGrimoire/GrimoireLib/blob/master/vizGrimoireJS/openstack_report.py`. In order to download the exact version used for this analysis with the hash *27f7419bb4004d2c1f0ac0fca8246d4af8095732*

[2] urlhttp://git.openstack.org/cgit/openstack/governance/tree/reference/programs.yaml

cinder	scr	review.openstack.org_openstack/cinder
clients	its	https://bugs.launchpad.net/python-ceilometerclient
clients	its	https://bugs.launchpad.net/python-keystoneclient
clients	its	https://bugs.launchpad.net/python-swiftclient
clients	its	https://bugs.launchpad.net/python-glanceclient
clients	its	https://bugs.launchpad.net/python-novaclient
clients	its	https://bugs.launchpad.net/python-cinderclient
clients	its	https://bugs.launchpad.net/python-marconiclient
clients	its	https://bugs.launchpad.net/python-heatclient
clients	its	https://bugs.launchpad.net/python-saharaclient
clients	its	https://bugs.launchpad.net/python-designateclient
clients	its	https://bugs.launchpad.net/python-neutronclient
clients	scm	git://git.openstack.org/openstack/python-kiteclient
clients	scm	https://github.com/openstack/python-glanceclient.git
clients	scm	https://github.com/openstack/python-neutronclient.git
clients	scm	https://github.com/openstack/python-ceilometerclient.git
clients	scm	https://github.com/openstack/python-keystoneclient.git
clients	scm	https://github.com/openstack/python-troveclient.git
clients	scm	git://git.openstack.org/openstack-dev/heat-cfnclient
clients	scm	https://github.com/openstack/python-heatclient.git
clients	scm	https://github.com/openstack/python-novaclient.git
clients	scm	https://github.com/openstack/python-cinderclient.git
clients	scm	https://github.com/openstack/python-marconiclient.git
clients	scm	git://git.openstack.org/openstack/python-saharaclient
clients	scm	https://github.com/openstack/python-ironicclient.git
clients	scm	https://github.com/openstack/python-swiftclient.git
clients	scr	review.openstack.org_openstack/python-saharaclient
clients	scr	review.openstack.org_openstack/python-cinderclient
clients	scr	review.openstack.org_openstack/python-neutronclient
clients	scr	review.openstack.org_stackforge/python-designateclient
clients	scr	review.openstack.org_openstack/python-ironicclient
clients	scr	review.openstack.org_openstack/python-swiftclient
clients	scr	review.openstack.org_openstack/python-glanceclient
clients	scr	review.openstack.org_openstack/python-novaclient
clients	scr	review.openstack.org_openstack/python-kiteclient
clients	scr	review.openstack.org_openstack/python-ceilometerclient
clients	scr	review.openstack.org_openstack/python-keystoneclient
clients	scr	review.openstack.org_openstack/python-troveclient
clients	scr	review.openstack.org_openstack/python-heatclient
Common Libraries	its	https://bugs.launchpad.net/hacking

Common Libraries	its	https://bugs.launchpad.net/taskflow
Common Libraries	its	https://bugs.launchpad.net/oslo.messaging
Common Libraries	its	https://bugs.launchpad.net/pbr
Common Libraries	scm	git://git.openstack.org/openstack/oslo.rootwrap
Common Libraries	scm	git://git.openstack.org/openstack/taskflow
Common Libraries	scm	git://git.openstack.org/openstack/pycadf
Common Libraries	scm	https://github.com/openstack/oslo.messaging.git
Common Libraries	scm	git://git.openstack.org/openstack/oslo.vmware
Common Libraries	scm	https://github.com/openstack/oslo-incubator.git
Common Libraries	scm	git://git.openstack.org/openstack-dev/oslo-cookiecutter
Common Libraries	scm	git://git.openstack.org/openstack/stevedore
Common Libraries	scm	https://github.com/openstack/oslo.version.git
Common Libraries	scm	git://git.openstack.org/openstack/oslo.db
Common Libraries	scm	git://git.openstack.org/openstack/oslosphinx
Common Libraries	scm	https://github.com/openstack/oslo.config.git
Common Libraries	scm	git://git.openstack.org/openstack/oslo.i18n
Common Libraries	scr	review.openstack.org_openstack-dev/hacking
Common Libraries	scr	review.openstack.org_openstack/oslo.db
Common Libraries	scr	review.openstack.org_openstack/oslo.config
Common Libraries	scr	review.openstack.org_openstack-dev/pbr
Common Libraries	scr	review.openstack.org_openstack/oslo.i18n
Common Libraries	scr	review.openstack.org_openstack/oslo-incubator
Deployment	its	https://bugs.launchpad.net/python-tuskarclient
Deployment	its	https://bugs.launchpad.net/tuskar
Deployment	scm	git://git.openstack.org/openstack/os-refresh-config
Deployment	scm	git://git.openstack.org/openstack/tripleo-puppet-elements
Deployment	scm	https://github.com/openstack/tripleo-incubator.git
Deployment	scm	git://git.openstack.org/openstack/os-cloud-config
Deployment	scm	https://github.com/openstack/tripleo-heat-templates.git
Deployment	scm	git://git.openstack.org/openstack/python-tuskarclient
Deployment	scm	git://git.openstack.org/openstack/os-collect-config
Deployment	scm	https://github.com/openstack/tripleo-image-elements.git
Deployment	scm	git://git.openstack.org/openstack/os-apply-config
Deployment	scm	git://git.openstack.org/openstack/tuskar
Deployment	scr	review.openstack.org_openstack/tripleo-heat-templates
Deployment	scr	review.openstack.org_openstack/os-refresh-config
Deployment	scr	review.openstack.org_openstack/tuskar
Deployment	scr	review.openstack.org_openstack/os-cloud-config
Deployment	scr	review.openstack.org_openstack/tripleo-image-elements
Deployment	scr	review.openstack.org_openstack/diskimage-builder

Deployment	scr	review.openstack.org_openstack/python-tuskarclient
Deployment	scr	review.openstack.org_openstack/tripleo-puppet-elements
Deployment	scr	review.openstack.org_openstack/os-collect-config
Deployment	scr	review.openstack.org_openstack/tripleo-incubator
Deployment	scr	review.openstack.org_openstack/os-apply-config
designate	its	https://bugs.launchpad.net/designate
designate	scm	git://git.openstack.org/openstack/designate
designate	scr	review.openstack.org_openstack/designate
Devstack	its	https://bugs.launchpad.net/devstack
Devstack	scm	git://git.openstack.org/openstack-dev/devstack
Devstack	scr	review.openstack.org_openstack-dev/devstack
Documentation	its	https://bugs.launchpad.net/openstack-api-site
Documentation	its	https://bugs.launchpad.net/openstack-manuals
Documentation	scm	git://git.openstack.org/openstack/security-doc
Documentation	scm	https://github.com/openstack/identity-api.git
Documentation	scm	https://github.com/openstack/volume-api.git
Documentation	scm	git://git.openstack.org/openstack/openstack-doc-tools
Documentation	scm	https://github.com/openstack/api-site.git
Documentation	scm	https://github.com/openstack/object-api.git
Documentation	scm	https://github.com/openstack/image-api.git
Documentation	scm	https://github.com/openstack/compute-api.git
Documentation	scm	https://github.com/openstack/openstack-manuals.git
Documentation	scm	git://git.openstack.org/openstack/ha-guide
Documentation	scm	git://git.openstack.org/openstack/operations-guide
Documentation	scm	https://github.com/openstack/netconn-api.git
Documentation	scm	git://git.openstack.org/openstack/training-guides
Documentation	scr	review.openstack.org_openstack/netconn-api
Documentation	scr	review.openstack.org_openstack/identity-api
Documentation	scr	review.openstack.org_openstack/operations-guide
Documentation	scr	review.openstack.org_openstack/ha-guide
Documentation	scr	review.openstack.org_openstack/api-site
Documentation	scr	review.openstack.org_openstack/object-api
Documentation	scr	review.openstack.org_openstack/training-guides
Documentation	scr	review.openstack.org_openstack/openstack-doc-tools
Documentation	scr	review.openstack.org_openstack/security-doc
Documentation	scr	review.openstack.org_openstack/image-api
Documentation	scr	review.openstack.org_openstack/volume-api
Documentation	scr	review.openstack.org_openstack/compute-api
Documentation	scr	review.openstack.org_openstack/openstack-manuals
glance	its	https://bugs.launchpad.net/glance

glance	scm	git://git.openstack.org/openstack/glance_store
glance	scm	https://github.com/openstack/glance.git
glance	scr	review.openstack.org_openstack/glance_store
glance	scr	review.openstack.org_openstack/glance
heat	its	https://bugs.launchpad.net/heat
heat	scm	https://github.com/openstack/heat.git
heat	scr	review.openstack.org_openstack/heat
horizon	its	https://bugs.launchpad.net/horizon
horizon	scm	https://github.com/openstack/horizon.git
horizon	scr	review.openstack.org_openstack/horizon
Infrastructure	its	https://bugs.launchpad.net/openstack-ci
Infrastructure	scm	git://git.openstack.org/openstack-infra/os-loganalyze
Infrastructure	scm	https://github.com/openstack-infra/askbot-theme.git
Infrastructure	scm	https://github.com/openstack-infra/gerritbot.git
Infrastructure	scm	https://github.com/openstack-infra/nose-html-output.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/activity-board
Infrastructure	scm	git://git.openstack.org/openstack-infra/subunit2sql
Infrastructure	scm	https://github.com/openstack-infra/zuul.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/nodepool
Infrastructure	scm	git://git.openstack.org/openstack-infra/tripleo-ci
Infrastructure	scm	https://github.com/openstack-infra/gear.git
Infrastructure	scm	https://github.com/openstack-infra/jeepyb.git
Infrastructure	scm	https://github.com/openstack-infra/statusbot.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/project-config
Infrastructure	scm	git://git.openstack.org/openstack-infra/elastic-recheck
Infrastructure	scm	git://git.openstack.org/openstack-infra/storyboard
Infrastructure	scm	https://github.com/openstack-infra/config.git
Infrastructure	scm	https://github.com/openstack-infra/gerritlib.git
Infrastructure	scm	https://github.com/openstack-infra/releasestatus.git
Infrastructure	scm	https://github.com/openstack/openstack-planet.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/odsreg
Infrastructure	scm	git://git.openstack.org/openstack-infra/zuul-packaging
Infrastructure	scm	https://github.com/openstack-infra/gearman-plugin.git
Infrastructure	scm	https://github.com/openstack-infra/jenkins-job-builder.git
Infrastructure	scm	git://git.openstack.org/openstack-dev/openstack-nose
Infrastructure	scm	https://github.com/openstack-infra/zmq-event-publisher.git
Infrastructure	scm	git://git.openstack.org/openstack-infra/groups
Infrastructure	scm	git://git.openstack.org/openstack-infra/storyboard-webclient

Infrastructure	scm	https://github.com/openstack-infra/devstack-gate.git
Infrastructure	scm	https://github.com/openstack-infra/git-review.git
Infrastructure	scm	https://github.com/openstack-infra/reviewday.git
Infrastructure	scr	review.openstack.org_openstack-dev/openstack-nose
Infrastructure	scr	review.openstack.org_openstack-infra/gearman-plugin
Infrastructure	scr	review.openstack.org_openstack-infra/gitdm
Infrastructure	scr	review.openstack.org_openstack-infra/nose-html-output
Infrastructure	scr	review.openstack.org_openstack-infra/puppet-vcsrepo
Infrastructure	scr	review.openstack.org_openstack-infra/zmq-event-publisher
Infrastructure	scr	review.openstack.org_openstack-infra/devstack-gate
Infrastructure	scr	review.openstack.org_openstack-infra/gerritlib
Infrastructure	scr	review.openstack.org_openstack-infra/lodgeit
Infrastructure	scr	review.openstack.org_openstack-infra/puppet-apparmor
Infrastructure	scr	review.openstack.org_openstack-infra/reviewday
Infrastructure	scr	review.openstack.org_openstack-infra/askbot-theme
Infrastructure	scr	review.openstack.org_openstack-infra/gerrit
Infrastructure	scr	review.openstack.org_openstack-infra/jeepyb
Infrastructure	scr	review.openstack.org_openstack-infra/odsreg
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Infrastructure	scr	review.openstack.org_openstack-infra/subunit2sql
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Infrastructure	scr	review.openstack.org_openstack-infra/git-review
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Infrastructure	scr	review.openstack.org_openstack-infra/statusbot
Infrastructure	scr	review.openstack.org_openstack-infra/project-config
Infrastructure	scr	review.openstack.org_openstack-infra/config
Infrastructure	scr	review.openstack.org_openstack-infra/gerritbot
Infrastructure	scr	review.openstack.org_openstack-infra/jenkins-job-builder
Infrastructure	scr	review.openstack.org_openstack-infra/publications
Infrastructure	scr	review.openstack.org_openstack-infra/releasestatus
Infrastructure	scr	review.openstack.org_openstack/openstack-planet
ironic	its	https://bugs.launchpad.net/ironic
ironic	scm	https://github.com/openstack/ironic.git
ironic	scm	git://git.openstack.org/openstack/ironic-python-agent
ironic	scr	review.openstack.org_openstack/ironic-python-agent
ironic	scr	review.openstack.org_openstack/ironic
keystone	its	https://bugs.launchpad.net/keystone

keystone	scm	git://git.openstack.org/openstack/python-keystoneclient-federation
keystone	scm	https://github.com/openstack/keystone.git
keystone	scm	git://git.openstack.org/openstack/keystonemiddleware
keystone	scm	git://git.openstack.org/openstack/python-keystoneclient-kerberos
keystone	scm	git://git.openstack.org/openstack/keystonemiddleware
keystone	scr	review.openstack.org_openstack/python-keystoneclient-federation
keystone	scr	review.openstack.org_openstack/keystonemiddleware
keystone	scr	review.openstack.org_openstack/keystone
keystone	scr	review.openstack.org_openstack/python-keystoneclient-kerberos
manila	its	https://bugs.launchpad.net/manila
manila	scm	git://git.openstack.org/openstack/manila
manila	scr	review.openstack.org_openstack/manila
neutron	its	https://bugs.launchpad.net/neutron
neutron	scm	https://github.com/openstack/neutron.git
neutron	scr	review.openstack.org_openstack/neutron
nova	its	https://bugs.launchpad.net/nova
nova	scm	https://github.com/openstack/nova.git
nova	scr	review.openstack.org_openstack/nova
others	its	https://bugs.launchpad.net/tuskar-ui
others	its	https://bugs.launchpad.net/heat-templates
others	its	https://bugs.launchpad.net/django-openstack-auth
others	its	https://bugs.launchpad.net/swift-bench
others	its	https://bugs.launchpad.net/heat-cfntools
others	scm	git://git.openstack.org/openstack/sahara-image-elements
others	scm	git://git.openstack.org/openstack/sahara-dashboard
others	scm	git://git.openstack.org/openstack/tuskar-ui
others	scm	git://git.openstack.org/openstack/django_openstack_auth
others	scm	git://git.openstack.org/openstack/swift-bench
others	scm	git://git.openstack.org/openstack/sahara-extra
others	scm	git://git.openstack.org/openstack/heat-cfntools
others	scm	git://git.openstack.org/openstack/trove-integration
others	scr	review.openstack.org_openstack/heat-templates
others	scr	review.openstack.org_openstack/sahara-image-elements
others	scr	review.openstack.org_openstack/sahara-dashboard
others	scr	review.openstack.org_openstack/heat-cfntools
others	scr	review.openstack.org_openstack/trove-integration

others	scr	review.openstack.org_openstack/sahara-extra
Quality Assurance	its	https://bugs.launchpad.net/tempest
Quality Assurance	scm	git://git.openstack.org/openstack-dev/grenade
Quality Assurance	scm	https://github.com/openstack/tempest.git
Quality Assurance	scr	review.openstack.org_openstack-dev/grenade
Quality Assurance	scr	review.openstack.org_openstack/tempest
Release cycle management	scm	git://git.openstack.org/openstack-infra/release-tools
Release cycle management	scm	git://git.openstack.org/openstack/requirements
Release cycle management	scr	review.openstack.org_openstack/requirements
sahara	its	https://bugs.launchpad.net/sahara
sahara	scm	git://git.openstack.org/openstack/sahara
sahara	scr	review.openstack.org_openstack/sahara
swift	its	https://bugs.launchpad.net/swift
swift	scm	https://github.com/openstack/swift.git
swift	scr	review.openstack.org_openstack/swift
trove	its	https://bugs.launchpad.net/trove
trove	scm	https://github.com/openstack/trove.git
trove	scr	review.openstack.org_openstack/trove
zaqar	its	https://bugs.launchpad.net/zaqar
zaqar	scm	git://git.openstack.org/openstack/zaqar
zaqar	scr	review.openstack.org_openstack/zaqar